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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/228,046	03/27/2014	Thien Nguyen	INCEP-001COA

CONFIRMATION NO. 7700

138718
Polsinelli LLP
3 Embarcadero Center
Suite 2400
San Francisco, CA 94111

POA ACCEPTANCE LETTER

OC000000093915995

Date Mailed: 09/08/2017

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/06/2017.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

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

/ldvan/

EX1020
Petitioner Ascentcare ('969 Patent)

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
14/228,046	03/27/2014	3732	800	INCEP-001COA	20	1

CONFIRMATION NO. 7700

CORRECTED FILING RECEIPT

138718
Polsinelli LLP
3 Embarcadero Center
Suite 2400
San Francisco, CA 94111

OC000000093918040

Date Mailed: 09/08/2017

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Thien Nguyen, Santa Ana, CA;
Tam Thanh Pham, San Francisco, CA;

Applicant(s)

Dryshield, LLC, Fountain Valley, CA;

Assignment For Published Patent Application

Dryshield, LLC, Fountain Valley, CA

Power of Attorney: The patent practitioners associated with Customer Number 138718

Domestic Priority data as claimed by applicant

This application is a CON of 14/100,323 12/09/2013 PAT 8911232
which claims benefit of 61/734,939 12/07/2012

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.) - None.
Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: No

Permission to Access Search Results: No

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

If Required, Foreign Filing License Granted: 04/18/2014

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/228,046**

Projected Publication Date: Not Applicable

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****
Title

INTRAORAL DEVICE WITH MESH

Preliminary Class

433

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

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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

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

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

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

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

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

NOT GRANTED

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

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,046
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COA

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-				
		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

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.

Substitute for Form 1449/PTO	*Complete if Known*	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,046
	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-001COA

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-001COD U.S. Patent Application 14/228,057; 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		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.

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

Electronic Acknowledgement Receipt

EFS ID:	30869915
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	07-NOV-2017
Filing Date:	27-MAR-2014
Time Stamp:	13:22:03
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-001COA_IDS_Statement_11-6-17.pdf	19264 bcc0f182f5d27eaffebb67bd8236532e23703847	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COA_IDS_1449_11-6-17.pdf	55068 0c1342ae9a5769120cbe37f9076984a719c61447	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	74332	

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: 3625 Examiner: Anne M. Georgalas

Serial No.: 15/462,727 Filed: March 17, 2017

In re Application of: Avery Levy

Confirmation No.: 2234 Customer No.: 138718

Title: UPSELLING RELATED PRODUCTS VIA A USER DEVICE

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

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
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UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,046	03/27/2014	Thien Nguyen	INCEP-001COA	7700

138718 7590 01/16/2018

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

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3732	

NOTIFICATION DATE	DELIVERY MODE
01/16/2018	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

Office Action Summary	Application No. 14/228,046	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 *11/07/2017*.

☐ 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) *2-16 and 19-22* 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) *2-16 and 19-22* 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: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

Double Patenting

2. 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.

3. Claims 2-16 and 19-22 are rejected on the ground of nonstatutory double patenting over claims 1-35 of U.S. Patent No. 8,911,232 in view of Black et al. (2009/0274991).

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: The application independent claim 21 essentially claims the subject matter of the patent claims 1 and 3. The patent claims fail to recite a superior wall and an inferior wall connecting the exterior edges of the anterior and posterior walls across a superior and inferior wall spans respectively. Black et al. discloses an surgical aspirating paddle 71 (Fig. 7A) or 60 (Figs. 6A-6C) formed as a pocket with an interior and anterior and posterior wall, wherein side

walls (as viewed in Fig. 6B) is less than a width of the anterior wall. Such side walls are equivalent to the claimed superior and inferior walls connecting the anterior and posterior walls. It would have been obvious that the patent claims include such superior and inferior side walls connecting the anterior and posterior walls as claimed.

The application independent claim 22 essentially claims the subject matter of the patent claims 1 and 3. The patent claim fails to disclose a connection configured to connect the main body portion to a cheek retractor. Black et al. disclose a connection 49 configured to connect the main body 40a at a second to a cheek retractor 40b (Figs. 3A-3B; paragraph 79). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate such connection in the patent claim in order to connect a cheek retractor to the main body as taught by Black et al.

Claim Rejections - 35 USC § 112

4. 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.

5. Claims 2, 19-20, and 22, 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 2 recites “the side wall” which lacks antecedent basis. Note that claim 2 depends on claim 21 which has been amended and no longer defines such side wall.

- Claims 19-20 each recites "the bite block portion" and "the strap portion" which lack antecedent bases. Claims 19-20 depend on claim 21 which does not define such bite block portion or strap portion.

- Claim 22 recites “the width of the anterior wall width” (lines 18-19), which should be corrected to recite “the width of the anterior wall”.

Claim Rejections - 35 USC § 103

6 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.

7. **Claims 2-8, 11-14, 16, 19-20 and 21-22 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable by Maycher et al. (WO 2011/014952) in view of Black et al. (2009/0274991).**

Regarding claim 21, Maycher et al. discloses a dental mouthpiece comprising a main body portion 20 configured as a pocket 29 having an interior 29 (Fig. paragraphs 26-27) having a wall 26 with apertures 22 (Figs. 9; paragraphs 26-28). Maycher et al. further discloses the body portion 20 may be rectangular (paragraph 40) in which the interior 29 would be defined by corresponding anterior and posterior walls connected at respective exterior edges thereof by a superior/side wall extending across a superior/side wall span and an inferior/side wall extending across an inferior/side wall span between the anterior and posterior walls. As shown in Fig. 9, there are openings and/or apertures 22 disposed on the anterior, posterior, and superior/side walls 26; the apertures 22 extend through the wall 26 into the interior 29 of the pocket (Fig. 9).

Maycher et al. discloses the dimension of a rectangular mouthpiece may be similar of the dimensions of the cylindrical/tubular mouthpiece (paragraph 40), failing to explicitly discloses the superior/side and inferior/side wall spans being less than a width of the anterior wall. Black et al. discloses an surgical aspirating paddle 71 (Fig. 7A) or 60 (Figs. 6A-6C) formed as a pocket with an interior and anterior and posterior wall, wherein side walls (as viewed in Fig. 6B) is less than a width of the anterior wall. It would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt Maycher's rectangular mouthpiece to have a side wall span being less than a width of the anterior wall as taught by Black et al. in order to form a low-profile mouthpiece suitable to be fitted within the mouth.

As to claims 2-6, Maycher et al.'s perforations 22 are shown being disposed on the anterior, posterior, and superior/side walls 26 and are spaced apart, thereby forming a mesh. As to claim 7, the opening 22 in the anterior wall is considered to be a slit along a longitudinal axis of the main body. As to claim 8, suction is provided at a suction connector 24 within the interior of the pocket to provide suction of fluids through the perforations 22 towards the suction connector (Fig. 1; paragraph 43).

As to claims 11-12, Maycher et al. fails to disclose a cheek retractor portion. Black et al. discloses a mouthpiece 240 comprising cheek retractor 240e having a surface that applies pressure when the dental mouthpiece is bent, wherein the pressure is based on resilience of a material from which the cheek retractor 240 is formed; the cheek retractor 22 comprises an extension of the pocket/lumen 241 and a side wall of the extension comprises one or more perforation/opening into lumen 241 (Figs. 4A; 87-88). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Maycher et al. by incorporating a cheek retractor as taught by Black et al. in order to provide retraction of the cheek during a procedure within the mouth. As to claims 13 and 16, Maycher et al. fails to

disclose a stability bar and the anterior and posterior walls having different thicknesses. Black et al. discloses a the posterior wall may be thicker due to stiffener 347 or 447 to reinforce to the mouthpiece (Figs. 23C, 24A paragraph 127). The posterior wall portion at stiffener 347 is considered to comprise a stability bar (extra thickness) protruding from an interior surface of the posterior wall along the longitudinal axis of the main body and entending through at least part of the cheek retractor. The anterior wall and the posterior wall have different thicknesses due to the stiffener extra thickness on one wall (Figs. 23C, 24A; paragraph 127). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Maycher et al. by including a stability bar stiffener, wherein the stiffener would result in the anterior and posterior walls having different thicknesses as taught by Black et al. in order to provide reinforcement to the mouthpiece.

As to claim 14, 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, Maycher et al. discloses the end product and the structures thereof as claimed as detailed above with all the essential portions forming the device as one piece. The burden is shifted to applicant to show an unobvious difference between Maycher et al.' device and the invention that would have resulted from the injection molding process.

As to claims 19-20, Maycher et al. fails to disclose a bite block portion. Black et al. discloses a detachable mouth prop 10 having a bite block portion 10 and a strap portion 12

corresponding to a plug 65 of the main body (Fig. 6A). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include such detachable mouth prop 10 to Maycher et al. in order to prop open the mouth during a treatment procedure as taught by Black et al.

Regarding claim 22, Maycher et al. discloses all the elements as claimed as detailed above with respect to claim 21. Maycher et al. further discloses a suction connector portion 24 connected to one end of the main body portion; the suction connector portion 24 configured to connect a vacuum source 50 with the interior of the pocket within the main body portion. Maycher et al. fails to disclose a connection configured to connect the main body portion to a cheek retractor. Black et al. disclose a connection 49 configured to connect the main body 40a at a second to a cheek retractor 40b (Figs. 3A-3B; paragraph 79). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate such connection in Maycher et al. in order to connect a cheek retractor to the main body as taught by Black et al.

8. **Claims 9-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Maycher et al. in view of Black et al., as applied to claim 21, and further in view of Riddle (1,471,207).** Maycher/Black discloses the invention substantially as claimed except for a bridge structure. Riddle discloses a saliva ejector tube having a bridge structure 5 protruding from an interior surface of a wall thereof and unattached to the opposite wall. The protruding bridge comprises a plurality of protrusions (waved wire) to keep the walls separated from one another during suction (Fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate such bridge into Maycher/Black's device in order to prevent collapse when under suction pressure as explicitly taught by Riddle.

9. **Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maycher et al. view of Black et al., and further in view of Sclafani (5,890,899).**

Maycher/Black discloses the invention substantially as claimed. Maycher discloses material used to form the device being flexible, high heat-resistant, as evidenced by disclosure of sterilization for reuse (paragraph 29). Black et al. discloses However, Maycher/Black fails to disclose the material being silicone-base. Sclafani discloses a dental suction isolator device formed of silicone-based material (Figs. 1-9, column 8 lines 10-15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make Maycher/Black' device from silicone-based material as taught by Sclafani to be a known alternative suitable known material while yielding the same and/or predictable results.

Response to Arguments

10. Applicant's arguments regarding the newly recited limitation(s) in the independent claims 21 and 22 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

Applicant's remarks are held to be responded to in the above ground(s) of rejection.

Conclusion

11. 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

Notice of References Cited	Application/Control No. 14/228,046	Applicant(s)/Patent Under Reexamination NGUYEN ET AL.	
	Examiner HAO D. MAI	Art Unit 3732	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2012/0237894 A1	09-2012	Maycher; David John	A61C17/043	433/95
	B	US-				
	C	US-				
	D	US-				
	E	US-				
	F	US-				
	G	US-				
	H	US-				
	I	US-				
	J	US-				
	K	US-				
	L	US-				
	M	US-				

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N	WO 2011014952 A1	02-2011	CA	PESUN IGOR	A61C17/043
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,046
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COA

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	12/20/2017

*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.**

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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	14/228,046
	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-001COA

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-001COD U.S. Patent Application 14/228,057; 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	12/20/2017

*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). '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. /H.D.M./

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14228046	NGUYEN ET AL.
	Examiner	Art Unit
	HAO D MAI	3732

CPC- SEARCHED		
Symbol	Date	Examiner
A61C 17/043,046	11/03/2015	HDM
Update Search	05/31/2016	HDM
Update Search	10/03/2016	HDM
A61C 17/04, 0208	11/01/2016	HDM
Update Search	11/01/2016	HDM
Udpate Search	05/30/2017	HDM
Update Search	12/26/2017	HDM

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
433	93	11/03/2015	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	11/03/2015	HDM
Review searches of parent case 14/100323	11/03/2015	HDM
Update Search	05/31/2016	HDM
Update Search	10/03/2016	HDM
Update Search	11/01/2016	HDM
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[Continued on next page]

(54) Title: DENTAL APPARATUS

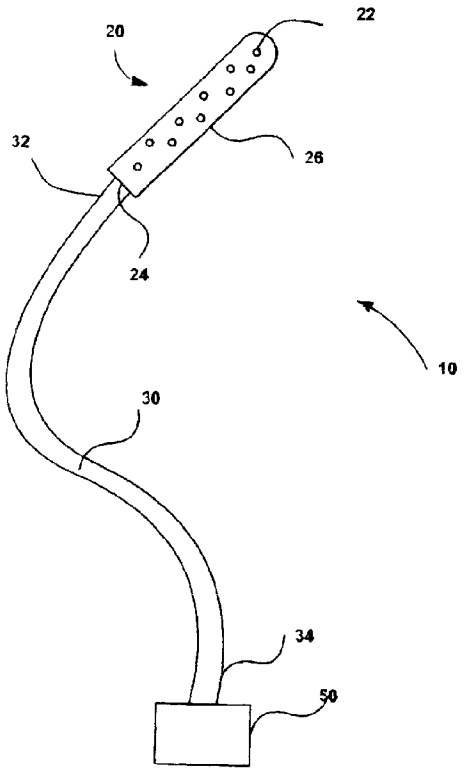


FIG. 1

(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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— *with international search report (Art. 21(3))*

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.

[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.

[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

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,

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.

[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

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

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,

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.

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.

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;

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.

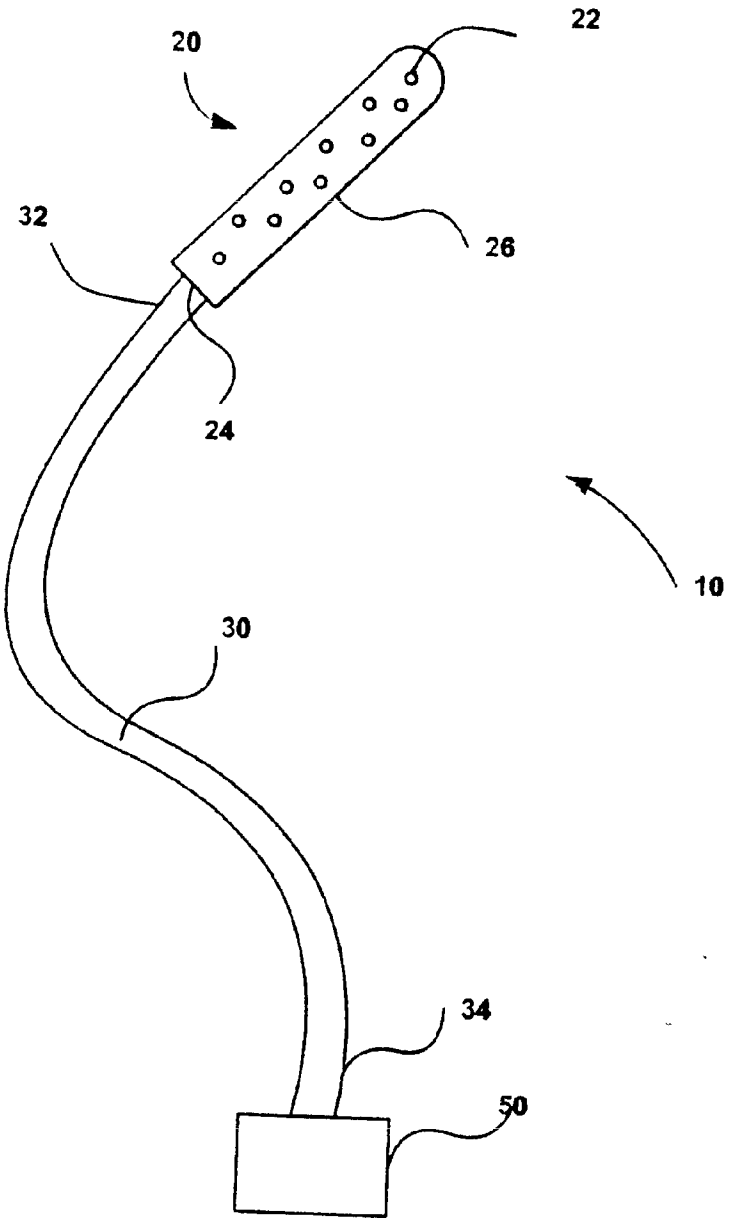


FIG. 1

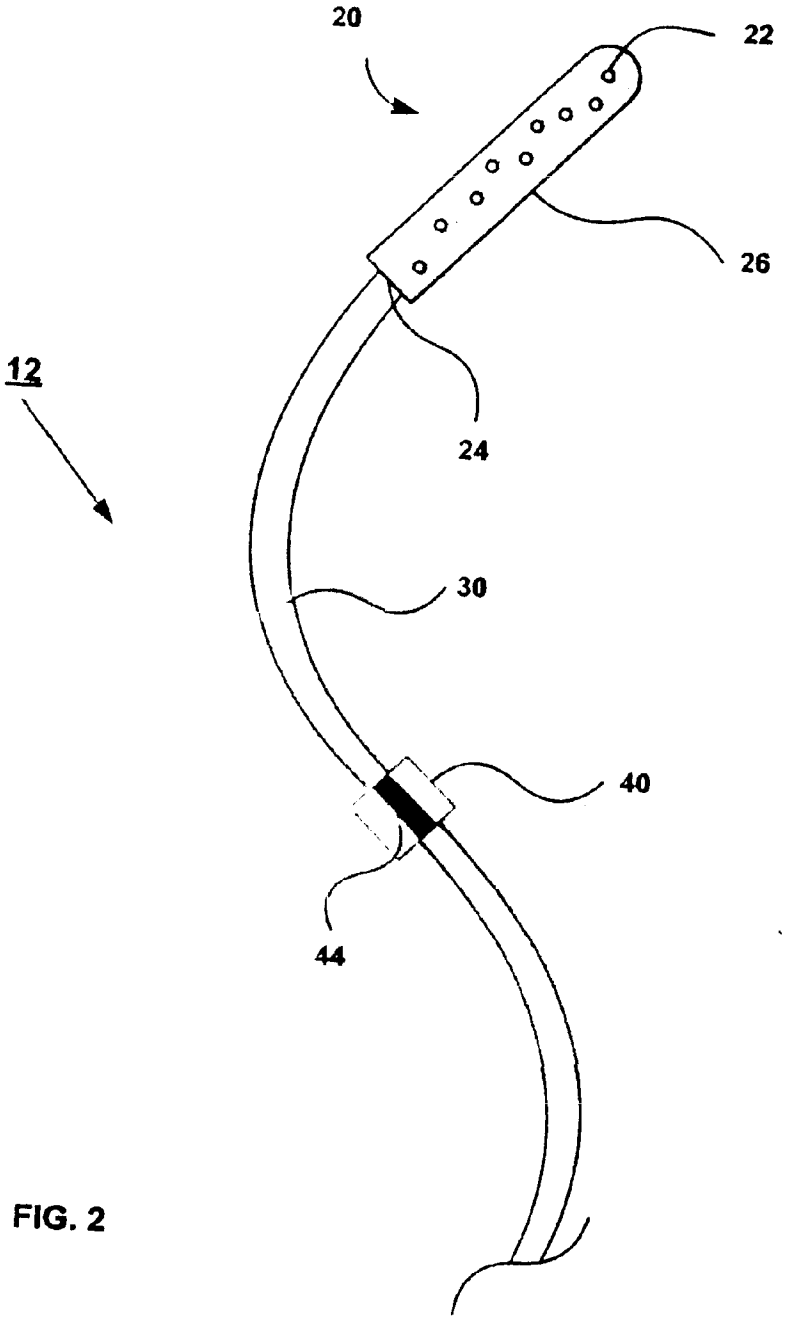


FIG. 2

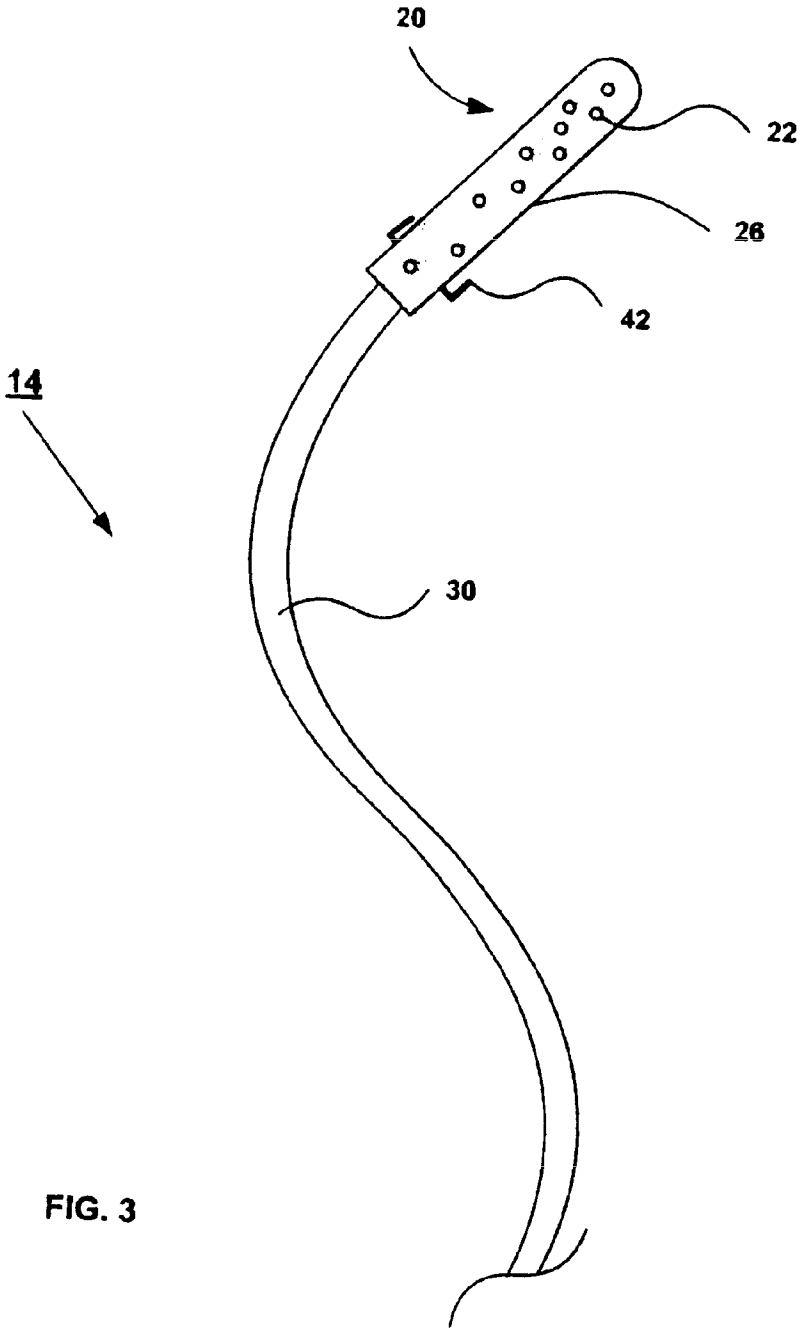


FIG. 3

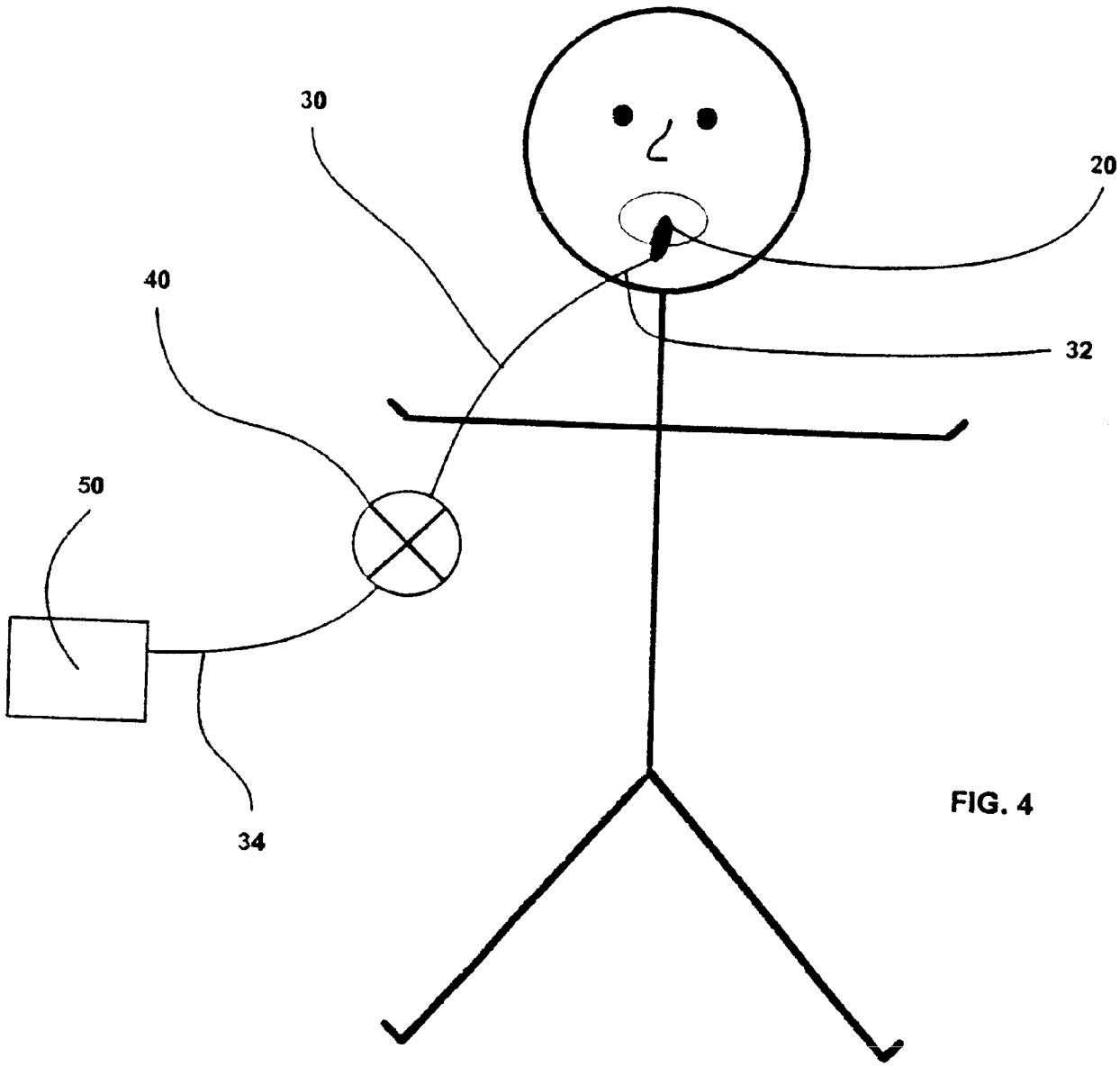


FIG. 4

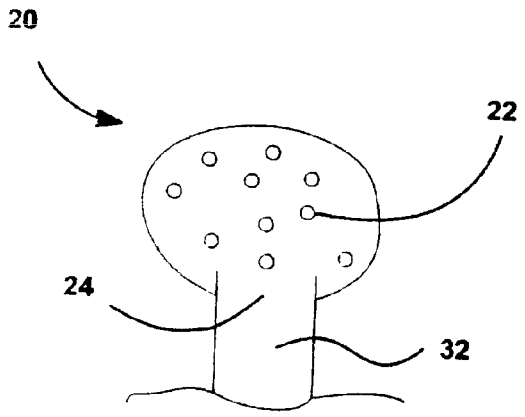


FIG. 5

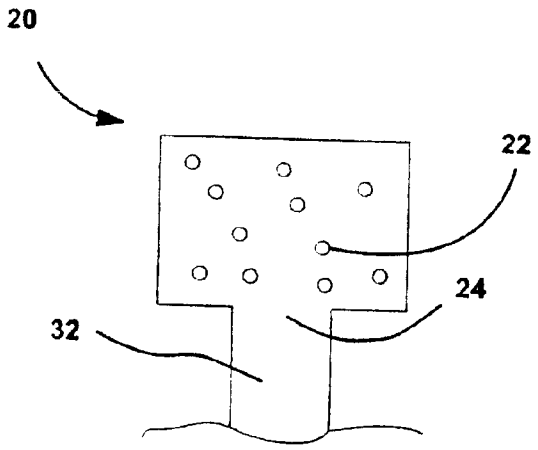


FIG. 6

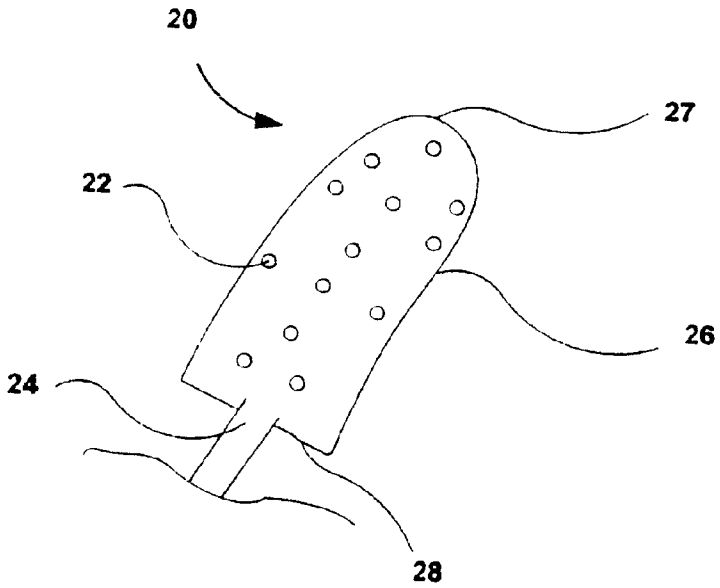


FIG. 7

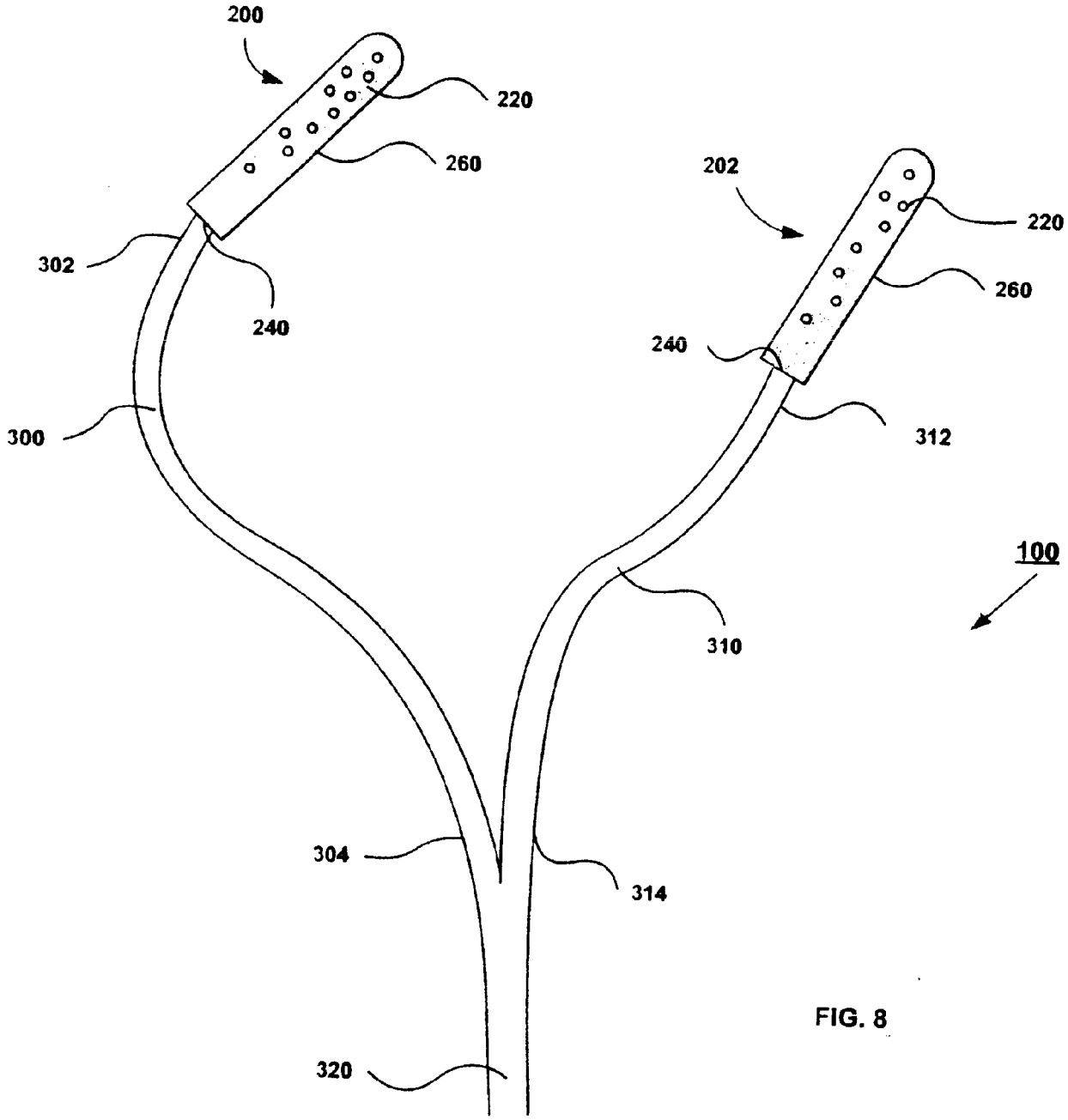


FIG. 8

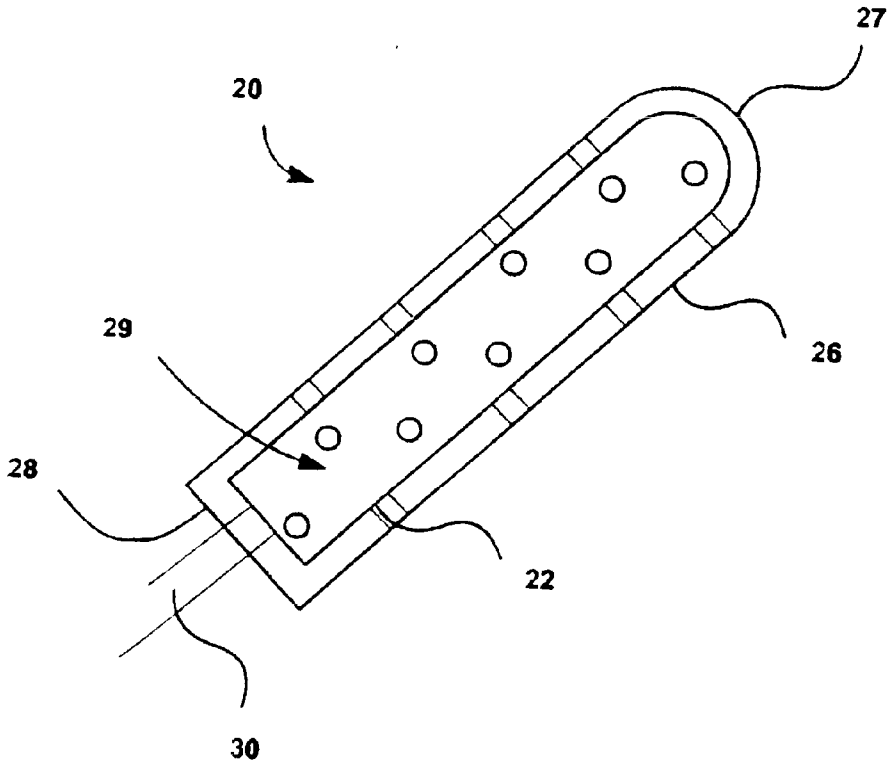


FIG. 9

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

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"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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		GB0208719D0	29 May 2002 (29-05-2002)
		GB2376895A	31 December 2002 (31-12-2002)
		US2004197732A1	07 October 2004 (07-10-2004)
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		US7261560B2	28 August 2007 (28-08-2007)
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		AU2007335842A1	26 June 2008 (26-06-2008)
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		EP2094184A2	02 September 2009 (02-09-2009)
		JP2010512821T	30 April 2010 (30-04-2010)
		JP2010512824T	30 April 2010 (30-04-2010)
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		MX2009006072A	16 June 2009 (16-06-2009)
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		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)

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L9	73	(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-$ or US-20030134253-$ or US-20140087328-$ or US-20160038348-$ or US-20140349249-$).did. or (US-3090122-$ 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-5890899-$).did. or (US-6575746-$ or US-D495799-$ 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-8556872-$ or US-5080587-$ or US-D360685-$ or US-9358086-$ or US-D615203-$ or US-5762496-$ or US-5460626-$ or US-6068477-$ or US-2482116-$ or US-6241658-$ or US-6716029-$).did. or (US-8740788-$).did. or (US-2937445-$ or US-2250285-$ or US-1471207-$ or US-3101544-$ or US-3101543-$).did.	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/12/26 09:47
L10	2	l9 and (tube with (rectangle or rectangular))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2017/12/26 09:47
L11	0	l9 and (tubular with (rectangle or rectangular))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2017/12/26 09:48
L12	14	l9 and (cross$1section$2 and (rectangle or rectangular))	US-PGPUB; USPAT; USOCR; FPRS;	ADJ	ON	2017/12/26 09:48

			EPO; JPO			
L13	25	("0950109" | "1222267" | "3084440" | "3101544" | "3758950" | "3807401" | "3864831" | "4017975" | "4068664" | "4158916" | "4521185").PN. OR ("5080587").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/12/26 10:18
L14	12	("2696047" | "3101543" | "3101544" | "3758950" | "3864831" | "4017975" | "D258531").PN. OR ("D360685").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/12/26 10:22
L15	17	("1698331" | "3373492").PN. OR ("3864831").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/12/26 10:24
L16	5	("1471207").URPN.	USPAT	ADJ	ON	2017/12/26 10:28
L17	32	("1122086" | "2672143" | "3722101").PN. OR ("3924333").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/12/26 10:35
L18	2	("20130095450").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2017/12/26 10:47
L19	1	(13/648440).APP.	USPAT; USOCR	ADJ	ON	2017/12/26 10:48
L20	59	("0683076" | "0759874" | "0950269" | "0951130" | "1012613" | "1202264" | "1374430" | "1401646" | "1501010" | "1891690" | "1930196" | "20040122352" | "20080091146" | "20120237894" | "2286462" | "2483851" | "2492384" | "2672143" | "2701916" | "2873528" | "3049806" | "3155097" | "3376868" | "3461863" | "3631598" | "4053984" | "4325695" | "4417874" | "4643720" | "5211639" | "5322521" | "5873718" | "5931673" | "5941873" | "6988893" | "7141047" | "8464709" | "D258531").PN. OR ("8585403").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/12/26 10:48
L21	0	(13/388800).APP.	USPAT; USOCR	ADJ	ON	2017/12/26 10:52
L22	10	("20040197732" | "7335023" | "3101543" | "20060008764" | "4204328" | "3124879" | "2507938" | "7261560" | "3742607" | "4966551").PN.	US-PGPUB; USPAT	ADJ	ON	2017/12/26 10:53
L23	2	maycher.in. and (dental)	US-PGPUB; USPAT	ADJ	ON	2017/12/26 10:58
L24	11	maycher.in. and (dental)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2017/12/26 10:58
L25	1	("20030134253").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2017/12/26 11:38
L26	96	(US-20080053434-$ or US-20080166684-	US-PGPUB;	ADJ	ON	2017/12/26

		$ or US-20080318183-$ or US-20090123886-$ or US-20110311942-$ or US-20060063129-$ or US-20090274991-$ or US-20010008752-$ or US-20140162209-$ or US-20140212841-$ or US-20030134253-$ or US-20140087328-$ or US-20160038348-$ or US-20140349249-$ or US-20130095450-$ or US-20040122352-$ or US-20120237894-$ or US-20060008764-$).did. or (US-3090122-$ 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-5890899-$).did. or (US-6575746-$ or US-D495799-$ 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-8556872-$ or US-5080587-$ or US-D360685-$ or US-9358086-$ or US-D615203-$ or US-5762496-$ or US-5460626-$ or US-6068477-$ or US-2482116-$ or US-6241658-$ or US-6716029-$).did. or (US-8740788-$ or US-3758950-$ or US-3864831-$ or US-5425637-$ or US-5441410-$ or US-2696047-$ or US-3101544-$ or US-D258531-$ or US-D261677-$ or US-4975057-$ or US-5009595-$ or US-5827061-$ or US-1891690-$ or US-2701916-$ or US-4417874-$ or US-5931673-$ or US-5941873-$ or US-6988893-$ or US-2507938-$ or US-3101543-$).did. or (US-2937445-$ or US-2250285-$ or US-1471207-$ or US-3101544-$ or US-3101543-$).did.	USPAT; USOCR			11:52
L27	8	l26 and trap	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2017/12/26 11:53
L28	12	(("4083115") or ("1471207")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2017/12/26 12:58
S96	1	("20030134253").PN.	US-PGPUB; USPAT; USOCR; FPRS;	OR	OFF	2017/12/20 15:33

			EPO; JPO			
S97	25	("1986751" | "3090122" | "3148449" | "3426430" | "3631598" | "3777756").PN. OR ("4024642").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/12/20 15:37
S98	3417	A61C17/04,0208,043.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2017/12/20 15:38
S99	535	A61C17/04,0208,043.cpc. and (tongue or cheek)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2017/12/20 15:38
S100	132	A61C17/04,0208,043.cpc. and (tongue or cheek) and (suction or suck$3) and mouth and (hollow)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2017/12/20 15:39
S101	72	A61C17/04,0208,043.cpc. and (tongue or cheek) and (suction or suck$3) and mouth and (hollow) and edge	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2017/12/20 15:40
S102	43	("0674650" | "2482116" | "3090122").PN. OR ("3768477").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/12/20 15:46

EAST Search History (Interference)

<This search history is empty>

12/26/2017 1:36:13 PM
C:\Users\hmai1\Documents\EAST\Workspaces\14228046.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14228046	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	11/03/2015	05/31/2016	11/01/2016	05/30/2017	12/26/2017				
	1	✓	✓	✓	-	-				
	2	✓	✓	✓	✓	✓				
	3	✓	✓	✓	✓	✓				
	4	✓	✓	✓	✓	✓				
	5	✓	✓	✓	✓	✓				
	6	✓	✓	✓	✓	✓				
	7	✓	✓	✓	✓	✓				
	8	✓	✓	✓	✓	✓				
	9	✓	✓	✓	✓	✓				
	10	✓	✓	✓	✓	✓				
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	12	✓	✓	✓	✓	✓				
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	19	✓	✓	✓	✓	✓				
	20	✓	✓	✓	✓	✓				
	21			✓	✓	✓				
	22			✓	✓	✓				

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	14/228,046
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COA

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-				
		US-				
		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

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.

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

Electronic Acknowledgement Receipt

EFS ID:	31783872
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	14-FEB-2018
Filing Date:	27-MAR-2014
Time Stamp:	12:24:00
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	Transmittal Letter	INCEP-001COA_IDS_Statement_2-14-18.pdf	19431 fb23e0abda7a14849f384d64894b8d708f1c0a83	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COA_IDS_1449_2-14-18.pdf	44875 5b79067915a6dbf261be606e4291bb5844f083f5	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	64306	

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.: 14/228,046 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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

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

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-001COA	14/228,046	March 27, 2014
First Named Inventor:	**Title:**	
THIEN NGUYEN	INTRAORAL DEVICE WITH MESH	

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/	03/16/2018
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.

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Thien Nguyen et al.	Examiner:	Hao D. Mai
Serial No.:	14/228,046	Group Art No.:	3732
Filed:	March 27, 2014	Conf. No.:	7700
Title:	INTRAORAL DEVICE WITH MESH	Dkt. No.:	INCEP- 001COA

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

AMENDMENT

In response to the Final Office Action mailed January 16, 2018 (*Office Action)*, 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 7 of this paper.

IN THE CLAIMS

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

1. (cancelled)

2. (currently amended) The dental mouthpiece of claim 21, wherein the perforations on the ~~side~~ superior and inferior walls are spaced to comprise a mesh.

3. (previously presented) The dental mouthpiece of claim 21, wherein the anterior wall further comprises a plurality of perforations.

4. (original) The dental mouthpiece of claim 3, wherein the perforations on the anterior wall are spaced to comprise a mesh.

5. (previously presented) The dental mouthpiece of claim 21, wherein the posterior wall further comprises one or more perforations.

6. (original) The dental mouthpiece of claim 5, wherein the perforations on the posterior wall are spaced to comprise a mesh.

7. (previously presented) The dental mouthpiece of claim 21, wherein the opening from the anterior wall to the pocket includes a slit along a longitudinal axis of the main body.

8. (previously presented) The dental mouthpiece of claim 21, wherein suction provided at a suction connector within the interior of the pocket provides suction of fluids through the perforations in the side wall into the interior of the pocket towards the suction connector.

9. (previously presented) The dental mouthpiece of claim 21 further comprising a bridge structure protruding from an interior surface of the posterior wall and unattached to the anterior wall, the protruding bridge structure comprising a plurality of protrusions collectively providing spaced contact points that keep the anterior wall separated from the posterior wall during suction.

10. (previously presented) The dental mouthpiece of claim 9, wherein suction provided at the suction connector within the interior of the pocket draws fluids through spaces between the protrusions of the bridge structure towards the suction connector.

11. (previously presented) The dental mouthpiece of claim 21, further comprising the cheek retractor portion, the cheek retractor having a surface that applies pressure when the dental mouthpiece is bent, wherein the pressure is based on resilience of a material from which the cheek retractor is formed.

12. (previously presented) The dental mouthpiece of claim 11, wherein the cheek retractor portion comprises an extension of the pocket, wherein a side wall of the extension comprises one or more perforations.

13. (previously presented) The dental mouthpiece of claim 11, further comprising a stability bar protruding from an interior surface of the posterior wall along the longitudinal axis of the main body and extending through at least part of the cheek retractor, wherein a thickness of the stability bar corresponds to resilience by which the cheek retractor portion applies pressure during bending.

14. (previously presented) The dental mouthpiece of claim 21, wherein the main body portion is formed by injection-molding as one piece.

15. (previously presented) The dental mouthpiece of claim 21, wherein a material from which the main body is formed is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

16. (original) The dental mouthpiece of claim 21, wherein the anterior wall and the posterior wall have different thicknesses.

17. (cancelled)

18. (cancelled)

19. (currently amended) The dental mouthpiece of claim 21, wherein [[the]] a bite block portion and [[the]] a strap portion are injection-molded in one piece.

20. (currently amended) The dental mouthpiece of claim 21, wherein [[the]] a bite block portion comprises an opening corresponding to a plug connected to the main body.

21. (previously presented) A dental mouthpiece comprising:
a main body portion, configured as a pocket having an interior defined by:
an anterior wall having a shape defined by an exterior edge, wherein the anterior wall includes an opening to the interior of the pocket,
a posterior wall having a shape corresponding to the defined shape of the anterior wall, wherein an exterior edge of the posterior wall shape corresponds to the exterior edge of the anterior wall,
a superior wall connecting the exterior edge of the anterior wall across a superior wall span to the corresponding exterior edge of the posterior wall on a first side, wherein at least part of the superior wall comprises a plurality of perforations into the

interior of the pocket, and wherein the superior wall span between the anterior wall and the posterior wall is less than a width of the anterior wall, and

an inferior wall connecting the exterior edge of the anterior wall across an inferior wall span to the corresponding exterior edge of the posterior wall on a second side, wherein at least part of the inferior wall comprises another plurality of perforations into the interior of the pocket, and wherein the inferior wall span between the anterior and the posterior wall is less than the width of the anterior wall.

22. (currently amended) A dental mouthpiece comprising:

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

an anterior wall having a shape defined by a smooth exterior edge, wherein the anterior wall includes an opening to the interior of the pocket,

a posterior wall having a shape corresponding to the defined shape of the anterior wall, wherein a smooth exterior edge of the posterior wall shape corresponds to the smooth exterior edge of the anterior wall,

a superior wall connecting the smooth exterior edge of the anterior wall across a superior wall span to the corresponding smooth exterior edge of the posterior wall on a first side, wherein at least part of the superior wall comprises a plurality of perforations, wherein the superior wall is perpendicular to the anterior wall and the posterior wall, and wherein the superior wall span is less than a width of the anterior wall,

an inferior wall connecting the exterior edge of the anterior wall across an inferior wall span to the corresponding exterior edge of the posterior wall on a second side, wherein at least part of the inferior wall comprises another plurality of perforations, wherein the inferior wall is perpendicular to the anterior wall and the posterior wall, and wherein the inferior wall span is less than the width of the anterior wall ~~width~~,

a suction connector portion connected to one end of the main body portion, the suction connector configured to connect a vacuum source with the interior of the pocket within the main body portion, and

a connection configured to connect the main body portion at a second end to a cheek retractor, wherein the second end is opposite to the one end of the main body portion.

REMARKS

Status of the Claims

The Applicants have amended claims 2, 19-20, and 22. No new matter has been added. Claims 2-16 and 19-22 are currently pending. In view of the following remarks, Applicants respectfully submit that the application is in condition for allowance.

Double Patenting

The Office rejected claims 2-16 and 19-22 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-35 of Patent No. 8,911,232. *Office Action*, pg. 2. In response, the Applicant hereby submits a Terminal Disclaimer with the requisite fee disclaiming the terminal portion of any patent granted on the present application which would extend beyond the expiration date of the granted Patent No. 8,911,232. The filing of a Terminal Disclaimer is not an admission as to the propriety of this rejection, but is being submitted merely as a means of expediting the prosecution of the present application.

Withdrawal of the rejection and allowance of claims 2-16 and 19-22 are respectfully requested.

Rejections Under 35 U.S.C. §112

Claims 2, 19-20 and 22 were 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*, pg. 3.

Claim 2 has been amended to recite: "wherein the perforations on the **superior and inferior walls**." (emphasis added).

Claim 19 has been amended to recite: "wherein **a bite block portion** and **a strap portion.**" (emphasis added).

Claim 20 has been amended to recite: "wherein **a bite block portion**." (emphasis added).
Claim 22 has been amended to recite: "the inferior wall span is less than the **width of the anterior wall**." (emphasis added).

Withdrawal of the rejection and allowance of claims 8 and 22 are respectfully requested.

Rejections under 35 U.S.C. §103

Claims 2-8, 11-14, 16, 19-20 and 21-22 were rejected under 35 U.S.C. 103(a) as being unpatentable over National Publication No. WO2011/014952 to Maycher et al. ("*Maycher*") in view of U.S. Publication No. 2009/0274991 to Black et al. ("*Black*"). *Office Action*, pg. 4. Applicants respectfully disagree.

Applicant submits that the combination of Maycher and Black is improper because Maycher teaches away from adding components or adjusting dimensions which would render Maycher's device larger than necessary, as the components and dimensions of Black would do. It is improper to combine references where the references teach away from their combination. MPEP 2145 (D)(2) citing *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). Macher teaches an intraoral device having an intraoral tip to remove fluids from a patent's mouth during a dental procedure. *Macher*, Abstract. Macher's intraoral device sought to provide a solution to patient discomfort during the dental procedure caused by "the insertion of a large tube" of conventional devices. *Id.* at para. [0003]. The large tube of conventional devices were also "partially-rigid", which could cause "tissue abrasions and bruising." *Id.* As such, Macher emphasizes the small nature of its intraoral tip, specifying that the intraoral tip "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." *Id.* at para. [0029]. Furthermore, Macher describes the benefits of the intraoral tip where "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." *Id.* at para. [0044], (emphasis added). As such, the purpose of Macher's intraoral tip is to be small and unobtrusive while removing fluids in the patient's mouth.

Black teaches a tongue shield aspirator larger in dimension to the intraoral tip of Macher, as the purpose of Black's aspirator is to both remove fluids and provide a block against the patient's tongue and cheek. As such, Black's aspirator needs to necessarily span the width and height of the patient's mouth. Combining the dimensions of Black's aspirator and Macher's intraoral tip is contrary to both Black and Macher, as Macher teaches a small intraoral device to remove fluids and Black teaches a large device to block a patent's tongue and cheek while also removing fluids. Thus, the combination of Macher and Black is improper as Macher teaches away from the combination of Macher's intraoral tip and Black's device.

For at least these reasons, claims 2-8, 11-14, 16, 19-20 and 21-22 are not obvious under 35 U.S.C. 103(a) by *Maycher* in view of *Black*.

Independent claim 22 is additionally not obvious under 35 U.S.C. 103(a) by *Maycher* in view of *Black* because Maycher teaches away from the combination of components as claimed in claim 22. Independent claim 22 recites, *inter alia*,

> **a main body portion** configured as a pocket having an interior defined by: **an anterior wall** having a shape defined by a smooth exterior edge . . . **a posterior wall** having a shape corresponding to the defined shape of the anterior wall . . . **a superior wall** connecting the smooth exterior edge of the anterior wall

> across a superior wall span to the corresponding smooth exterior edge of the posterior wall on a first side . . . **an inferior wall** connecting the exterior edge of the anterior wall across an inferior wall span to the corresponding exterior edge of the posterior wall on a second side . . . **a connection** configured to connect the main body portion **at a second end to a cheek retractor**, wherein the second end is opposite to the one end of the main body portion.

Applicant submits that the combination of Maycher and Black is also improper because the combination of "a connection configured to connect the main body portion **at a second end to a cheek retractor**" teaches away from the intraoral tip of Maycher. As previously described and argued above, the purpose of Macher's intraoral tip is to be small and unobtrusive while removing fluids in the patient's mouth. Adding the cheek retractor portion of Black, as suggested by the Examiner, to the intraoral tip of Macher will result in a larger and obtrusive intraoral tip. The cheek retractor portion is generally larger than the intraoral tip of Maycher, for the purpose of retracting the patient's cheek when inserted into the patient's mouth. *Black*, at para. [0088]. The cheek retractor portion alone and in combination with the intraoral tip of Macher is contrary to a "small size and streamlined shape[d]" intraoral tip. Thus, the combination of Macher and Black is improper as Macher teaches away from the combination of Macher's intraoral tip and Black's cheek retractor portion.

For at least these reasons, claim 22 is not obvious under 35 U.S.C. 103(a) by *Maycher* in view of *Black*. Thus, withdrawal of the rejection of claim 22 is respectfully requested.

Dependent Claims 9-10

Claims 9-10 were rejected under 35 U.S.C. 103(a) as being unpatentable over Maycher in view of Black, as applied to claim 21, and further in view of U.S. Patent No. 1,471,207 to Riddle (*"Riddle"*). *Office Action*, pg. 7. Applicants respectfully disagree. Because claims 9-10 dependent

from independent claim 21, claims 9-10 are allowable for at least the same reasons as claim 21. Withdrawal of the rejection is respectfully requested.

Dependent Claim 15

Claim 15 was rejected under 35 U.S.C. 103(a) as being unpatentable over Maycher in view of Black, and further in view of U.S. Patent No. 5,890,899 to Sclafani (*"Sclafani"). Office Action*, pg. 8. Applicants respectfully disagree. Because claim 15 depends from independent claim 21, claim 15 is allowable for at least the same reasons as claim 21. Withdrawal of the rejection is 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.

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' 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.

The Commissioner is hereby authorized to withdraw any additional fees that may be required or credit any overpayment to Deposit Account 50-1662, referencing the docket number above.

03/16/2018

Respectfully submitted,
POLSINELLI PC

/Stephanie T. Vu/

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PTO/SB/26 (08-08)
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TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	Docket Number (Optional)

In re Application of: Incept, Inc.

Application No.: 14/228,046

Filed: March 27, 2017

For: INTRAORAL DEVICE WITH MESH

The owner*, Incept, Inc., of 100 percent interest 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 **prior patent** No. 8,911,232 as the term of said prior patent is defined in 35 U.S.C. 154 and 173, and 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 as defined in 35 U.S.C. 154 and 173 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.

Check either box 1 or 2 below, if appropriate.

1. ☐ For submissions on behalf of a business/organization (e.g., corporation, partnership, university, government agency, etc.), the undersigned is empowered to act on behalf of the business/organization.

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.

2. ☑ The undersigned is an attorney or agent of record. Reg. No. 73,063

/Stephanie T Vu/ — Signature
03/16/2018 — Date

Stephanie T. Vu — Typed or printed name

Telephone Number

☑ Terminal disclaimer fee under 37 CFR 1.20(d) included.

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Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

This collection of information is required by 37 CFR 1.321. 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 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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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:

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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.
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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:	14228046
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH MESH
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Stephanie Thien Vu
Attorney Docket Number:	INCEP-001COA

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($)
Miscellaneous:				
STATUTORY OR TERMINAL DISCLAIMER	2814	1	160	160
		Total in USD ($)		**160**

Electronic Acknowledgement Receipt

EFS ID:	32081150
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Stephanie Thien Vu
Filer Authorized By:	
Attorney Docket Number:	INCEP-001COA
Receipt Date:	16-MAR-2018
Filing Date:	27-MAR-2014
Time Stamp:	17:37:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$160
RAM confirmation Number	031918INTEFSW00004450501662
Deposit Account	501662
Authorized User	Gregory Durbin

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	After Final Consideration Program Request	AFCP_INCEP-001COA_14-228046.pdf	238245 c73d61ccae193fb76d03e44878c63b655f782b70	no	2
Warnings:					
Information:					
2		Amendment_and_Response_to_FOA_14-228046.pdf	232961 131d62dc167a6330ca1f84b7e0275343fdc570fd	yes	12

Multipart Description/PDF files in .zip description

Document Description	Start	End
Response After Final Action	1	1
Claims	2	6
Applicant Arguments/Remarks Made in an Amendment	7	12

Warnings:					
Information:					
3	Terminal Disclaimer Filed	Terminal_Disclaimer_14-228046.pdf	1614149 e588133b77abe250028687b37a016f814c91911c	no	2
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	30032 be7ab720de095be2073eb8cb8e322b0fa8c0ddca	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2115387		

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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.

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New International Application Filed with the USPTO as a Receiving Office

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PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/228,046	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	03/16/2018	(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))	* 19	Minus	** 20	= 0	X $50 =	0
	Independent (37 CFR 1.16(h))	* 2	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.

SLIE
ROSALIND BALL

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.

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	14/228,046	NGUYEN ET AL.	

Document Code - DISQ	Internal Document – DO NOT MAIL

TERMINAL DISCLAIMER	☐ APPROVED	☒ DISAPPROVED
Date Filed : 16 March, 2018	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:

/CRYSTAL QUEEN/

Technology Center: PLRC

Telephone: _____

The terminal disclaimer identifies a party who is not the applicant (only for applications filed on or after September 16, 2012; See FP 14.26.10):

Below is what needs to be done to correct the defects:

For cases filed on/after 9/16/12, 37 CFR 1.321 specifies that the applicant can disclaim, and the terminal disclaimer must specify the extent of the applicant's ownership.

A request under 37 CFR 1.46(c) to change the applicant needs to be filed, which is (1) a request, signed by a 1.33(b) party, (2) a corrected ADS (37 CFR 1.76(c)) that identifies the "new" applicant in the applicant information, and is underlined since it is new, and (3) a 3.73(c) statement showing chain of title to the new applicant. Along with the § 1.46(c) request we need a POA that gives power to the attorney who is signing the TD, along with another copy of the TD, unless they file a TD that is signed by the applicant.

The TD must be re-filed; no new fees are due.

PTO/AIA/26 (04-14)
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TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	Docket Number (Optional)

In re Application of: Dryshield, LLC

Application No.: 14/228,046

Filed: March 27, 2014

For: INTRAORAL DEVICE WITH MESH

The applicant, Dryshield, LLC, owner of 100 percent interest 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** No. 8,911,232 as the term of said **prior patent** is presently shortened by any terminal disclaimer. The applicant 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 applicant 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:

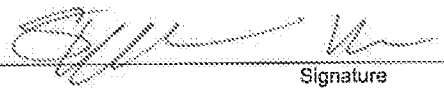
expires for failure to pay a maintenance fee;
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is found invalid by a court of competent jurisdiction;
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has all claims canceled by a reexamination certificate;
is reissued; or
is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

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1. ☐ The undersigned is the applicant. If the applicant is an assignee, the undersigned is authorized to act on behalf of the assignee.

I hereby acknowledge that any willful false statements made are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

2. ☑ The undersigned is an attorney or agent of record. Reg. No. 73063



Signature — 4/16/18 Date

Stephanie T. Vu
Typed or printed name

Title — (303) 572-9300 Telephone Number

☑ Terminal disclaimer fee under 37 CFR 1.20(d) included.

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.

This collection of information is required by 37 CFR 1.321. 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 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.

Electronic Patent Application Fee Transmittal

Application Number:	14228046
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH MESH
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Stephanie Thien Vu/Kristine Goodman
Attorney Docket Number:	INCEP-001COA

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($)
Miscellaneous:				
STATUTORY OR TERMINAL DISCLAIMER	2814	1	160	160
		Total in USD ($)		**160**

Electronic Acknowledgement Receipt

EFS ID:	32351444
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	16-APR-2018
Filing Date:	27-MAR-2014
Time Stamp:	16:45:14
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	Terminal Disclaimer Filed	TerminalDisclaimer.pdf	99898 22e4046725768e4f2ff7dcc9cf93e5fc1df5533b	no	1

Warnings:

Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30269 c32aa45ffb72c660194bd6cc3b452c0a9007f4cc	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	130167	

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.

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	14/228,046	NGUYEN ET AL.	

Document Code - DISQ	Internal Document – DO NOT MAIL

TERMINAL DISCLAIMER	☒ APPROVED	☐ DISAPPROVED
Date Filed : 4/16/18	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:
jean proctor

U.S. Patent and Trademark Office

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	14/228,046	NGUYEN ET AL.	

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jean proctor

U.S. Patent and Trademark Office

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.
14/228,046	03/27/2014	Thien Nguyen	INCEP-001COA	7700

138718 7590 06/06/2018

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

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3732	

NOTIFICATION DATE	DELIVERY MODE
06/06/2018	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

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	14/228,046	NGUYEN ET AL.	
	Examiner	Art Unit	
	HAO D. MAI	3732	

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

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

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

Date of Interview: *23 May 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: *19 and 21*.

Identification of prior art discussed: *Maycher, Black*.

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...)

The Terminal Disclaimer filed 04/16/2018 has been approved and recorded.
At least the proposed amendment in claim 19 would raise new ground(s) of rejection under 112(b) for ommission of structural relationship between a bite block portion and a strap portion as connected to the dental mouth piece. Applicant's arguments have been fully considered but are not persuasive. Applicant argues that the combination of Maycher and Black is improper because Maycher teaches away from adding components or adjusting dimensions which would render Maycher's device larger than necessary. Such arguments are not persuasive because the combination is merely for modification of the shape of Maycher to have a posterior wall being less than a width of the anterior wall as taught by Black. Note that Maycher also implicitly teaches such shape in Fig. 6. The combination does not seek to make Maycher larger as alleged. Note that both Maycher's and Black's devices are for fitted inside a patient's mouth .

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.

☐ Attachment

/HAO D MAI/ Examiner, Art Unit 3732	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 14/228,046	**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 16 March 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): 112(b).

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-2323, PTO-413.

STATUS OF CLAIMS

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

    Claim(s) allowed: .
    Claim(s) objected to: .
    Claim(s) rejected: 2-16 and 19-22.
    Claim(s) withdrawn from consideration: .

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

Continuation of 3. NOTE: At least the proposed amendments to claim 19 raise new issue(s) which does not reduce or simplify the issues for appeal. For example, the proposed amendment would raise new ground(s) of rejection under 112(b) for ommision of structural relationship between a bite block portion and a strap portion as connected to the dental mouth piece. Applicant argues that the combination of Maycher and Black is improper because Maycher teaches away from adding components or adjusting dimensions which would render Maycher's device larger than necessary. Such arguments are not persuasive because the combination is merely for modification of the shape of Maycher to have a posterior wall being less than a width of the anterior wall as taught by Black. The combination does not seek to make Maycher larger as alleged. Note that both Maycher's and Black's devices are for fitted inside a patient's mouth.

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	14/228,046	NGUYEN ET AL.	
	Examiner	Art Unit	
	HAO D. MAI	3732	

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

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

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

Date of Interview: *23 May 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: *19 and 21*.

Identification of prior art discussed: *Maycher, Black*.

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...)

The Terminal Disclaimer filed 04/16/2018 has been approved and recorded.
At least the proposed amendment in claim 19 would raise new ground(s) of rejection under 112(b) for ommission of structural relationship between a bite block portion and a strap portion as connected to the dental mouth piece. Applicant's arguments have been fully considered but are not persuasive. Applicant argues that the combination of Maycher and Black is improper because Maycher teaches away from adding components or adjusting dimensions which would render Maycher's device larger than necessary. Such arguments are not persuasive because the combination is merely for modification of the shape of Maycher to have a posterior wall being less than a width of the anterior wall as taught by Black. Note that Maycher also implicitly teaches such shape in Fig. 6. The combination does not seek to make Maycher larger as alleged. Note that both Maycher's and Black's devices are for fitted inside a patient's mouth .

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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	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

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Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

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- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
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It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

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2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

DO NOT ENTER: /HDM/
05/24/2018

Patent
Atty Dkt No. 084892-514253
Filed Via EFS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Thien Nguyen et al.	Examiner:	Hao D. Mai
Serial No.:	14/228,046	Group Art No.:	3732
Filed:	March 27, 2014	Conf. No.:	7700
Title:	INTRAORAL DEVICE WITH MESH	Dkt. No.:	INCEP- 001COA

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

AMENDMENT

In response to the Final Office Action mailed January 16, 2018 (*Office Action*), 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 7 of this paper.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

AFCP 2.0 Decision	Application No.	Applicant(s)
	14/228,046	NGUYEN ET AL.
	Examiner	Art Unit
	HAO D. MAI	3732

This is in response to the After Final Consideration Pilot request filed 16 March 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.

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	14/228,046
Filing Date	March 27, 2014
First Named Inventor	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COA

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 _____

   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	2018-06-18
Name (Print/Type)	Stephanie T. Vu	Registration No.	73063

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			
Name (Print/Type)		Date	

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.

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.

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.

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:	14228046
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH MESH
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Stephanie Thien Vu/Kristine Goodman
Attorney Docket Number:	INCEP-001COA

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($)
Extension - 2 months with $0 paid	2252	1	300	300
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	2820	1	950	950
		Total in USD ($)		**1250**

Electronic Acknowledgement Receipt

EFS ID:	32923766
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	18-JUN-2018
Filing Date:	27-MAR-2014
Time Stamp:	14:19:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$1250
RAM confirmation Number	061918INTEFSW00000445501662
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		ResponseToAdvisoryAction.pdf	210906 24372a10a7bd5d30536960ad712924e8575719c5	yes	11

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment Submitted/Entered with Filing of CPA/RCE	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	11

Warnings:					
Information:					
2	Request for Continued Examination (RCE)	RCE.pdf	176475 6a8859ed5e6cc3bcc34d587d11a4b4f60b1affcb	no	3
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	32617 dccbfa0cd85b04d06e4d5c2aad8b9cb28c3dd008	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	419998		

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(s):	Thien Nguyen et al.	Examiner:	Hao D. Mai
Serial No.:	14/228,046	Group Art No.:	3732
Filed:	March 27, 2014	Conf. No.:	7700
Title:	Intraoral Device with Mesh	Dkt. No.:	INCEP- 001COA

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

AMENDMENT AND
REQUEST FOR CONTINUED EXAMINATION

In response to the Final Office Action mailed January 16, 2018 (*Office Action)*, and the Advisory Action dated June 06, 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 6 of this paper.

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

1. (cancelled)

2. (currently amended) The dental mouthpiece of claim 21, wherein the first set and the second set of perforations on the superior and inferior walls are spaced to comprise a mesh.

3. (currently amended) The dental mouthpiece of claim 21, wherein the anterior wall further comprises a ~~plurality~~ fourth set of perforations.

4. (currently amended) The dental mouthpiece of claim 3, wherein the fourth set of perforations on the anterior wall are spaced to comprise a mesh.

5. (previously presented) The dental mouthpiece of claim 21, wherein the posterior wall further comprises one or more perforations.

6. (original) The dental mouthpiece of claim 5, wherein the perforations on the posterior wall are spaced to comprise a mesh.

7. (previously presented) The dental mouthpiece of claim 21, wherein the opening from the anterior wall to the pocket includes a slit along a longitudinal axis of the main body.

8. (previously presented) The dental mouthpiece of claim 21, wherein suction provided at a suction connector within the interior of the pocket provides suction of fluids through the perforations in the side wall into the interior of the pocket towards the suction connector.

9. (previously presented) The dental mouthpiece of claim 21 further comprising a bridge structure protruding from an interior surface of the posterior wall and unattached to the

anterior wall, the protruding bridge structure comprising a plurality of protrusions collectively providing spaced contact points that keep the anterior wall separated from the posterior wall during suction.

10. (previously presented) The dental mouthpiece of claim 9, wherein suction provided at the suction connector within the interior of the pocket draws fluids through spaces between the protrusions of the bridge structure towards the suction connector.

11. (previously presented) The dental mouthpiece of claim 21, further comprising the cheek retractor portion, the cheek retractor having a surface that applies pressure when the dental mouthpiece is bent, wherein the pressure is based on resilience of a material from which the cheek retractor is formed.

12. (previously presented) The dental mouthpiece of claim 11, wherein the cheek retractor portion comprises an extension of the pocket, wherein a side wall of the extension comprises one or more perforations.

13. (previously presented) The dental mouthpiece of claim 11, further comprising a stability bar protruding from an interior surface of the posterior wall along the longitudinal axis of the main body and extending through at least part of the cheek retractor, wherein a thickness of the stability bar corresponds to resilience by which the cheek retractor portion applies pressure during bending.

14. (previously presented) The dental mouthpiece of claim 21, wherein the main body portion is formed by injection-molding as one piece.

15. (previously presented) The dental mouthpiece of claim 21, wherein a material from which the main body is formed is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

16. (original) The dental mouthpiece of claim 21, wherein the anterior wall and the posterior wall have different thicknesses.

17. (cancelled)

18. (cancelled)

19. (currently amended) The dental mouthpiece of claim 21, <u>further comprising a detachable mouth prop, the detachable mouth prop comprising a bite block portion and a strap portion,</u> wherein [[a]] <u>the</u> bite block portion and [[a]] <u>the</u> strap portion are injection-molded in one piece.

20. (previously presented) The dental mouthpiece of claim 21, wherein a bite block portion comprises an opening corresponding to a plug connected to the main body.

21. (currently amended) A dental mouthpiece comprising:
a main body portion, configured as a pocket having an interior defined by:

an anterior wall having a shape defined by an exterior edge, wherein the anterior wall includes an opening to the interior of the pocket,

a posterior wall having a shape corresponding to the defined shape of the anterior wall, wherein an exterior edge of the posterior wall shape corresponds to the exterior edge of the anterior wall,

a superior wall connecting the exterior edge of the anterior wall across a superior wall span to the corresponding exterior edge of the posterior wall on a first side, wherein at least part of the superior wall comprises a ~~plurality~~ <u>first set</u> of perforations into the

interior of the pocket, and wherein the superior wall span between the anterior wall and the posterior wall is less than a width of the anterior wall, [[and]]

an inferior wall connecting the exterior edge of the anterior wall across an inferior wall span to the corresponding exterior edge of the posterior wall on a second side, wherein at least part of the inferior wall comprises ~~another plurality~~ a second set of perforations into the interior of the pocket, and wherein the inferior wall span between the anterior and the posterior wall is less than the width of the anterior wall; and

a rectangular portion configured to connect to the main body at an end and to connect a cheek retractor portion at another end, wherein the pocket extends into the rectangular portion, and wherein a wall of the rectangular portion comprises a third set of perforations.

22. (currently amended) A dental mouthpiece comprising:

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

an anterior wall having a shape defined by a smooth exterior edge, wherein the anterior wall includes an opening to the interior of the pocket,

a posterior wall having a shape corresponding to the defined shape of the anterior wall, wherein a smooth exterior edge of the posterior wall shape corresponds to the smooth exterior edge of the anterior wall,

a superior wall connecting the smooth exterior edge of the anterior wall across a superior wall span to the corresponding smooth exterior edge of the posterior wall on a first side, wherein at least part of the superior wall comprises a ~~plurality~~ first set of perforations, wherein the superior wall is perpendicular to the anterior wall and the posterior wall, and wherein the superior wall span is less than a width of the anterior wall,

an inferior wall connecting the exterior edge of the anterior wall across an inferior wall span to the corresponding exterior edge of the posterior wall on a second side, wherein at least part of the inferior wall comprises ~~another plurality~~ a second set of perforations, wherein the inferior wall is perpendicular to the anterior wall and the

posterior wall, and wherein the inferior wall span is less than the width of the anterior wall,

a suction connector portion connected to one end of the main body portion, the suction connector configured to connect a vacuum source with the interior of the pocket within the main body portion, and

a ~~connection~~ rectangular portion configured to connect the main body portion at a second end to a cheek retractor, wherein the second end is opposite to the one end of the main body portion, wherein a wall of the rectangular portion comprises a third set of perforations.

REMARKS

Interview Summary

Applicants thank the Examiner for the interview conducted with the Applicants' representative on May 23, 2018.

Status of the Claims

The Applicants have amended claims 2-4, 19, 21, and 22. Support for the amendments can be found throughout the *Specification* and in particular, FIGS. 1A – 2E, 4, and 6A-7B and paragraphs [0038] and [0039]. No new matter has been added. As such, Claims 2, 19-20, and 22 are pending.

Rejections Under 35 U.S.C. §112

Claims 2, 19-20 and 22 were 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*, pg. 3. The Applicant has presented amendments for claims 2, 20, and 22 in the previous Response dated March 16, 2018. The Examiner has indicated in the Interview that claim 19 would raise new ground(s) of rejection under 112(b) for omissions of the structural relationships of the bite block portion and the strap portion.

Claim 19 has been amended to recite, the dental mouthpiece "further comprising a detachable mouth prop**, the detachable mouth prop comprising a bite block portion and a strap portion**, wherein the bite block portion and the strap portion."

Withdrawal of the rejection and allowance of claims 2, 19-20 and 22 are respectfully requested.

Rejections under 35 U.S.C. §103

Claims 2-8, 11-14, 16, 19-20 and 21-22 were rejected under 35 U.S.C. 103(a) as being unpatentable over National Publication No. WO2011/014952 to Maycher et al. ("*Maycher*") in view of U.S. Publication No. 2009/0274991 to Black et al. ("*Black*"). *Office Action*, pg. 4. Applicants respectfully disagree. However, to further prosecution, claims 21 and 22 have been amended and remarks are presented below.

Claim 21 has been amended to recite, "a rectangular portion configured to connect to the main body at an end and to connect a cheek retractor portion at another end, wherein the pocket extends into the rectangular portion, and wherein **a wall of the rectangular portion comprises a third set of perforations**." The rectangular portion is shown below for reference:

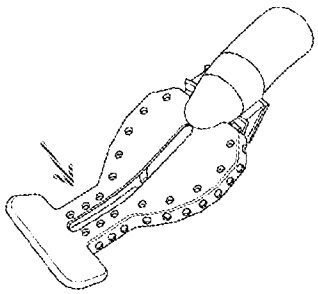


FIG. 1A

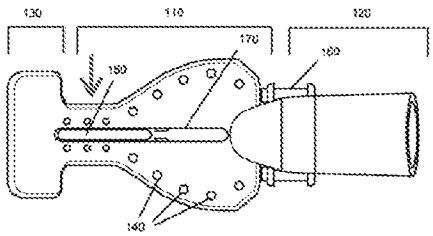


FIG. 1B

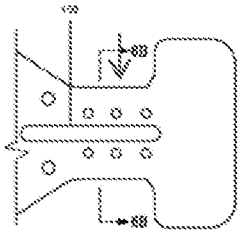


FIG. 6A

As shown above, the rectangular portion is configured to connect the main body 110 to the cheek retractor portion 130. A wall of the rectangular portion itself comprises a third set of perforations in addition to the first and second set of perforations of the superior wall and the inferior wall, respectively.

Applicants submit that *Maycher* and *Black* fail to teach a wall of a rectangular portion comprising a third set of perforations. *Maycher* teaches a dental apparatus having an intraoral

tip. *Maycher*, Abstract. *Maycher* further teaches the intraoral tip having a wall defining a cavity and a plurality of apertures. *Id.* at para. [0026]. Nowhere does *Maycher* teach a wall of the rectangular portion comprising a third set of perforations.

Black does not cure the deficiencies of *Maycher*. *Black* teaches a tongue shield aspirator for fluid removal during a dental procedure. *Black*. at Abstract. *Black* teaches flaps connected by transverse walls located between each flap. *Id.* at para. [0079] - [0080]. Nowhere does *Black* teach a wall of the rectangular portion comprising a third set of perforations. As such, neither *Black* nor *Maycher* together or separately teach the feature of a wall of the rectangular portion comprising a third set of perforations.

Independent claim 22 recites substantially the same amended features as independent claim 21 and is allowable for at least the same reasons as provided above.

For at least these reasons, claims 2-8, 11-14, 16, 19-20 and 21-22 are not obvious under 35 U.S.C. 103(a) by *Maycher* in view of *Black*. Thus, withdrawal of the rejection of claims 2-8, 11-14, 16, 19-20 and 21-22 is respectfully requested.

Dependent Claims 9-10

Claims 9-10 were rejected under 35 U.S.C. 103(a) as being unpatentable over Maycher in view of Black, as applied to claim 21, and further in view of U.S. Patent No. 1,471,207 to Riddle (*"Riddle"*). *Office Action*, pg. 7. Applicants respectfully disagree. Because claims 9-10 dependent from independent claim 21, claims 9-10 are allowable for at least the same reasons as claim 21. Withdrawal of the rejection is respectfully requested.

Dependent Claim 15

Claim 15 was rejected under 35 U.S.C. 103(a) as being unpatentable over Maycher in view of Black, and further in view of U.S. Patent No. 5,890,899 to Sclafani (*"Sclafani"*). *Office Action*, pg.

8. Applicants respectfully disagree. Because claim 15 depends from independent claim 21, claim 15 is allowable for at least the same reasons as claim 21. Withdrawal of the rejection is 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.

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 are submitting this response with a Request for Continued Examination and the corresponding fee. Applicants further petition for a 2-month extension of time and submit the corresponding fee. 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.

Applicant's undersigned representative 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.

Respectfully submitted,

June 18, 2018 **POLSINELLI LLP**

/ Stephanie T. Vu/

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PTO/SB/06 (09-11)
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/228,046	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 **06/18/2018**

	(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))	* 19	Minus	** 20	= 0	X $50 =	0
Independent (37 CFR 1.16(h))	* 2	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
LASHAWN MORGAN

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.
14/228,046	03/27/2014	Thien Nguyen	INCEP-001COA	7700

138718 7590 10/05/2018

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

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
10/05/2018	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

Office Action Summary	Application No. 14/228,046	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 *06/18/2018*.

☐ 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) *1-16 and 19-22* 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, 2-16, 19-22* 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: _____.

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 06/18/2018 has been entered.

Claim Rejections - 35 USC § 103

3. 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.

4. **Claims 2-8, 11-14, 16, 19-20 and 21-22 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable by Maycher et al. (WO 2011/014952) in view of Black et al. (2009/0274991).**

Regarding claim 21, Maycher et al. discloses a dental mouthpiece comprising a main body portion 20 configured as a pocket 29 having an interior 29 (Fig. 9; paragraphs 26-27) having a wall 26 with apertures 22 (Figs. 9; paragraphs 26-28). Maycher et al. further discloses

the body portion 20 may be rectangular (paragraph 40) in which the interior 29 would be defined by corresponding anterior and posterior walls connected at respective exterior edges thereof by a superior/side wall extending across a superior/side wall span and an inferior/side wall extending across an inferior/side wall span between the anterior and posterior walls. As shown in Fig. 9, there are openings and/or apertures 22 disposed on the anterior, posterior, and superior/side walls 26; the apertures 22 extend through the wall 26 into the interior 29 of the pocket (Fig. 9).

Maycher et al. discloses the dimension of a rectangular mouthpiece may be similar of the dimensions of the cylindrical/tubular mouthpiece (paragraph 40), failing to explicitly disclose the superior/side and inferior/side wall spans being less than a width of the anterior wall. Black et al. discloses an surgical aspirating paddle 71 (Fig. 7A) or 60 (Figs. 6A-6C) formed as a pocket with an interior and anterior and posterior wall, wherein side walls (as viewed in Fig. 6B) is less than a width of the anterior wall. It would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt Maycher's rectangular mouthpiece to have a side wall span being less than a width of the anterior wall as taught by Black et al. in order to form a low-profile mouthpiece suitable to be fitted within the mouth.

Regarding the newly recited limitation(s), Maycher fails to disclose a rectangular portion configured to connect to the main body at one end and to connect a cheek retractor portion at another end. Black et al. discloses a mouthpiece 40 having a rectangle portion 49 connecting an end of the main body 40 to a cheek retractor 40b, wherein the rectangle portion area 49 has a third set of perforations 42, 43 (Fig. 3A-3B). Note that Black et al. discloses the suction lumen and thus the channel apertures extend to the transition section 49 (paragraph 85). Black et al. also discloses having the suction channel at the the cheek retractor portion 240b may lead to loss of pressure/suction because of the channels there (Figs. 3B, paragraph 88) effectively

indicating that there are suction apertures at the rectangle portion. It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify Maycher by include a narrow rectangular narrow portion in order to connect a check retractor and form an "isthmus between the superior and lower portions" as explicitly taught by Black et al. (paragraph 121).

As to claims 2-6, Maycher et al.'s perforations 22 are shown being disposed on the anterior, posterior, and superior/side walls 26 and are spaced apart, thereby forming a mesh. As to claim 7, the opening 22 in the anterior wall is considered to be a slit along a longitudinal axis of the main body. As to claim 8, suction is provided at a suction connector 24 within the interior of the pocket to provide suction of fluids through the perforations 22 towards the suction connector (Fig. 1; paragraph 43).

As to claims 11-12, Maycher et al. fails to disclose a cheek retractor portion. Black et al. discloses a mouthpiece 240 comprising cheek retractor 240e having a surface that applies pressure when the dental mouthpiece is bent, wherein the pressure is based on resilience of a material from which the cheek retractor 240 is formed; the cheek retractor 22 comprises an extension of the pocket/lumen 241 and a side wall of the extension comprises one or more perforation/opening into lumen 241 (Figs. 4A; 87-88). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Maycher et al. by incorporating a cheek retractor as taught by Black et al. in order to provide retraction of the cheek during a procedure within the mouth. As to claims 13 and 16, Maycher et al. fails to disclose a stability bar and the anterior and posterior walls having different thicknesses. Black et al. discloses a the posterior wall may be thicker due to stiffener 347 or 447 to reinforce to the mouthpiece (Figs. 23C, 24A paragraph 127). The posterior wall portion at stiffener 347 is considered to comprise a stability bar (extra thickness) protruding from an interior surface of the

posterior wall along the longitudinal axis of the main body and entending through at least part of the cheek retractor. The anterior wall and the posterior wall have different thicknesses due to the stiffener extra thickness on one wall (Figs. 23C, 24A; paragraph 127). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Maycher et al. by including a stability bar stiffener, wherein the stiffener would result in the anterior and posterior walls having different thicknesses as taught by Black et al. in order to provide reinforcement to the mouthpiece.

As to claim 14, 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, Maycher et al. discloses the end product and the structures thereof as claimed as detailed above with all the essential portions forming the device as one piece. The burden is shifted to applicant to show an unobvious difference between Maycher et al.' device and the invention that would have resulted from the injection molding process.

As to claims 19-20, Maycher et al. fails to disclose a bite block portion. Black et al. discloses a detachable mouth prop 10 having a bite block portion 10 and a strap portion 12 corresponding to a plug 65 of the main body (Fig. 6A). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include such detachable mouth prop 10 to Maycher et al. in order to prop open the mouth during a treatment procedure as taught by Black et al.

Regarding claim 22, Maycher et al. discloses all the elements as claimed as detailed above with respect to claim 21. Maycher et al. further discloses a suction connector portion 24 connected to one end of the main body portion; the suction connector portion 24 configured to connect a vacuum source 50 with the interior of the pocket within the main body portion. Maycher et al. fails to disclose a connection configured to connect the main body portion to a cheek retractor. Black et al. disclose a connection 49 configured to connect the main body 40a at a second to a cheek retractor 40b (Figs. 3A-3B; paragraph 79). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate such connection in Maycher et al. in order to connect a cheek retractor to the main body as taught by Black et al.

5 **Claims 9-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Maycher et al. in view of Black et al., as applied to claim 21, and further in view of Riddle (1,471,207).** Maycher/Black discloses the invention substantially as claimed except for a bridge structure. Riddle discloses a saliva ejector tube having a bridge structure 5 protruding from an interior surface of a wall thereof and unattached to the opposite wall. The protruding bridge comprises a plurality of protrusions (waved wire) to keep the walls separated from one another during suction (Fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate such bridge into Maycher/Black's device in order to prevent collapse when under suction pressure as explicitly taught by Riddle.

6 **Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maycher et al. view of Black et al., and further in view of Sclafani (5,890,899).**

Maycher/Black discloses the invention substantially as claimed. Maycher discloses material used to form the device being flexible, high heat-resistant, as evidenced by disclosure

of sterilization for reuse (paragraph 29). Black et al. discloses However, Maycher/Black fails to disclose the material being silicone-base. Sclafani discloses a dental suction isolator device formed of silicone-based material (Figs. 1-9, column 8 lines 10-15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make Maycher/Black' device from silicone-based material as taught by Sclafani to be a known alternative suitable known material while yielding the same and/or predictable results.

Response to Arguments

7. Applicant's arguments regarding the amendment made to the claims have been considered but are moot but are not persuasive as having overcome the ground(s) of rejection under Maycher in view of Black et al. Regarding the newly recited limitation(s), Maycher fails to disclose a rectangular portion configured to connect to the main body at one end and to connect a cheek retractor portion at another end. Black et al. discloses a mouthpiece 40 having a rectangle portion 49 connecting an end of the main body 40 to a cheek retractor 40b, wherein the rectangle portion area 49 has a third set of perforations 42, 43 (Fig. 3A-3B). Note that Black et al. discloses the suction lumen and thus the channel apertures extend to the transition section 49 (paragraph 85). Black et al. also discloses having the suction channel at the the cheek retractor portion 240b may lead to loss of pressure/suction because of the channels there (Figs. 3B, paragraph 88) effectively indicating that there are suction apertures at the rectangle portion. It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify Maycher by include a narrow rectangular narrow portion in order to connect a check retractor and form an "isthmus between the superior and lower portions" as explicitly taught by Black et al. (paragraph 121).

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 3732

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14228046	NGUYEN ET AL.
	Examiner	Art Unit
	HAO D MAI	3732

CPC- SEARCHED		
Symbol	Date	Examiner
A61C 17/043,046	11/03/2015	HDM
Update Search	05/31/2016	HDM
Update Search	10/03/2016	HDM
A61C 17/04, 0208	11/01/2016	HDM
Update Search	11/01/2016	HDM
Udpate Search	05/30/2017	HDM
Update Search	12/26/2017	HDM

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
433	93	11/03/2015	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	11/03/2015	HDM
Review searches of parent case 14/100323	11/03/2015	HDM
Update Search	05/31/2016	HDM
Update Search	10/03/2016	HDM
Update Search	11/01/2016	HDM
Update Search	05/30/2017	HDM
Update Search	12/26/2017	HDM
Update Search	10/01/2018	HDM

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

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	("20090274991").PN.	US-PGPUB; USPAT	OR	OFF	2018/10/01 12:50
L4	12	maycher.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2018/10/01 12:51
L5	10	"14100323"	US-PGPUB; USPAT	ADJ	OFF	2018/10/01 12:53
L12	73	(US-20080053434-$ or US-20080166684-$ or US-20090123886-$ or US-20140087328-$ or US-20160038348-$ or US-20140349249-$ or US-20130095450-$ or US-20040122352-$ or US-20120237894-$ or US-20060008764-$).did. or (US-3090122-$ 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-3171203-$ or US-1122086-$ or US-4017975-$ or US-4167814-$ or US-5513986-$ or US-5890899-$ or US-D495799-$ or US-3768477-$ or US-3877691-$ or US-4718662-$ or US-3396468-$ or US-2111859-$ or US-2937445-$ or US-4024642-$).did. or (US-4425911-$ or US-6652276-$ or US-8556872-$ or US-5080587-$ or US-D360685-$ or US-D615203-$ or US-5762496-$ or US-5460626-$ or US-6068477-$ or US-2482116-$ or US-6241658-$ or US-6716029-$ or US-8740788-$ or US-3758950-$ or US-3864831-$ or US-5425637-$ or US-5441410-$ or US-2696047-$ or US-3101544-$ or US-D258531-$ or US-D261677-$ or US-4975057-$ or US-5009595-$ or US-5827061-$ or US-1891690-$ or US-2701916-$ or US-4417874-$).did. or (US-5931673-$ or US-5941873-$ or US-6988893-$ or US-2507938-$ or US-3101543-$).did. or (US-2937445-$ or US-2250285-$ or US-1471207-$ or US-3101544-$ or US-3101543-$).did.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2018/10/01 13:28
L17	19	l12 and (cheek)	US-PGPUB; USPAT; USOCR	ADJ	OFF	2018/10/01 13:29

L18	0	l12 and isthmus	US-PGPUB; USPAT; USOCR	ADJ	OFF	2018/10/01 13:29
L19	8	l12 and narrow	US-PGPUB; USPAT; USOCR	ADJ	OFF	2018/10/01 13:30

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L11	78	A61C17/04,0208,043.cpc. and (cheek retractor)	US-PGPUB; USPAT	WITH	ON	2018/10/01 13:28
L13	23	"Term Removed" or "Term Removed"	US-PGPUB; USPAT	ADJ	OFF	2018/10/01 13:28

10/ 1/ 2018 1:30:40 PM
C:\ Users\ hmai1\ Documents\ EAST\ Workspaces\ 14228046.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14228046	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	11/03/2015	05/31/2016	11/01/2016	05/30/2017	12/26/2017	10/01/2018			
	1	✓	✓	✓	-	-	-			
	2	✓	✓	✓	✓	✓	✓			
	3	✓	✓	✓	✓	✓	✓			
	4	✓	✓	✓	✓	✓	✓			
	5	✓	✓	✓	✓	✓	✓			
	6	✓	✓	✓	✓	✓	✓			
	7	✓	✓	✓	✓	✓	✓			
	8	✓	✓	✓	✓	✓	✓			
	9	✓	✓	✓	✓	✓	✓			
	10	✓	✓	✓	✓	✓	✓			
	11	✓	✓	✓	✓	✓	✓			
	12	✓	✓	✓	✓	✓	✓			
	13	✓	✓	✓	✓	✓	✓			
	14	✓	✓	✓	✓	✓	✓			
	15	✓	✓	✓	✓	✓	✓			
	16	✓	✓	✓	✓	✓	✓			
	17	✓	✓	-	-	-	-			
	18	✓	✓	-	-	-	-			
	19	✓	✓	✓	✓	✓	✓			
	20	✓	✓	✓	✓	✓	✓			
	21			✓	✓	✓	✓			
	22			✓	✓	✓	✓			

Substitute for Form 1449/PTO	*Complete if Known*	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application Number	14/228,046
	Filing Date	March 27, 2014
	First Named Inventor:	Thien Nguyen
(use as many sheets as necessary)	Art Unit	3772
	Examiner Name	Hao D. Mai
Sheet 1 of 1	Attorney Docket Number	INCEP-001COA

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-001COD U.S. Patent Application 14/228,057; Office Action mailed 9/7/18	
		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.**

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

Electronic Acknowledgement Receipt

EFS ID:	34190080
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	05-NOV-2018
Filing Date:	27-MAR-2014
Time Stamp:	10:43:43
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-001COA_IDS_Statement_11-5-18.pdf	19170 978897e4054fdaa47fccd980044c2497778b0c86	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COA_IDS_1449_11-5-18.pdf	27866 a99c906f44f285da68abf76dc5b5b5656663e158	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	47036	

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.: 14/228,046 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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

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/_____
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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	14/228,046
	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-001COA

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.

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Electronic Acknowledgement Receipt

EFS ID:	35008207
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	01-FEB-2019
Filing Date:	27-MAR-2014
Time Stamp:	11:01:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

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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-001COA_IDS_Statement_2-1-19.pdf	19167 f40a54e6a9cae0a918e2502cd582015901be510f	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COA_IDS_1449_2-1-19.pdf	27766 5eba247e977de738696e7712791132bb630c8fe3	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	46933	

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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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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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

Serial No.: 14/228,046 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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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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

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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 14/228,046	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	02/05/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 2	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".	/DEBRA A SAVOY/
*** 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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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Thien Nguyen et al.	Examiner:	Hao D. Mai
Serial No.:	14/228,046	Group Art No.:	3732
Filed:	March 27, 2014	Conf. No.:	7700
Title:	Intraoral Device with Mesh	Dkt. No.:	INCEP- 001COA

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

AMENDMENT

In response to the nonfinal Office Action mailed October 5, 2018 (*Office Action)*, 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 7 of this paper.

CLAIMS

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

1. (cancelled)

2. (previously presented) The dental mouthpiece of claim 21, wherein the first set and the second set of perforations on the superior and inferior walls are spaced to comprise a mesh.

3. (previously presented) The dental mouthpiece of claim 21, wherein the anterior wall further comprises a fourth set of perforations.

4. (previously presented) The dental mouthpiece of claim 3, wherein the fourth set of perforations on the anterior wall are spaced to comprise a mesh.

5. (previously presented) The dental mouthpiece of claim 21, wherein the posterior wall further comprises one or more perforations.

6. (original) The dental mouthpiece of claim 5, wherein the perforations on the posterior wall are spaced to comprise a mesh.

7. (previously presented) The dental mouthpiece of claim 21, wherein the opening from the anterior wall to the pocket includes a slit along a longitudinal axis of the main body.

8. (currently amended) The dental mouthpiece of claim 21, wherein suction provided at a suction connector within the interior <u>open space</u> of the pocket provides suction of fluids through the perforations in the side wall into the interior of the pocket towards the suction connector.

9. (previously presented) The dental mouthpiece of claim 21 further comprising a bridge structure protruding from an interior surface of the posterior wall and unattached to the anterior wall, the protruding bridge structure comprising a plurality of protrusions collectively providing spaced contact points that keep the anterior wall separated from the posterior wall during suction.

10. (currently amended) The dental mouthpiece of claim 9, wherein suction provided at the suction connector within the interior open space of the pocket draws fluids through spaces between the protrusions of the bridge structure towards the suction connector.

11. (previously presented) The dental mouthpiece of claim 21, further comprising the cheek retractor portion, the cheek retractor having a surface that applies pressure when the dental mouthpiece is bent, wherein the pressure is based on resilience of a material from which the cheek retractor is formed.

12. (previously presented) The dental mouthpiece of claim 11, wherein the cheek retractor portion comprises an extension of the pocket, wherein a side wall of the extension comprises one or more perforations.

13. (previously presented) The dental mouthpiece of claim 11, further comprising a stability bar protruding from an interior surface of the posterior wall along the longitudinal axis of the main body and extending through at least part of the cheek retractor, wherein a thickness of the stability bar corresponds to resilience by which the cheek retractor portion applies pressure during bending.

14. (previously presented) The dental mouthpiece of claim 21, wherein the main body portion is formed by injection-molding as one piece.

15. (previously presented) The dental mouthpiece of claim 21, wherein a material from which the main body is formed is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

16. (original) The dental mouthpiece of claim 21, wherein the anterior wall and the posterior wall have different thicknesses.

17. (cancelled)

18. (cancelled)

19. (previously presented) The dental mouthpiece of claim 21, further comprising a detachable mouth prop, the detachable mouth prop comprising a bite block portion and a strap portion, wherein the bite block portion and the strap portion are injection-molded in one piece.

20. (previously presented) The dental mouthpiece of claim 21, wherein a bite block portion comprises an opening corresponding to a plug connected to the main body.

21. (currently amended) A dental mouthpiece comprising:

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

an anterior wall having a shape defined by an exterior edge, wherein the anterior wall includes an opening to the interior of the pocket,

a posterior wall having a shape corresponding to the defined shape of the anterior wall, wherein an exterior edge of the posterior wall shape corresponds to the exterior edge of the anterior wall,

a superior wall connecting the exterior edge of the anterior wall across a superior wall span to the corresponding exterior edge of the posterior wall on a first side, wherein at least part of the superior wall comprises a first set of perforations into the interior of the pocket, and wherein the superior wall span between the anterior wall and the posterior wall is less than a width of the anterior wall,

an inferior wall connecting the exterior edge of the anterior wall across an inferior wall span to the corresponding exterior edge of the posterior wall on a second side, wherein at least part of the inferior wall comprises a second set of perforations into the interior of the pocket, and wherein the inferior wall span between the anterior and the posterior wall is less than the width of the anterior wall, wherein the interior open space of the pocket is defined by the defined shape of the anterior wall, the corresponding shape of the posterior wall, the superior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall, and the inferior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall; and

a rectangular portion configured to connect to the main body at an end and to connect a cheek retractor portion at another end, wherein the interior open space of the pocket extends into the rectangular portion, and wherein a wall of the rectangular portion comprises a third set of perforations.

22. (currently amended) A dental mouthpiece comprising:

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

an anterior wall having a shape defined by a smooth exterior edge, wherein the anterior wall includes an opening to the interior of the pocket,

a posterior wall having a shape corresponding to the defined shape of the anterior wall, wherein a smooth exterior edge of the posterior wall shape corresponds to the smooth exterior edge of the anterior wall,

a superior wall connecting the smooth exterior edge of the anterior wall across a superior wall span to the corresponding smooth exterior edge of the posterior wall on a first side, wherein at least part of the superior wall comprises a first set of perforations, wherein the superior wall is perpendicular to the anterior wall and the posterior wall, and wherein the superior wall span is less than a width of the anterior wall, and

an inferior wall connecting the exterior edge of the anterior wall across an inferior wall span to the corresponding exterior edge of the posterior wall on a second side, wherein at least part of the inferior wall comprises a second set of perforations, wherein the inferior wall is perpendicular to the anterior wall and the posterior wall, and wherein the inferior wall span is less than the width of the anterior wall, wherein the interior open space of the pocket is defined by the anterior wall, the posterior wall, the superior wall, and the inferior wall; and

a suction connector portion connected to one end of the main body portion, the suction connector configured to connect a vacuum source with the interior of the pocket within the main body portion;[[,]] and

a rectangular portion configured to connect the main body portion at a second end to a cheek retractor, wherein the second end is opposite to the one end of the main body portion, wherein a wall of the rectangular portion comprises a third set of perforations, and wherein the interior open space of the pocket extends into the rectangular portion.

REMARKS

Status of the Claims

The Applicants have amended claims 8, 10, 21, and 22. Support for the amendments can be found throughout the *Specification*. No new matter has been added. As such, Claims 2-16 and 19-22 are pending.

Rejections under 35 U.S.C. §103

Claims 2-8, 11-14, 16, 19-20 and 21-22 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over National Publication No. WO2011/014952 to Maycher et al. ("*Maycher*") in view of U.S. Publication No. 2009/0274991 to Black et al. ("*Black*"). *Office Action*, pg. 2. Applicants respectfully disagree.

Claim 21 has been amended to recite, "wherein the **interior open space of the pocket is defined** by the **defined shape of the anterior wall**, the **corresponding shape of the posterior wall**, the **superior wall** connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall, and **the inferior wall connecting** the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall," and "wherein the **interior open space of the pocket extends into the rectangular portion**." The interior open space is shown below for reference:

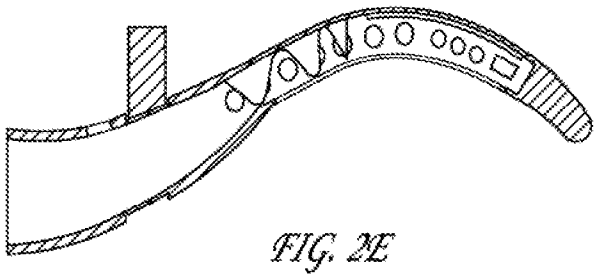


FIG. 2E

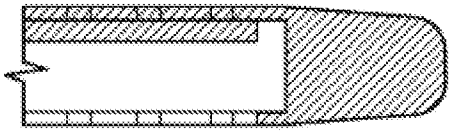


FIG. 7B

As shown above, interior open space extends to each of the anterior wall, the posterior wall, the superior wall, and the inferior wall.

Applicants submit that *Maycher* and *Black* fail to teach an interior open space defined by a defined shape of an anterior wall, a corresponding shape of a posterior wall, a superior wall connecting an exterior edge of the anterior wall to a corresponding exterior edge of the posterior wall, and an inferior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall. *Maycher* teaches a dental apparatus having an intraoral tip. *Maycher*, Abstract. *Maycher* further teaches the intraoral tip having a wall defining a cavity and a plurality of apertures. *Id.* at para. [0026]. Nowhere does *Maycher* teach an interior open space of a pocket **that extends into a rectangular portion**.

Indeed, the Examiner concedes that *Maycher* does not teach a rectangular portion and relies on *Black* to teach this feature. *Office Action*, pg. 3. However, *Black* does not cure the deficiencies of *Maycher*. *Black* teaches a tongue shield aspirator for fluid removal during a dental procedure. *Black*. at Abstract. *Black* teaches flaps connected by transverse walls located between each flap. *Id.* at para. [0079] - [0080]. Nowhere does *Black* teach an **interior open space defined by** a defined shape of **an anterior wall**, a corresponding shape of **a posterior wall**, **a superior wall** connecting an exterior edge of the anterior wall to a corresponding exterior edge of the posterior wall, and **an inferior wall** connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall**, and an interior open space of a pocket that**

extends into a rectangular portion. As such, neither *Black* nor *Maycher* together or separately teach the feature of an interior open space defined by a defined shape of an anterior wall, a corresponding shape of a posterior wall, a superior wall connecting an exterior edge of the anterior wall to a corresponding exterior edge of the posterior wall, and an inferior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall, and an interior open space of a pocket that extends into a rectangular portion.

Independent claim 22 recites substantially the same amended features as independent claim 21 and is allowable for at least the same reasons as provided above.

For at least these reasons, claims 2-8, 11-14, 16, 19-20 and 21-22 are not obvious under 35 U.S.C. 103(a) by *Maycher* in view of *Black*. Thus, withdrawal of the rejection of claims 2-8, 11-14, 16, 19-20 and 21-22 is respectfully requested.

Dependent Claims 9-10

Claims 9-10 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Maycher in view of Black, as applied to claim 21, and further in view of U.S. Patent No. 1,471,207 to Riddle (*"Riddle"*). *Office Action*, pg. 6. Applicants respectfully disagree. Because claims 9-10 dependent from independent claim 21, claims 9-10 are allowable for at least the same reasons as claim 21. Withdrawal of the rejection is respectfully requested.

Dependent Claim 15

Claim 15 was rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Maycher in view of Black, and further in view of U.S. Patent No. 5,890,899 to Sclafani (*"Sclafani"*). *Office Action*, pg. 6. Applicants respectfully disagree. Because claim 15 depends from independent claim 21, claim 15 is allowable for at least the same reasons as claim 21. Withdrawal of the rejection is respectfully requested.

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 are submitting this response with a petition for a one-month extension and the corresponding fee. 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.

Applicant's undersigned representative 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.

Respectfully submitted,

February 5, 2019 **POLSINELLI LLP**

/ Stephanie T. Vu/

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Electronic Patent Application Fee Transmittal

Application Number:	14228046
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH MESH
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Stephanie Thien Vu/Kristine Goodman
Attorney Docket Number:	INCEP-001COA

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($)
Extension - 1 month with $0 paid	2251	1	100	100
Miscellaneous:				
			Total in USD ($)	**100**

Electronic Acknowledgement Receipt

EFS ID:	35067309
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	05-FEB-2019
Filing Date:	27-MAR-2014
Time Stamp:	17:33:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$100
RAM confirmation Number	020619INTEFSW00004379501662
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		ResponseToNFOA.pdf	174777 5c2d88f372230e295f4101cbfcbd222fa1e61ebe	yes	10
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	6	
	Applicant Arguments/Remarks Made in an Amendment		7	10	
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30498 f3501431157704 0a153df97d148ad0665d627e00	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	205275		

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	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,046
	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-001COA

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-001COD U.S. Patent Application 14/228,057; Final Office Action mailed 3/22/19	

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.**

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

Electronic Acknowledgement Receipt

EFS ID:	36254721
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	11-JUN-2019
Filing Date:	27-MAR-2014
Time Stamp:	19:18:45
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-001COA_IDS_Statement_6-11-19.pdf	19233 0f4ee23db1be99c1f414c472f12e65ee5df09e5d	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COA_IDS_1449_6-11-19.pdf	27786 fb9f9d4d05288229fc38f466fc626505ce001ec1	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	47019	

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.: 14/228,046 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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

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: June 11, 2019

By: _____/Stephanie T. Vu/_____
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,046	03/27/2014	Thien Nguyen	INCEP-001COA	7700

138718 7590 07/15/2019

Polsinelli LLP
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San Francisco, CA 94111

EXAMINER	
MAI, HAO D	

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
07/15/2019	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

Office Action Summary	Application No. 14/228,046	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 06/11/2019.

☐ 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) 2-16 and 19-22 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) 2-16 and 19-22 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: _____.

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 2-16 and 19-22 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 21-22 each recites "the interior" (claim 21 line 4, 10, 15-16; claim 22 line 4, 21), which lacks antecedent basis. It is unclear whether such "interior" is the same or different from the previously defined limitation "an interior open space" (line 2).

- Likewise, claims 8 recites "the interior" (line 3), which lacks antecedent basis.

All other dependent claims are rejected herein based on dependency of the base claim 10 rejected herein.

Claim Rejections - 35 USC § 103

4. 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.

5. **Claims 2-8, 11-14, 16, and 19-22, are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable by Maycher et al. (WO 2011/014952) in view of Black et al. (2009/0274991).**

Regarding claim 21, Maycher et al. discloses a dental mouthpiece comprising a main body portion 20 configured as a pocket 29 having an interior open space 29 (Fig. 9; paragraphs 26-27) having a wall 26 with apertures 22 (Figs. 9; paragraphs 26-28). Maycher et al. further discloses the body portion 20 may be rectangular (Fig. 6; paragraph 40) in which the interior 29 would be defined by corresponding anterior and posterior walls connected at respective exterior edges thereof by a superior/side wall extending across a superior/side wall span and an inferior/side wall extending across an inferior/side wall span between the anterior and posterior walls. As shown in Fig. 9, there are openings and/or apertures 22 disposed on the anterior, posterior, and superior/side walls 26; the apertures 22 extend through the wall 26 into the interior 29 of the pocket (Fig. 9).

Regarding the newly recited limitation(s), Maycher et al. disclose that the main body portion 20 may be rectangular (Fig. 6; paragraph 40), and thus the interior open space 29 would be defined by the defined shape of the anterior wall, the corresponding shape of the posterior wall, the superior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall, and the inferior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall (Fig. 6).

Maycher et al. discloses the dimension of a rectangular mouthpiece may be similar of the dimensions of the cylindrical/tubular mouthpiece (paragraph 40), failing to explicitly disclose the superior/side and inferior/side wall spans being less than a width of the anterior wall. Black et al. discloses an surgical aspirating paddle 71 (Fig. 7A) or 60 (Figs. 6A-6C) formed as a pocket with an interior and anterior and posterior wall, wherein side walls (as viewed in Fig. 6B) is less than a width of the anterior wall. It would have been obvious to one having ordinary skill

in the art at the time the invention was made to adapt Maycher's rectangular mouthpiece to have a superior/side wall span being less than a width of the anterior wall as taught by Black et al. in order to form a low-profile mouthpiece suitable to be fitted within the mouth.

Maycher fails to disclose a rectangular portion configured to connect to the main body at one end and to connect a cheek retractor portion at another end. Black et al. discloses a mouthpiece 40 having a rectangle portion (area best pointed to by reference numerals 41 and 49 in Fig. 3B) connecting an end of the main body 40 to a cheek retractor 40b, wherein the rectangle portion area 49 has a third set of perforations 42, 43 (Fig. 3A-3B). Note that Black et al. discloses the suction lumen and thus the channel apertures extend to the transition section 41/49 (paragraph 85). Black et al. also discloses having the suction channel at the cheek retractor portion 240b may lead to loss of pressure/suction because of the channels there (Figs. 3B, paragraph 88) effectively indicating that there are suction apertures at the rectangle portion. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Maycher by include a narrow rectangular narrow portion in order to connect a check retractor and form an "isthmus between the superior and lower portions" as explicitly taught by Black et al. (paragraph 121).

As to claims 2-6, Maycher et al.'s perforations 22 are shown being disposed on the anterior, posterior, and superior/side walls 26 and are spaced apart, thereby forming a mesh. As to claim 7, the opening 22 in the anterior wall is considered to be a slit along a longitudinal axis of the main body. As to claim 8, suction is provided at a suction connector 24 within the interior of the pocket to provide suction of fluids through the perforations 22 towards the suction connector (Fig. 1; paragraph 43).

As to claims 11-12, Maycher et al. fails to disclose a cheek retractor portion. Black et al. discloses a mouthpiece 240 comprising cheek retractor 240e having a surface that applies pressure when the dental mouthpiece is bent, wherein the pressure is based on resilience of a material from which the cheek retractor 240 is formed; the cheek retractor 22 comprises an

extension of the pocket/lumen 241 and a side wall of the extension comprises one or more perforation/opening into lumen 241 (Figs. 4A; 87-88). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Maycher et al. by incorporating a cheek retractor as taught by Black et al. in order to provide retraction of the cheek during a procedure within the mouth.

As to claims 13 and 16, Maycher et al. fails to disclose a stability bar and the anterior and posterior walls having different thicknesses. Black et al. discloses the posterior wall may be thicker due to stiffener 347 or 447 to reinforce to the mouthpiece (Figs. 23C, 24A paragraph 127). The posterior wall portion at stiffener 347 is considered to comprise a stability bar (extra thickness) protruding from an interior surface of the posterior wall along the longitudinal axis of the main body and extending through at least part of the cheek retractor. The anterior wall and the posterior wall have different thicknesses due to the stiffener extra thickness on one wall (Figs. 23C, 24A; paragraph 127). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Maycher et al. by including a stability bar stiffener, wherein the stiffener would result in the anterior and posterior walls having different thicknesses as taught by Black et al. in order to provide reinforcement to the mouthpiece.

As to claim 14, 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, Maycher et al. discloses the end product and the structures thereof as claimed as detailed above with all the essential portions forming the device as one piece. The burden is shifted to applicant to show an unobvious

difference between Maycher et al.' device and the invention that would have resulted from the injection molding process.

As to claims 19-20, Maycher et al. fails to disclose a bite block portion. Black et al. discloses a detachable mouth prop 10 having a bite block portion 10 and a strap portion 12 corresponding to a plug 65 of the main body (Fig. 6A). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include such detachable mouth prop 10 to Maycher et al. in order to prop open the mouth during a treatment procedure as taught by Black et al.

Regarding claim 22, Maycher et al. discloses all the elements as claimed as detailed above with respect to claim 21. Maycher et al. further discloses a suction connector portion 24 connected to one end of the main body portion; the suction connector portion 24 configured to connect a vacuum source 50 with the interior of the pocket within the main body portion. Maycher et al. fails to disclose a connection configured to connect the main body portion to a cheek retractor. Black et al. disclose a connection 49 configured to connect the main body 40a at a second to a cheek retractor 40b (Figs. 3A-3B; paragraph 79). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate such connection in Maycher et al. in order to connect a cheek retractor to the main body as taught by Black et al.

5 **Claims 9-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Maycher et al. in view of Black et al., as applied to claim 21, and further in view of Riddle (1,471,207).**

Maycher/Black discloses the invention substantially as claimed except for a bridge structure. Riddle discloses a saliva ejector tube having a bridge structure 5 protruding from an interior surface of a wall thereof and unattached to the opposite wall. The protruding bridge comprises a plurality of protrusions (waved wire) to keep the walls separated from one another during suction (Fig. 1). It would have been obvious to one having ordinary skill in the art at the

time the invention was made to incorporate such bridge into Maycher/Black's device in order to prevent collapse when under suction pressure as explicitly taught by Riddle.

7. **Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maycher et al. view of Black et al., and further in view of Sclafani (5,890,899).**

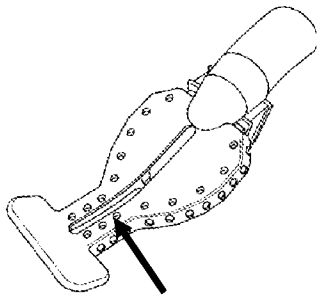
Maycher/Black discloses the invention substantially as claimed. Maycher discloses material used to form the device being flexible, high heat-resistant, as evidenced by disclosure of sterilization for reuse (paragraph 29). Black et al. discloses However, Maycher/Black fails to disclose the material being silicone-base. Sclafani discloses a dental suction isolator device formed of silicone-based material (Figs. 1-9, column 8 lines 10-15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make Maycher/Black' device from silicone-based material as taught by Sclafani to be a known alternative suitable known material while yielding the same and/or predictable results.

Response to Arguments

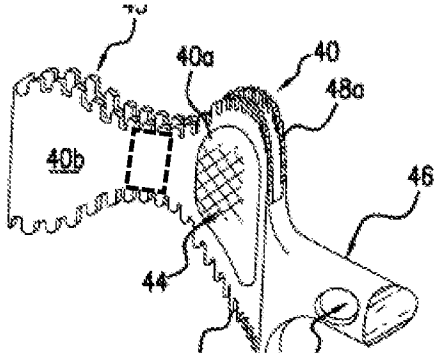
8. Applicant's arguments have been considered but are not found persuasive. Applicant argues that neither Maycher nor Black teaches an interior open space of a pocket that extends into a rectangular portion. It is maintained that Mayer clearly discloses a mouthpiece comprising a main body portion, configured as a pocket having an interior open space 29 (Fig. 9). Mayer further discloses the mouthpiece may be rectangular shaped (Fig. 6; paragraph 40); such rectangular shaped mouthpiece thus would have the walls with exterior edges defining the rectangular shape as claimed.

Maycher fails to disclose a rectangular portion configured to connect to the main body at one end and to connect a cheek retractor portion at another end. Black et al. discloses a mouthpiece 40 having a rectangle portion (area best pointed to by reference numerals 41 and 49 in Fig. 3B) connecting an end of the main body 40 to a cheek retractor 40b, wherein the

rectangle portion area 41/49 has a third set of perforations 42, 43 (Fig. 3A-3B). Note that Black et al. discloses the suction lumen and thus the channel apertures extend to the transition section 41/49 (paragraph 85). Black et al. also discloses having the suction channel at the cheek retractor portion 240b may lead to loss of pressure/suction because of the channels there (Figs. 3B, paragraph 88) effectively indicating that there are suction apertures at the rectangle portion. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Maycher by include a narrow rectangular narrow portion in order to connect a check retractor and form an "isthmus between the superior and lower portions" as explicitly taught by Black et al. (paragraph 121). See annotated drawings comparing Applicant's invention with Black et al.'s device regarding the claimed rectangular portion. Note that Black et al. is not cited for the claimed interior open space. Maycher et al. already discloses a mouthpiece having a pocket with an interior open space as claimed.



Applicant's invention; the arrow points to the claimed rectangular portion into which the interior open space extends.



Black et al.'s mouthpiece having a rectangular portion (dash line) as claimed, into which the interior open space or suction lumen extends.

Conclusion

9. 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

Notice of References Cited	Application/Control No. 14/228,046	Applicant(s)/Patent Under Reexamination Nguyen et al.	
	Examiner HAO D MAI	Art Unit 3772	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-2019612-A	11-1935	LANGHANS OTTO W	H01J35/16	313/242
	B					
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	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	11/03/2015	05/31/2016	11/01/2016	05/30/2017	12/26/2017	10/01/2018	07/09/2019		
	1	✓	✓	✓	-	-	-	-		
	2	✓	✓	✓	✓	✓	✓	✓		
	3	✓	✓	✓	✓	✓	✓	✓		
	4	✓	✓	✓	✓	✓	✓	✓		
	5	✓	✓	✓	✓	✓	✓	✓		
	6	✓	✓	✓	✓	✓	✓	✓		
	7	✓	✓	✓	✓	✓	✓	✓		
	8	✓	✓	✓	✓	✓	✓	✓		
	9	✓	✓	✓	✓	✓	✓	✓		
	10	✓	✓	✓	✓	✓	✓	✓		
	11	✓	✓	✓	✓	✓	✓	✓		
	12	✓	✓	✓	✓	✓	✓	✓		
	13	✓	✓	✓	✓	✓	✓	✓		
	14	✓	✓	✓	✓	✓	✓	✓		
	15	✓	✓	✓	✓	✓	✓	✓		
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	18	✓	✓	-	-	-	-	-		
	19	✓	✓	✓	✓	✓	✓	✓		
	20	✓	✓	✓	✓	✓	✓	✓		
	21			✓	✓	✓	✓	✓		
	22			✓	✓	✓	✓	✓		

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043,046	11/03/2015	HDM
Update Search	05/31/2016	HDM
Update Search	10/03/2016	HDM
A61C 17/04, 0208	11/01/2016	HDM
Update Search	11/01/2016	HDM
Udpate Search	05/30/2017	HDM
Update Search	12/26/2017	HDM
Update Search	07/09/2019	HDM

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

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
433	93	11/03/2015	HDM

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

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor Search	11/03/2015	HDM
Review searches of parent case 14/100323	11/03/2015	HDM
Update Search	05/31/2016	HDM
Update Search	10/03/2016	HDM
Update Search	11/01/2016	HDM
Update Search	05/30/2017	HDM
Update Search	12/26/2017	HDM
Update Search	10/01/2018	HDM
Update Search	07/09/2019	HDM

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

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,046
	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-001COA

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-001COD U.S. Patent Application 14/228,057; Final Office Action mailed 3/22/19	

Examiner Signature	/Hao D Mai/	Date Considered	07/09/2019

*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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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/

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	92	A61C17/04,0208,043.cpc. and (rectangular)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/09 15:00
L2	21	A61C17/04,0208,043.cpc. and (tongue or cheek) and (suction or suck$3) and mouth and (hollow) and edge	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/09 15:01
S135	3	(("20090274991") or ("1471207") or ("5890899")).PN.	US-PGPUB; USPAT	OR	OFF	2019/07/09 11:00
S141	2	(wo-2011014952-$).did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2019/07/09 11:02

7/ 9/ 2019 3:02:13 PM
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Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application Number	14/228,046
(use as many sheets as necessary)	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-001COA

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-001COD U.S. Patent Application 14/228,057; Office Action mailed 9/7/18	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Office Action mailed 10/4/18	

Examiner Signature	/Hao D Mai/	Date Considered	07/09/2019

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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	14/228,046
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COA

Sheet	1	of	1

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-				
		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	07/09/2019

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 **of** 1

Complete if Known	
Application Number	14/228,046
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COA

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	07/09/2019

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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	14/228,046
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COA

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-			
		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
		EP 3184076	6/28/2017	Incept, Inc.		

Examiner Signature	/Hao D Mai/	Date Considered	07/09/2019

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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	14/228,046
	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-001COA

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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	07/09/2019

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

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,046
	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-001COA

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		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	

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Electronic Acknowledgement Receipt

EFS ID:	37050409
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	04-SEP-2019
Filing Date:	27-MAR-2014
Time Stamp:	19:37:00
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	Transmittal Letter	INCEP-001COA_IDS_Statement_9-4-19.pdf	19160 b887adffb1ab1b6c803cfef0537907aa0af439c1	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COA_IDS_1449_9-4-19.pdf	27844 5529044fad33645d0adc21d1cfaabdbbce0a1271	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	47004	

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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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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

Serial No.: 14/228,046 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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

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: September 4, 2019

By: _____/Stephanie T. Vu/_____
Stephanie T. Vu (Reg. No. 73,063)
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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 14/228,046	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	10/15/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 2	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.**

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

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	14228046	Filing Date	2014-03-27	Docket Number (if applicable)	INCEP-001COA	Art Unit	3772
First Named Inventor	NGUYEN			Examiner Name	HAO		

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

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	/Stephanie T. Vu/	Date (YYYY-MM-DD)	2019-10-15
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.

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

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.

Electronic Patent Application Fee Transmittal

Application Number:	14228046
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH MESH
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Stephanie Thien Vu/Rita Christensen
Attorney Docket Number:	INCEP-001COA

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:	37462760
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	15-OCT-2019
Filing Date:	27-MAR-2014
Time Stamp:	17:01:09
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		514253-AMENDMENT.pdf	199371 9c3e7f6f8e3f3f78036efcd7282fe47ef97de70f	yes	10

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Applicant Arguments/Remarks Made in an Amendment	7	10
	Claims	2	6
	Response After Final Action	1	1

Warnings:					
Information:					
2	Request for Continued Examination (RCE)	514253-RCE.pdf	1390881 9ec54499fca4d5beb71ea9a3e029b1d63781c79a	no	3
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30435 be122e0a28af3e3f2955acb3e27cf5a033b6d24d	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1620687		

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 Applicants have amended claims 8, 21 and 22. Support for the amendments can be found throughout the *Specification*. No new matter has been added. As such, Claims 2-16 and 19-22 are pending.

Rejections under 35 U.S.C. §112

Claims 2-16 and 19-22 were 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. Claims 21, 22, and 8 have been amended to recite, "the interior **open space**." (emphasis added). Accordingly, withdrawal of the rejection is respectfully requested.

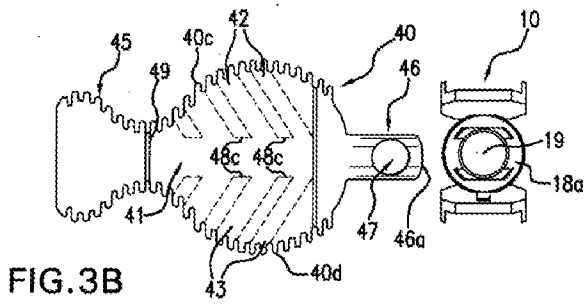
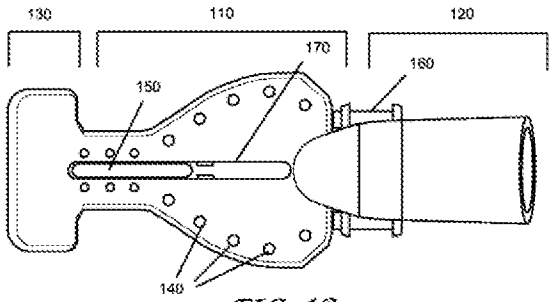
Rejections under 35 U.S.C. §103

Claims 2-8, 11-14, 16, 19-22 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over National Publication No. WO2011/014952 to Maycher et al. ("*Maycher*") in view of U.S. Publication No. 2009/0274991 to Black et al. ("*Black*"). *Office Action*, pgs. 2-3. Applicants respectfully disagree.

Claim 21 has been amended to recite, "a rectangular portion having an anterior wall extending from the anterior wall of the main body portion ... wherein the anterior wall of the rectangular portion comprises a third set of perforations" and "the rectangular portion configured to connect to the main body at an end and to connect a cheek retractor portion at another end." Applicants submit that neither *Maycher* nor *Black* separately or in combination teach these features.

Maycher teaches a dental apparatus having an intraoral tip. *Maycher*, Abstract. *Maycher* further teaches the intraoral tip having a wall defining a cavity and a plurality of apertures. *Id.* at para. [0026]. Nowhere does *Maycher* teach a rectangular portion configured to connect to a main body at an end and to connect a cheek retractor portion at another end. Indeed, the Examiner concedes that *Maycher* does not teach a rectangular portion and relies on *Black* to teach this feature. *Office Action*, pg. 4.

However, *Black* does not cure the deficiencies of *Maycher*. *Black* teaches a tongue shield aspirator for fluid removal during a dental procedure. *Black*, at Abstract. The tongue shield aspirator includes upper channels 42 and 43 extending from an inner lumen 41, as reproduced below in FIG. 3B. However, nowhere does *Black* show or teach a rectangular portion having an anterior wall extending from the anterior wall of the main body portion, wherein the anterior wall of the rectangular portion comprises a third set of perforations, as shown in FIG. 1B of the *Specification* and reproduced below. Upper channels extending from an inner lumen are not the same as an anterior wall of a rectangular portion comprising a third set of perforations.

Black	***Applicant***
 FIG.3B	 FIG. 1B

As such, neither *Black* nor *Maycher* together or separately teach the features of a rectangular portion having an anterior wall extending from the anterior wall of the main body portion, wherein the anterior wall of the rectangular portion comprises a third set of perforations and the rectangular portion configured to connect to the main body at an end and to connect a cheek

retractor portion at another end. Accordingly, independent claim 1 is patentable over Maycher and Black.

Independent claim 22 recites substantially the same amended features as independent claim 21 and is allowable for at least the same reasons as provided above. Because claims 2-8, 11-14, 16, and 19-20 depend from independent claim 21, claims 2-8, 11-14, 16, and 19-20 are allowable for at least the same reasons as claim 21.

For at least these reasons, claims 2-8, 11-14, 16, 19-20 and 21-22 are not obvious under 35 U.S.C. 103(a) by *Maycher* in view of *Black*. Thus, withdrawal of the rejection of claims 2-8, 11-14, 16, 19-22 is respectfully requested.

Dependent Claims 9-10

Claims 9-10 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Maycher in view of Black, as applied to claim 21, and further in view of U.S. Patent No. 1,471,207 to Riddle (*"Riddle"*). *Office Action*, pg. 6. Applicants respectfully disagree. Because claims 9-10 depend from independent claim 21, claims 9-10 are allowable for at least the same reasons as claim 21. Withdrawal of the rejection is respectfully requested.

Dependent Claim 15

Claim 15 was rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Maycher in view of Black, and further in view of U.S. Patent No. 5,890,899 to Sclafani (*"Sclafani"*). *Office Action*, pg. 6. Applicants respectfully disagree. Because claim 15 depends from independent claim 21, claim 15 is allowable for at least the same reasons as claim 21. Withdrawal of the rejection is respectfully requested.

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 are submitting this response with a Request for Continued Examination and the corresponding fee. 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.

Applicants' undersigned representative 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.

Respectfully submitted,

October 15, 2019 **POLSINELLI LLP**

/ Stephanie T. Vu/

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CLAIMS

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

1. (cancelled)

2. (previously presented) The dental mouthpiece of claim 21, wherein the first set and the second set of perforations on the superior and inferior walls are spaced to comprise a mesh.

3. (previously presented) The dental mouthpiece of claim 21, wherein the anterior wall further comprises a fourth set of perforations.

4. (previously presented) The dental mouthpiece of claim 3, wherein the fourth set of perforations on the anterior wall are spaced to comprise a mesh.

5. (previously presented) The dental mouthpiece of claim 21, wherein the posterior wall further comprises one or more perforations.

6. (original) The dental mouthpiece of claim 5, wherein the perforations on the posterior wall are spaced to comprise a mesh.

7. (previously presented) The dental mouthpiece of claim 21, wherein the opening from the anterior wall to the pocket includes a slit along a longitudinal axis of the main body.

8. (currently amended) The dental mouthpiece of claim 21, wherein suction provided at a suction connector within the interior open space of the pocket provides suction of fluids through the perforations in the side wall into the interior <u>open space</u> of the pocket towards the suction connector.

9. (previously presented) The dental mouthpiece of claim 21 further comprising a bridge structure protruding from an interior surface of the posterior wall and unattached to the anterior wall, the protruding bridge structure comprising a plurality of protrusions collectively providing spaced contact points that keep the anterior wall separated from the posterior wall during suction.

10. (previously presented) The dental mouthpiece of claim 9, wherein suction provided at the suction connector within the interior open space of the pocket draws fluids through spaces between the protrusions of the bridge structure towards the suction connector.

11. (previously presented) The dental mouthpiece of claim 21, further comprising the cheek retractor portion, the cheek retractor having a surface that applies pressure when the dental mouthpiece is bent, wherein the pressure is based on resilience of a material from which the cheek retractor is formed.

12. (previously presented) The dental mouthpiece of claim 11, wherein the cheek retractor portion comprises an extension of the pocket, wherein a side wall of the extension comprises one or more perforations.

13. (previously presented) The dental mouthpiece of claim 11, further comprising a stability bar protruding from an interior surface of the posterior wall along the longitudinal axis of the main body and extending through at least part of the cheek retractor, wherein a thickness of the stability bar corresponds to resilience by which the cheek retractor portion applies pressure during bending.

14. (previously presented) The dental mouthpiece of claim 21, wherein the main body portion is formed by injection-molding as one piece.

15. (previously presented) The dental mouthpiece of claim 21, wherein a material from which the main body is formed is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

16. (original) The dental mouthpiece of claim 21, wherein the anterior wall and the posterior wall have different thicknesses.

17. (cancelled)

18. (cancelled)

19. (previously presented) The dental mouthpiece of claim 21, further comprising a detachable mouth prop, the detachable mouth prop comprising a bite block portion and a strap portion, wherein the bite block portion and the strap portion are injection-molded in one piece.

20. (previously presented) The dental mouthpiece of claim 21, wherein a bite block portion comprises an opening corresponding to a plug connected to the main body.

21. (currently amended) A dental mouthpiece comprising:

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

an anterior wall having a shape defined by an exterior edge, wherein the anterior wall includes an opening to the interior open space of the pocket,

a posterior wall having a shape corresponding to the defined shape of the anterior wall, wherein an exterior edge of the posterior wall shape corresponds to the exterior edge of the anterior wall,

a superior wall connecting the exterior edge of the anterior wall across a superior wall span to the corresponding exterior edge of the posterior wall on a first side, wherein at least part of the superior wall comprises a first set of perforations into the interior of the pocket, and wherein the superior wall span between the anterior wall and the posterior wall is less than a width of the anterior wall,

an inferior wall connecting the exterior edge of the anterior wall across an inferior wall span to the corresponding exterior edge of the posterior wall on a second side, wherein at least part of the inferior wall comprises a second set of perforations into the interior of the pocket, and wherein the inferior wall span between the anterior and the posterior wall is less than the width of the anterior wall, wherein the interior open space of the pocket is defined by the defined shape of the anterior wall, the corresponding shape of the posterior wall, the superior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall, and the inferior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall; and

a rectangular portion having an anterior wall extending from the anterior wall of the main body portion, the rectangular portion configured to connect to the main body at an end and to connect a cheek retractor portion at another end, ~~wherein the interior open space of the pocket extends into the rectangular portion, and~~ wherein [[a]] the anterior wall of the rectangular portion comprises a third set of perforations.

22. (currently amended) A dental mouthpiece comprising:

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

an anterior wall having a shape defined by a smooth exterior edge, wherein the anterior wall includes an opening to the interior open space of the pocket,

a posterior wall having a shape corresponding to the defined shape of the anterior wall, wherein a smooth exterior edge of the posterior wall shape corresponds to the smooth exterior edge of the anterior wall,

a superior wall connecting the smooth exterior edge of the anterior wall across a superior wall span to the corresponding smooth exterior edge of the posterior wall on a first side, wherein at least part of the superior wall comprises a first set of perforations, wherein the superior wall is perpendicular to the anterior wall and the posterior wall, and wherein the superior wall span is less than a width of the anterior wall, and

an inferior wall connecting the exterior edge of the anterior wall across an inferior wall span to the corresponding exterior edge of the posterior wall on a second side, wherein at least part of the inferior wall comprises a second set of perforations, wherein the inferior wall is perpendicular to the anterior wall and the posterior wall, and wherein the inferior wall span is less than the width of the anterior wall, wherein the interior open space of the pocket is defined by the anterior wall, the posterior wall, the superior wall, and the inferior wall; and

a suction connector portion connected to one end of the main body portion, the suction connector configured to connect a vacuum source with the interior of the pocket within the main body portion; and

a rectangular portion having an anterior wall extending from the anterior wall of the main body portion, the rectangular portion configured to connect the main body portion at a second end to a cheek retractor, wherein the second end is opposite to the one end of the main body portion, wherein [[a]] the anterior wall of the rectangular portion comprises a third set of perforations~~, and wherein the interior open space of the pocket extends into the rectangular portion~~.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Thien Nguyen et al.	Examiner:	Hao D. Mai
Serial No.:	14/228,046	Group Art No.:	3772
Filed:	March 27, 2014	Conf. No.:	7700
Title:	Intraoral Device with Mesh	Dkt. No.:	INCEP- 001COA

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

AMENDMENT

In response to the final Office Action mailed July 15, 2019 (*Office Action)*, 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 7 of this paper.

Electronic Patent Application Fee Transmittal

Application Number:	14228046
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH MESH
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Stephanie Thien Vu/Rita Christensen
Attorney Docket Number:	INCEP-001COA

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:	37463702
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	15-OCT-2019
Filing Date:	27-MAR-2014
Time Stamp:	17:13:38
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	E20190EH13533494
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	Fee Worksheet (SB06)	fee-info.pdf	30437 f3ed604999b5cb7083a84aa42704c5ff484ebf0e	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	30437		

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	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,046
	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-001COA

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-001COD U.S. Patent Application 14/228,057; Office Action mailed 10/7/19	

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.**

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

Electronic Acknowledgement Receipt

EFS ID:	38201830
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	06-JAN-2020
Filing Date:	27-MAR-2014
Time Stamp:	15:03:47
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-001COA_IDS_Statement_1-6-20.pdf	18138 e36b27ffe7a0b7c7238019bddf4bc11c66d22359	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COA_IDS_1449_1-6-20.pdf	27783 a5b01162fd8b66dd3b15b0f9900c14978644865f	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	45921	

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.: 14/228,046 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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.

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: January 6, 2020

By: _____/Stephanie T. Vu /_____
Stephanie T. Vu (Reg. No. 73,063)
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415-248-2100 (Main)
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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.
14/228,046	03/27/2014	Thien Nguyen	INCEP-001COA	7700

138718 7590 01/10/2020

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

EXAMINER	
MAI, HAO D	

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
01/10/2020	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

Office Action Summary	Application No. 14/228,046	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 10/15/2019.

☐ 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) 2-16 and 19-22 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) 2-16 and 19-22 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: _____.

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 10/15/2019 has been entered.

Claim Rejections - 35 USC § 103

3. 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.

4. **Claims 2-8, 11-14, 16, and 19-22, are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable by Maycher et al. (WO 2011/014952) in view of Hirsch (2006/0063129).**

Regarding claim 21, Maycher et al. discloses a dental mouthpiece comprising a main body portion 20 configured as a pocket 29 having an interior open space 29 (Fig. 9; paragraphs 26-27) having a wall 26 with apertures 22 (Figs. 9; paragraphs 26-28). Maycher et al. further discloses the body portion 20 may be rectangular (Fig. 6; paragraph 40) in which the interior 29 would be defined by corresponding anterior and posterior walls connected at respective exterior edges thereof by a superior/side wall extending across a superior/side wall span and an

inferior/side wall extending across an inferior/side wall span between the anterior and posterior walls. As shown in Fig. 9, there are openings and/or apertures 22 disposed on the anterior, posterior, and superior/side walls 26; the apertures 22 extend through the wall 26 into the interior 29 of the pocket (Fig. 9).

Regarding the newly recited limitation(s), Maycher et al. disclose that the main body portion 20 may be rectangular (Fig. 6; paragraph 40), and thus the interior open space 29 would be defined by the defined shape of the anterior wall, the corresponding shape of the posterior wall, the superior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall, and the inferior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall (Fig. 6).

Maycher et al. discloses the dimension of a rectangular mouthpiece may be similar of the dimensions of the cylindrical/tubular mouthpiece (paragraph 40), failing to explicitly disclose the superior/side and inferior/side wall spans being less than a width of the anterior wall. Hirsch discloses a intraoral device 20 (Figs. 3-4) comprising a main body portion configured as a pocket having an interior defined by an anterior wall 48/50, and a posterior wall 50, wherein side walls 22 is less than a width of the anterior wall. It would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt Maycher's rectangular mouthpiece to have a superior/side wall span being less than a width of the anterior wall as taught by Hirsch in order to form a low-profile mouthpiece suitable to be fitted within the mouth.

Maycher fails to disclose a rectangular portion configured to connect to the main body a280 t one end and to connect a cheek retractor portion at another end. Hirsch discloses the mouthpiece 20 having a rectangle portion (isthmus 300 shown in Fig. 18A) connecting an end of the main body to a cheek retractor 420 (paragraphs 77-81). The rectangle isthmus portion area 300 has an anterior wall extending from the anterior wall of the main body 280 has a third set of perforations 410 (Fig. 18A). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Maycher by including a rectangular isthmus portion in

order to connect the main body to and forming a whale-tail shaped retractor portion as suitable shape for such retractor as taught by Hirsch

As to claims 2-6, Maycher et al.'s perforations 22 are shown being disposed on the anterior, posterior, and superior/side walls 26 and are spaced apart, thereby forming a mesh. As to claim 7, the opening 22 in the anterior wall is considered to be a slit along a longitudinal axis of the main body. As to claim 8, suction is provided at a suction connector 24 within the interior of the pocket to provide suction of fluids through the perforations 22 towards the suction connector (Fig. 1; paragraph 43).

As to claims 11-12, Maycher et al. fails to disclose a cheek retractor portion. Hirsch discloses a mouthpiece 20 comprising cheek retractor 420 having a surface that applies pressure when the dental mouthpiece is bent, wherein the pressure is based on resilience of a material from which the cheek retractor 420 is formed (paragraph 83). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Maycher et al. by incorporating a cheek retractor as taught by Hirsch in order to provide retraction of the cheek during a procedure within the mouth.

As to claims 13 and 16, Maycher et al. fails to disclose a stability bar and the anterior and posterior walls having different thicknesses. Hirsch discloses the posterior wall 48/50 may be thicker at 48 (Fig. 4, Fig. 8A). Such thicker area 48 of the posterior wall 48/50 is considered to be equivalent to the claimed stability bar (extra thickness) protruding from an interior surface of the posterior wall along the longitudinal axis of the main body and extending through at least part of the cheek retractor. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Maycher et al. by including a thicker central backbone area forming a stability bar as taught by Hirsch order to provide reinforcement to the mouthpiece.

As to claim 14, 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, Maycher et al. discloses the end product and the structures thereof as claimed as detailed above with all the essential portions forming the device as one piece. The burden is shifted to applicant to show an unobvious difference between Maycher et al.' device and the invention that would have resulted from the injection molding process.

As to claims 19-20, Maycher et al. fails to disclose a bite block portion. Hirsch discloses a detachable mouth prop 26 having a bite block portion 94 and a strap portion 100 corresponding to a plug 92 of the main body (Fig.2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include such detachable mouth prop to Maycher et al. in order to prop open the mouth during a treatment procedure as taught by Hirsch.

Regarding claim 22, Maycher et al. discloses all the elements as claimed as detailed above with respect to claim 21. Maycher et al. further discloses a suction connector portion 24 connected to one end of the main body portion; the suction connector portion 24 configured to connect a vacuum source 50 with the interior of the pocket within the main body portion. Maycher et al. fails to disclose a connection configured to connect the main body portion to a cheek retractor. . Hirsch discloses the mouthpiece 20 having a rectangle portion (isthmus 300 shown in Fig. 18A) connecting an end of the main body to a cheek retractor 420 (paragraphs 77-81). The rectangle isthmus portion area 300 has an anterior wall extending from the anterior wall of the main body 280 has a third set of perforations 410 (Fig. 18A). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Maycher by including a rectangular isthmus portion in order to connect the main body to and

forming a whale-tail shaped retractor portion as suitable shape for such retractor as taught by Hirsch

5. **Claims 9-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Maycher et al. in view of Hirsch, as applied to claim 21, and further in view of Riddle (1,471,207).**

Maycher/Hirsch discloses the invention substantially as claimed except for a bridge structure. Riddle discloses a saliva ejector tube having a bridge structure 5 protruding from an interior surface of a wall thereof and unattached to the opposite wall. The protruding bridge comprises a plurality of protrusions (waved wire) to keep the walls separated from one another during suction (Fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate such bridge into Maycher/Hirsch's device in order to prevent collapse when under suction pressure as explicitly taught by Riddle.

6. **Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maycher et al. view of Hirsch, and further in view of Sclafani (5,890,899).**

Maycher/ Hirsch discloses the invention substantially as claimed. Maycher discloses material used to form the device being flexible, high heat-resistant, as evidenced by disclosure of sterilization for reuse (paragraph 29). However, Maycher/Hirsch fails to disclose the material being silicone-base. Sclafani discloses a dental suction isolator device formed of silicone-based material (Figs. 1-9, column 8 lines 10-15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make Maycher/Hirsch ' device from silicone-based material as taught by Sclafani to be a known alternative suitable known material while yielding the same and/or predictable results.

Response to Arguments

7. Applicant's arguments regarding the newly recited limitation(s) have been considered but are found to be persuasive as having overcome Maycher in view of Black et al. since Black et al. fails to disclose the rectangular isthmus portion having apertures.

However, upon further consideration, new ground(s) of rejection under Maycher in view of Hirsch applies as detailed above. Maycher fails to disclose a rectangular portion configured to connect to the main body a280 t one end and to connect a cheek retractor portion at another end. Hirsch discloses the mouthpiece 20 having a rectangle portion (isthmus 300 shown in Fig. 18A) connecting an end of the main body to a cheek retractor 420 (paragraphs 77-81). The rectangle isthmus portion area 300 has an anterior wall extending from the anterior wall of the main body 280 has a third set of perforations 410 (Fig. 18A). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Maycher by including a rectangular isthmus portion in order to connect the main body to and forming a whale-tail shaped retractor portion as suitable shape for such retractor as taught by Hirsch.

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

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	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	11/03/2015	05/31/2016	11/01/2016	05/30/2017	12/26/2017	10/01/2018	07/09/2019	01/06/2020	
	1	✓	✓	✓	-	-	-	-	-	
	2	✓	✓	✓	✓	✓	✓	✓	✓	
	3	✓	✓	✓	✓	✓	✓	✓	✓	
	4	✓	✓	✓	✓	✓	✓	✓	✓	
	5	✓	✓	✓	✓	✓	✓	✓	✓	
	6	✓	✓	✓	✓	✓	✓	✓	✓	
	7	✓	✓	✓	✓	✓	✓	✓	✓	
	8	✓	✓	✓	✓	✓	✓	✓	✓	
	9	✓	✓	✓	✓	✓	✓	✓	✓	
	10	✓	✓	✓	✓	✓	✓	✓	✓	
	11	✓	✓	✓	✓	✓	✓	✓	✓	
	12	✓	✓	✓	✓	✓	✓	✓	✓	
	13	✓	✓	✓	✓	✓	✓	✓	✓	
	14	✓	✓	✓	✓	✓	✓	✓	✓	
	15	✓	✓	✓	✓	✓	✓	✓	✓	
	16	✓	✓	✓	✓	✓	✓	✓	✓	
	17	✓	✓	-	-	-	-	-	-	
	18	✓	✓	-	-	-	-	-	-	
	19	✓	✓	✓	✓	✓	✓	✓	✓	
	20	✓	✓	✓	✓	✓	✓	✓	✓	
	21			✓	✓	✓	✓	✓	✓	
	22			✓	✓	✓	✓	✓	✓	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043,046	11/03/2015	HDM
Update Search	05/31/2016	HDM
Update Search	10/03/2016	HDM
A61C 17/04, 0208	11/01/2016	HDM
Update Search	11/01/2016	HDM
Udpate Search	05/30/2017	HDM
Update Search	12/26/2017	HDM
Update Search	07/09/2019	HDM
Update Search	01/06/2020	HDM

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

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
433	93	11/03/2015	HDM

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

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor Search	11/03/2015	HDM
Review searches of parent case 14/100323	11/03/2015	HDM
Update Search	05/31/2016	HDM
Update Search	10/03/2016	HDM
Update Search	11/01/2016	HDM
Update Search	05/30/2017	HDM
Update Search	12/26/2017	HDM
Update Search	10/01/2018	HDM
Update Search	07/09/2019	HDM
Update Search	01/06/2020	HDM

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

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,046
	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-001COA

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 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	01/06/2020

*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.

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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/

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L4	76	(US-20080053434-$ or US-20080166684-$ or US-20090123886-$ or US-20060063129-$ or US-20090274991-$ or US-20140087328-$ or US-20160038348-$ or US-20140349249-$ or US-20130095450-$ or US-20040122352-$ or US-20120237894-$ or US-20060008764-$).did. or (US-3090122-$ 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-7611354-$ or US-3171203-$ or US-1122086-$ or US-4017975-$ or US-4167814-$ or US-5513986-$ or US-5890899-$ or US-D495799-$ or US-3768477-$ or US-3877691-$ or US-4718662-$ or US-3396468-$ or US-2111859-$ or US-2937445-$).did. or (US-4024642-$ or US-4425911-$ or US-6652276-$ or US-8556872-$ or US-5080587-$ or US-D360685-$ or US-D615203-$ or US-5762496-$ or US-5460626-$ or US-6068477-$ or US-2482116-$ or US-6241658-$ or US-6716029-$ or US-8740788-$ or US-3758950-$ or US-3864831-$ or US-5425637-$ or US-5441410-$ or US-2696047-$ or US-3101544-$ or US-D258531-$ or US-D261677-$ or US-4975057-$ or US-5009595-$ or US-5827061-$ or US-1891690-$ or US-2701916-$).did. or (US-4417874-$ or US-5931673-$ or US-5941873-$ or US-6988893-$ or US-2507938-$ or US-3101543-$).did. or (US-2937445-$ or US-2250285-$ or US-1471207-$ or US-3101544-$ or US-3101543-$).did.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2020/01/06 08:37
L6	3	l4 and isthmus	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2020/01/06 08:37
L8	82	suction and aperture and (intraoral or teeth or mouth) and isthmus	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	ADJ	OFF	2020/01/06 08:37

			IBM_TDB			
L9	7	433/91-92.ccls. and (connector same cheek)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2020/01/06 08:38
L10	1	433/91-92.ccls. and (isthmus)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2020/01/06 08:38

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L5	20	"Term Removed" or "Term Removed"	US-PGPUB; USPAT	ADJ	OFF	2020/01/06 08:37

1/6/2020 8:43:50 AM
C:\Users\hmai1\Documents\EAST\Workspaces\14228046.wsp

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,046
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COA

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-				
		US-				
		US-				
		US-				
		US-				
		US-				
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		US-				
		US-				
		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.

Substitute for Form 1449/PTO	*Complete if Known*	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,046
	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-001COA

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 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	

*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.

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

Electronic Acknowledgement Receipt

EFS ID:	38979636
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	27-MAR-2020
Filing Date:	27-MAR-2014
Time Stamp:	23:18:23
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-001COA_IDS_Statement_3-27-20.pdf	19122 31ef3d7c9349c4df63c9d251d1b5e98e5efd255d	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COA_IDS_1449_3-27-20.pdf	55074 9fdf950d4305d5672cced1b44e8de962bedbe46d	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	74196	

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.: 14/228,046 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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

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 *(use as many sheets as necessary)*	Application Number	14/228,046
	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-001COA

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

Electronic Acknowledgement Receipt

EFS ID:	39026512
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	01-APR-2020
Filing Date:	27-MAR-2014
Time Stamp:	13:35:08
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-001COA_IDS_Statement_4-1-20.pdf	18644 4b5629b36f49f482d0ef4017332099c2be51edc2	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COA_IDS_1449_4-1-20.pdf	27681 48dc9b8eda79fdb948c0d816766a0a0d13a13f6b	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):	348267		

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.

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New International Application Filed with the USPTO as a Receiving Office

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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

Serial No.: 14/228,046 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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.

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

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 14/228,046	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	07/01/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 2	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.	SLIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/TIMOTHY COLE/
*** 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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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S):	Nguyen et al.
APPLICATION NO.:	14/228,046
FILING DATE:	March 27, 2014
TITLE:	Intraoral Device with Mesh
ART UNIT:	3732
CONFIRM. NO.:	7700
ATTY.DKT.NO.:	INCEP-001COA

MAIL STOP AMENDMENT
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ALEXANDRIA, VA 22313-1450

AMENDMENT I

Examiner Mai:

In response to the office action dated January 10, 2020 (*Office Action*), please enter the following **amendments** to the **claims**, which commence on **page two**. **Applicant's summary of examiner interview** begins on **page eight**. The Applicants' **remarks** and **conclusion** appear beginning on **pages nine** and **fourteen**, respectively.

IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (cancelled)

2. (previously presented) The dental mouthpiece of claim 21, wherein the first set and the second set of perforations on the superior and inferior walls are spaced to comprise a mesh.

3. (previously presented) The dental mouthpiece of claim 21, wherein the anterior wall further comprises a fourth set of perforations.

4. (previously presented) The dental mouthpiece of claim 3, wherein the fourth set of perforations on the anterior wall are spaced to comprise a mesh.

5. (previously presented) The dental mouthpiece of claim 21, wherein the posterior wall further comprises one or more perforations.

6. (original) The dental mouthpiece of claim 5, wherein the perforations on the posterior wall are spaced to comprise a mesh.

7. (previously presented) The dental mouthpiece of claim 21, wherein the opening from the anterior wall to the pocket includes a slit along a longitudinal axis of the main body.

8. (previously presented) The dental mouthpiece of claim 21, wherein suction provided at a suction connector within the interior open space of the pocket provides suction of fluids through the perforations in the side wall into the interior open space of the pocket towards the suction connector.

9. (previously presented) The dental mouthpiece of claim 21 further comprising a bridge structure protruding from an interior surface of the posterior wall and unattached to the anterior wall, the protruding bridge structure comprising a plurality of protrusions collectively providing spaced contact points that keep the anterior wall separated from the posterior wall during suction.

10. (previously presented) The dental mouthpiece of claim 9, wherein suction provided at the suction connector within the interior open space of the pocket draws fluids through spaces between the protrusions of the bridge structure towards the suction connector.

11. (previously presented) The dental mouthpiece of claim 21, further comprising the cheek retractor portion, the cheek retractor having a surface that applies pressure when the dental mouthpiece is bent, wherein the pressure is based on resilience of a material from which the cheek retractor is formed.

12. (previously presented) The dental mouthpiece of claim 11, wherein the cheek retractor portion comprises an extension of the pocket, wherein a side wall of the extension comprises one or more perforations.

13. (previously presented) The dental mouthpiece of claim 11, further comprising a stability bar protruding from an interior surface of the posterior wall along the longitudinal axis of the main body and extending through at least part of the cheek retractor, wherein a thickness of the stability bar corresponds to resilience by which the cheek retractor portion applies pressure during bending.

14. (previously presented) The dental mouthpiece of claim 21, wherein the main body portion is formed by injection-molding as one piece.

15. (previously presented) The dental mouthpiece of claim 21, wherein a material from which the main body is formed is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

16. (original) The dental mouthpiece of claim 21, wherein the anterior wall and the posterior wall have different thicknesses.

17. (cancelled)

18. (cancelled)

19. (previously presented) The dental mouthpiece of claim 21, further comprising a detachable mouth prop, the detachable mouth prop comprising a bite block portion and a strap portion, wherein the bite block portion and the strap portion are injection-molded in one piece.

20. (previously presented) The dental mouthpiece of claim 21, wherein a bite block portion comprises an opening corresponding to a plug connected to the main body.

21. (currently amended) A dental mouthpiece comprising:

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

an anterior wall having a shape defined by an exterior edge, wherein the anterior wall includes an opening to the interior open space of the pocket,

a posterior wall having a shape corresponding to the defined shape of the anterior wall, wherein an exterior edge of the posterior wall shape corresponds to the exterior edge of the anterior wall,

a superior wall connecting the exterior edge of the anterior wall across a superior wall span to the corresponding exterior edge of the posterior wall on a first side, wherein at least part of the superior wall comprises a first set of perforations into the interior of the pocket, and wherein the superior wall span between the anterior wall and the posterior wall is less than a width of the anterior wall,

an inferior wall connecting the exterior edge of the anterior wall across an inferior wall span to the corresponding exterior edge of the posterior wall on a second side, wherein at least part of the inferior wall comprises a second set of perforations into the interior of the pocket, and wherein the inferior wall span between the anterior and the posterior wall is less than the width of the anterior wall, wherein a shape of the interior open space of the pocket is ~~defined~~ enclosed by and spans across the defined shape of the anterior wall, the corresponding shape of the posterior wall, the superior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall, and the inferior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall, and

a rectangular portion having an anterior wall extending from the anterior wall of the main body portion, the rectangular portion configured to connect to the main body at an end and to flexibly connect a cheek retractor portion at another end, wherein the anterior wall of the rectangular portion comprises a third set of perforations.

22. (currently amended) A dental mouthpiece comprising:

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

an anterior wall having a shape defined by a smooth exterior edge, wherein the anterior wall includes an opening to the interior open space of the pocket,

a posterior wall having a shape corresponding to the defined shape of the anterior wall, wherein a smooth exterior edge of the posterior wall shape corresponds to the smooth exterior edge of the anterior wall,

a superior wall connecting the smooth exterior edge of the anterior wall across a superior wall span to the corresponding smooth exterior edge of the posterior wall on a first side, wherein at least part of the superior wall comprises a first set of perforations, wherein the superior wall is perpendicular to the anterior wall and the posterior wall, and wherein the superior wall span is less than a width of the anterior wall, and

an inferior wall connecting the exterior edge of the anterior wall across an inferior wall span to the corresponding exterior edge of the posterior wall on a second side, wherein at least part of the inferior wall comprises a second set of perforations, wherein the inferior wall is perpendicular to the anterior wall and the posterior wall, and wherein the inferior wall span is less than the width of the anterior wall, wherein a shape of the interior open space of the pocket is ~~defined~~ enclosed by and spans across the anterior wall, the posterior wall, the superior wall, and the inferior wall; and

a suction connector portion connected to one end of the main body portion, the suction connector configured to connect a vacuum source with the interior of the pocket within the main body portion; and

a rectangular portion having an anterior wall extending from the anterior wall of the main body portion, the rectangular portion configured to flexibly connect the main body portion at a second end to a cheek retractor, wherein the second end is opposite to the one end of the main body portion, wherein the anterior wall of the rectangular portion comprises a third set of perforations.

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 the 103 reference, *Hirsch*, fails to disclose 'a first set of perforations into the interior of the pocket' on the superior wall and 'a second set of perforations into the interior of the pocket' on the inferior wall. Further, *Hirsch* fails to disclose 'interior open space of the pocket' that spans the inferior wall to superior wall.

In particular, the claimed 'main body portion' has an 'interior open space' that is enclosed by and spans across the distance between anterior and posterior walls, as well as spanning across the superior and inferior walls. The recited 'walls' therefore enclose an interior space through which suction can be applied consistently throughout, while maintaining the structural integrity of the main body shape and enclosed interior space during suction. In contrast, *Hirsch* includes subdivisions (*e.g.*, via a spine) within its interior, as well as fails to teach any defined walls spanning across set distances as does the claimed superior and inferior walls.

The Examiner agreed with the Applicant that the current amendments overcome the current grounds for rejections. The Applicant and the Applicant's representative thank the Examiner for his time and courtesy during the *Examiner Interview*.

REMARKS

Amendments to the Claims

Claims 2-10, 12-16, and 19-22 are currently pending. Claims 21 and 22 have been currently amended. Support for the amended claims can be found in at least paragraphs [0030], [0033]-[0036], and FIG 1A 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.

Rejection under 35 U.S.C. § 103

Claims 2-8, 11-14, 16, and 19-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable by *Maycher*(WO 2011/014952) in view of *Hirsch* (U.S. Patent Publication 2006/0063129). *Office Action*, 2. Claims 9-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Maycher* in view of *Hirsch*, as applied to claim 21, and further in view of *Riddle* (U.S. Patent 1,471,207). *Id.* at 6. Claim 15 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Maycher* in view of *Hirsch*, and further in view of Sclafani (U.S. Patent 5,890,899). *Id.* The Applicant respectfully disagrees and presents the following remarks.

Claim 21 has been currently amended to recite as follows (emphasis added):

- **a superior wall** connecting the exterior edge of the anterior wall across a superior wall span to the corresponding exterior edge of the posterior wall on a first side, wherein at least part of the superior wall comprises **a first set of perforations into the interior of the pocket,** and wherein the superior wall span between the anterior wall and the posterior wall **is less than a width of the anterior wall**,
- **an inferior wall** connecting the exterior edge of the anterior wall across an inferior wall span to the corresponding exterior edge of the posterior wall on a second side, wherein at least part of the inferior wall comprises **a second set of perforations into the interior of the pocket,** and wherein the inferior wall span between the anterior and the posterior wall **is less than the width of the anterior wall**, wherein a shape of **the interior open space of the pocket is enclosed by and spans across the defined shape of the anterior wall,** the corresponding shape of the posterior wall, the superior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior

wall, and the inferior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall,

Independent claim 22 has been similarly amended to incorporate the same language as in amended claim 21. The recited limitations find support in the *Specification*, which describes "an anterior wall facing the front of the mouth" and "a posterior wall facing the back of the mouth" connected by "a superior wall" that "rests against a roof of a patient's mouth" and "an inferior wall" that "rests against the floor of the patient's mouth." *Specification* at [0033]. These four sides of the walls connect together to form "a body that is at least partially closed." *Id.*; *see also id.* at [0047] (noting "removal of water, saliva, and debris from the at least **partially enclosed [] main body through a single, large evacuation conduit** within the suction connector portion"). The superior wall and the inferior wall include "a plurality of holes 140 distributed along the superior and inferior sides of the anterior and posterior walls," forming a "mesh along the walls of the superior and inferior edges." *Id.* at [0034].

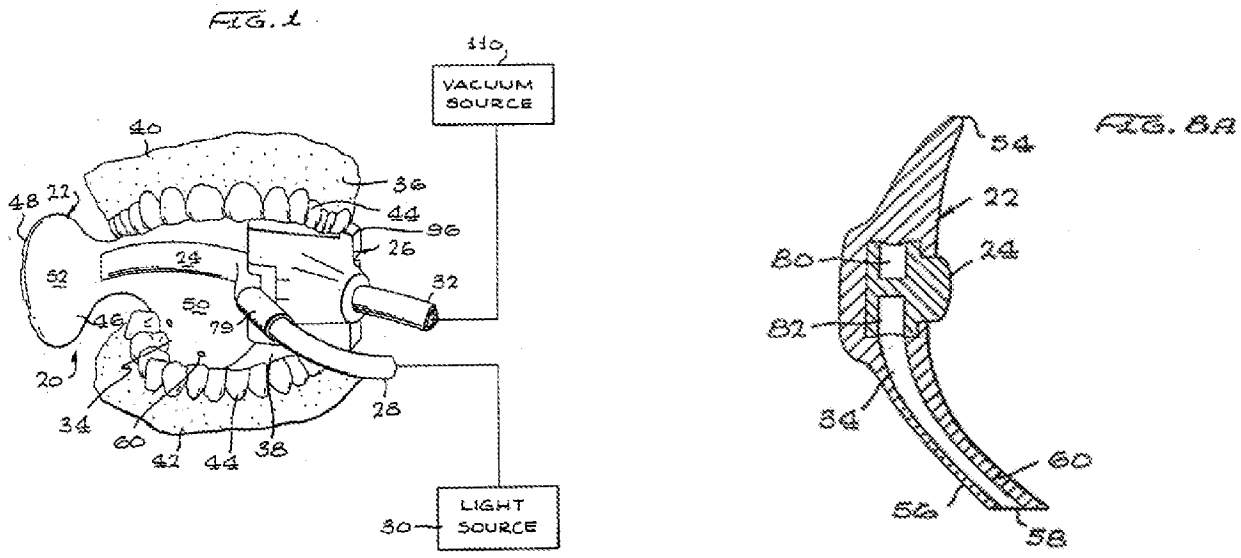
The *Office Action* admits that *Maycher* does not disclose *inter alia* "the superior/side and inferior/side wall spans being less than a width of the anterior wall" but relies on *Hirsch* for this disclosure. *Office Action* at 3.

The "side walls 22" cited as being "less than a width of the anterior wall" in the *Office Action* refers to element 22, "cheek retractor 22" at the end of a main body and does not constitute a wall. *Id.*; *Hirsch,* at [0049], FIG. 1. Even assuming *arguendo* that element 54 in *Hirsch* which discloses "an upper roof portion" is similar to a superior wall in claim 1, FIG. 8A of *Hirsch* discloses that the element 54 comes to a point and **does not have an interior space** within. Thus, *Hirsch* fails to disclose 'a superior wall' and 'an inferior wall' which define the shape of the 'interior open space of the pocket.'

Even an alternate embodiment of *Hirsch* as seen in FIG. 18A below does not disclose 'superior' and 'inferior' walls. Elements 350 and 360 in *Hirsch* are "upper gap" and "lower gap" along the sides, which are open gaps, not connecting walls that enclose a space. *Hirsch,*

[0083]-[0084]. Thus, *Hirsch* fails to disclose 'a superior wall' which has a span 'less than a width of the anterior wall' and define the shape of 'the interior open space of the pocket' along with anterior wall, posterior wall, and inferior wall.' The specific teachings regarding "open gaps" further teach away from the claimed enclosed interior space.

HIRSCH



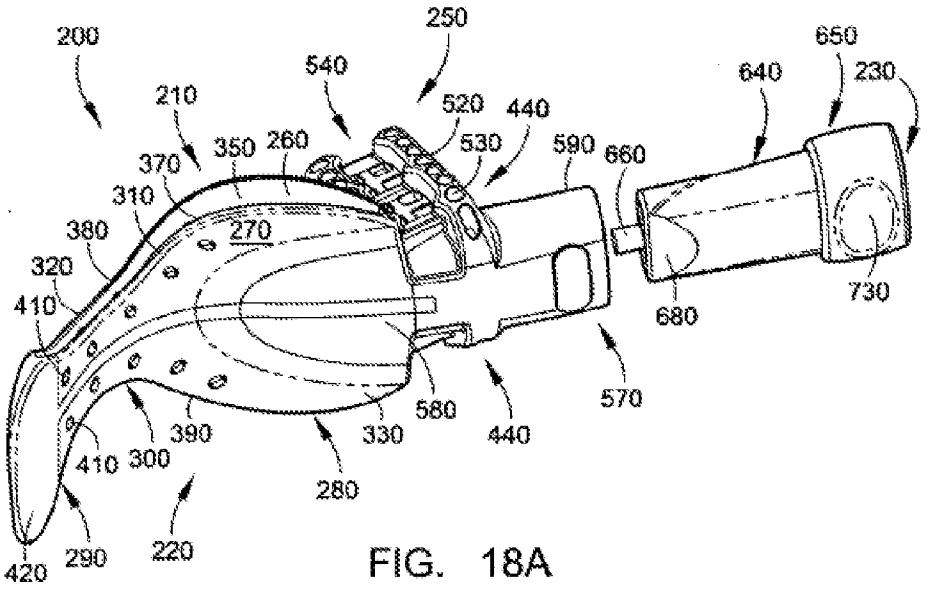
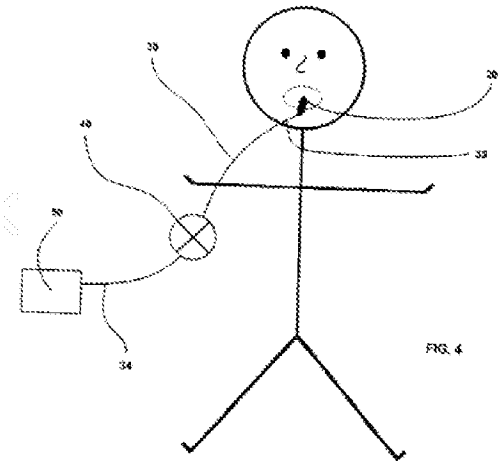
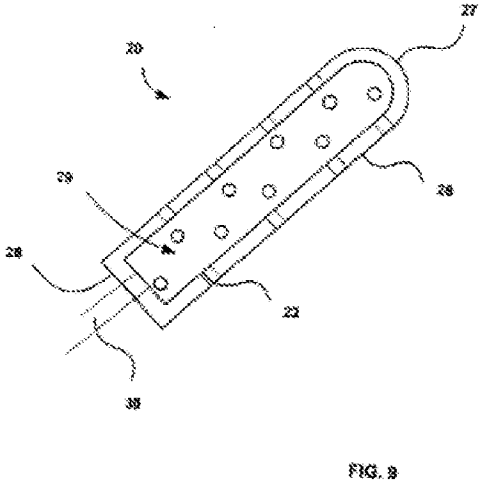


FIG. 18A

Moreover, there is no motivation to combine *Maycher* and *Hirsch*. *Maycher* discloses embodiments of the "intraoral tip 20" that are "circular," "square," "cylindrical," "rectangular, ovular, and bulbous" which describe geometric shapes regardless of the contours of the mouth. *Maycher*, [0040], FIGS. 4-9 (Figs, 4 and 9 presented below):

MAYCHER





Macyher's embodiments of the "intraoral tip 20" are not described in relations to any 'anterior' that refers to "facing front of the mouth" and 'posterior' that refers to "facing back of the mouth," 'superior' that refers to "the side that rests against a roof of a patient's mouth when placed therein" and 'inferior' that refers to "side that rests against the floor of the patient's mouth." *Specification* at [0033].

In contrast, *Hirsch* discloses an intraoral device that has specific parts with distinct shapes that follow the contour of a mouth of a patient. "The lower front flap 330 and lower rear flap 340" in FIG. 18A are "configured to rest or flex against the lingual area of mouth or tongue" and "the tongue and floor of the patient's mouth span the lower gap 360 and forms a seal along the lower edges 390, 400, creating a sealed lower internal evacuation channel in the lower gap 360." *Hirsch* at [0084]. Such close contact in the outer surfaces of the device with

the inside of a patient's mouth would render the "intraoral tip 20" of *Maycher* uncomfortable to use when the tip is "circular," "square," or "cylindrical," if not inoperable, because not enough space would exist between the "intraoral tip 20" and the patient's mouth to remove fluids. *Maycher* at [0040]. Moreover, as *Hirsch* fail to teach the claimed superior and inferior walls that span across the distance between the anterior and posterior wall, combining *Maycher* with *Hirsch* would not result in what is claimed.

Although the Examiner suggests that *Maycher* could be combined with *Hirsch*, there is no particular motivation for why *Maycher* would be modified in the particular manner proposed so as to teach what is claimed. There is no reason, for example, why a person of ordinary skill in the art looking to provide a "retractor as taught by *Hirsch*" would just not use the existing mouthpiece of *Hirsch* altogether.

Riddle and *Sclafani* in cited in relation to dependent claims cannot cure the deficiencies of *Hirsch* and *Maycher* with regards to the independent claims.

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.

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. A Notice of Allowance is respectfully requested.

If the Examiner has any questions regarding the case, the Examiner is invited to contact the Applicant's undersigned representative.

Respectfully submitted,
Dryshield, LLC

July 1, 2020

By: /Ruby Chung/

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Doc Code: COVID-19
Document Description: Request for extension under COVID-19 PTO/SB/449 (04-20)

STATEMENT OF DELAY DUE TO COVID-19 OUTBREAK

(Page 1 of 1)

Applicant or Patent Owner	Dryshield, LLC		
Application No. or Patent No.	14/228,046	Filing Date or Issue Date	3-27-2014
Title of Invention	INTRAORAL DEVICE WITH MESH		

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Signature	/Ruby Chung/	Date	July 1, 2020
Name (Print or Type)	Ruby Chung	Practitioner Registration Number	76809

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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.

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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 the General Services Administration (GSA) as part of that agency's responsibility to recommend improvements in records management practices and programs, under the authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing the inspection of records for this purpose and any other relevant (i.e., GSA or Department of Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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EFS ID:	39892919
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Ruby Lim Chung
Filer Authorized By:	
Attorney Docket Number:	INCEP-001COA
Receipt Date:	01-JUL-2020
Filing Date:	27-MAR-2014
Time Stamp:	19:48:40
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-001COA_Res_I_7-1-20.pdf	714545 89546de6692e66fec1a392826536fd44dfecfeb7	yes	13

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Applicant summary of interview with examiner	2	6
	Applicant summary of interview with examiner	7	7
	Applicant Arguments/Remarks Made in an Amendment	8	13

Warnings:					
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Warnings:					
Information:					
		Total Files Size (in bytes):	833654		

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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Substitute for Form 1449/PTO	*Complete if Known*	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,046
	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-001COA

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-001COD U.S. Patent Application 14/228,057; Final Office Action mailed 5/19/20	

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:	40308248
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	18-AUG-2020
Filing Date:	27-MAR-2014
Time Stamp:	18:13:00
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	Transmittal Letter	INCEP-001COA_IDS_Statement_8-18-20.pdf	98161 84283eb93fab05e2d938961af8395f28861410c9	no	2

Warnings:

Information:					
2	Transmittal Letter	INCEP-001COA_List_of_Copending_Apps_8-18-20.pdf	100601 236361904acb6933abd2f9a8916c5fb1a322a44a	no	1
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COA_IDS_1449_8-18-20.pdf	185867 2e15ddc437ae8c1ced0cebb1903b1d6a33c7d0f5	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	384629	

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.: 14/228,046 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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

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: August 18, 2020

By: _____/Ruby L. Chung/_____
Ruby L. Chung (Reg. No. 76,809)
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772

Examiner: Hao D. Mai

Serial No.: 14/228,046

Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700

Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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
	16/870,745	INCEP-005	Thien Nguyen	DENTAL MOUTHPIECE	May 8, 2020
Examiner's Signature:					Date:

Respectfully submitted,
POLSINELLI LLP

Dated: August 18, 2020

By: _____/Ruby L. Chung/_____
Ruby L. Chung (Reg. No. 76,809)
Polsinelli LLP
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San Francisco, CA 94111
415-248-2100 (Main)
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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	14/228,046
				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-001COA

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.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) 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	14/228,046
	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-001COA

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/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.

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

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.

Form PCT/ISA/210 (first sheet) (July 2019)

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:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
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-*-

WRITTEN OPINION OF THE
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.

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 20/32228

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-*-

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 20/32228

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.

Electronic Acknowledgement Receipt

EFS ID:	41076465
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	10-NOV-2020
Filing Date:	27-MAR-2014
Time Stamp:	18:17:52
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-001COA_IDS_Statement_11-10-20.pdf	98158 761117bb6d4890f2c9be7503d5f0540eead4580e	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COA_IDS_1449_11-10-20.pdf	223346 d155e8cd7c3e03210d3ee3dfb49c0caae2ea5891	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Non Patent Literature	PCTUS2020032228_SearchReport_and_WrittenOpinion_8-12-20.pdf	214171 deb3ae7e4c08b757cb43ee6a74d841aba69b704c	no	8
Warnings:					
Information:					
			Total Files Size (in bytes):	535675	

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.: 14/228,046 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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

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 10, 2020

By: _____/Ruby L. Chung/_____
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UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,046	03/27/2014	Thien Nguyen	INCEP-001COA	7700

138718 7590 11/27/2020

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

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
11/27/2020	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

Office Action Summary	Application No. 14/228,046	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 07/01/2020.

☐ 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) 2-16 and 19-22 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) 2-16 and 19-22 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: _____.

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(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.

3. **Claims 2-8, 11-14, 16, and 19-22, are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable by Maycher et al. (WO 2011/014952) in view of Hirsch (2006/0063129).**

Regarding claim 21, Maycher et al. discloses a dental mouthpiece comprising a main body portion 20 configured as a pocket 29 having an interior open space 29 (Fig. 9; paragraphs 26-27) having a wall 26 with apertures 22 (Figs. 9; paragraphs 26-28). Maycher et al. further discloses the body portion 20 may be rectangular (Fig. 6; paragraph 40) in which the interior 29 would be defined by corresponding anterior and posterior walls connected at respective exterior edges thereof by a superior/side wall extending across a superior/side wall span and an inferior/side wall extending across an inferior/side wall span between the anterior and posterior walls. As shown in Fig. 9, there are openings and/or apertures 22 disposed on the anterior, posterior, and superior/side walls 26; the apertures 22 extend through the wall 26 into the interior 29 of the pocket (Fig. 9).

Regarding the newly recited limitation(s), Maycher et al.'s Fig. 9 clearly show that the main body portion includes the interior open space 29, applicable to all shapes of the main body

portion (Figs. 5-7); and a shape of the interior open space 29 is enclosed by and spans across the defined shape of the enclosing walls of the main body.

Maycher et al. discloses the dimension of a rectangular mouthpiece may be similar of the dimensions of the cylindrical/tubular mouthpiece (Fig. 6-9; paragraph 40). Although it is assumed that Maycher et al.'s main body as shown in Figs. 6 and 7 is low profile or flat paddle-shaped, Maycher et al. thus fails to explicitly disclose the superior/side and inferior/side wall spans being less than a width of the anterior wall. **Hirsch** discloses a intraoral device 20 (Figs. 3-4) comprising a main body portion configured as a pocket having an interior defined by an anterior wall 48/50, and a posterior wall 50, wherein side walls 22 is less than a width of the anterior wall. It would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt Maycher's rectangular mouthpiece to have a superior/side wall span being less than a width of the anterior wall as taught by Hirsch in order to form a low-profile mouthpiece suitable to be fitted within the mouth.

Maycher fails to disclose a rectangular portion configured to connect to the main body to one end and to connect a cheek retractor portion at another end. **Hirsch** discloses the mouthpiece 20 having a rectangle portion (isthmus 300 shown in Fig. 18A) connecting an end of the main body 20 to a cheek retractor 420 (Fig. 18A; paragraphs 77-81). The rectangle isthmus portion area 300 has an anterior wall extending from the anterior wall of the main body 280 has a third set of perforations 410 (Fig. 18A). Regarding the newly recited limitation(s) "flexibly connect", note that Hirsch discloses such isthmus 300 to be of soft, flexible material (paragraph 45), thus such isthmus/rectangle portion is considered to "flexible connect" to the cheek retractor 420 (Fig. 18A).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Maycher by including a rectangular isthmus portion in order to connect the

main body to and forming a whale-tail shaped retractor portion as suitable shape for such retractor as taught by Hirsch.

As to claims 2-6, Maycher et al.'s perforations 22 are shown being disposed on the anterior, posterior, and superior/side walls 26 and are spaced apart, thereby forming a mesh. As to claim 7, the opening 22 in the anterior wall is considered to be a slit along a longitudinal axis of the main body. As to claim 8, suction is provided at a suction connector 24 within the interior of the pocket to provide suction of fluids through the perforations 22 towards the suction connector (Fig. 1; paragraph 43).

As to claims 11-12, Maycher et al. fails to disclose a cheek retractor portion. Hirsch discloses a mouthpiece 20 comprising cheek retractor 420 having a surface that applies pressure when the dental mouthpiece is bent, wherein the pressure is based on resilience of a material from which the cheek retractor 420 is formed (paragraph 83). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Maycher et al. by incorporating a cheek retractor as taught by Hirsch in order to provide retraction of the cheek during a procedure within the mouth.

As to claims 13 and 16, Maycher et al. fails to disclose a stability bar and the anterior and posterior walls having different thicknesses. Hirsch discloses the posterior wall 48/50 may be thicker at 48 (Fig. 4, Fig. 8A). Such thicker area 48 of the posterior wall 48/50 is considered to be equivalent to the claimed stability bar (extra thickness) protruding from an interior surface of the posterior wall along the longitudinal axis of the main body and extending through at least part of the cheek retractor. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Maycher et al. by including a thicker central backbone area forming a stability bar as taught by Hirsch order to provide reinforcement to the mouthpiece.

As to claim 14, 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, Maycher et al. discloses the end product and the structures thereof as claimed as detailed above with all the essential portions forming the device as one piece. The burden is shifted to applicant to show an unobvious difference between Maycher et al.' device and the invention that would have resulted from the injection molding process.

As to claims 19-20, Maycher et al. fails to disclose a bite block portion. Hirsch discloses a detachable mouth prop 26 having a bite block portion 94 and a strap portion 100 corresponding to a plug 92 of the main body (Fig.2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include such detachable mouth prop to Maycher et al. in order to prop open the mouth during a treatment procedure as taught by Hirsch.

Regarding claim 22, Maycher et al. discloses all the elements as claimed as detailed above with respect to claim 21. Maycher et al. further discloses a suction connector portion 24 connected to one end of the main body portion; the suction connector portion 24 configured to connect a vacuum source 50 with the interior of the pocket within the main body portion. Maycher et al. fails to disclose a connection configured to connect the main body portion to a cheek retractor. Hirsch discloses the mouthpiece 20 having a rectangle portion (isthmus 300 shown in Fig. 18A) connecting an end of the main body to a cheek retractor 420 (paragraphs 77-81). The rectangle isthmus portion area 300 has an anterior wall extending from the anterior

wall of the main body 280 has a third set of perforations 410 (Fig. 18A). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Maycher by including a rectangular isthmus portion in order to connect the main body to and forming a whale-tail shaped retractor portion as suitable shape for such retractor as taught by Hirsch

4. **Claims 9-10 rejected under 35 U.S.C. 103(a) as being unpatentable over Maycher et al. in view of Hirsch, as applied to claim 21, and further in view of Riddle (1,471,207).**

Maycher/Hirsch discloses the invention substantially as claimed except for a bridge structure. Riddle discloses a saliva ejector tube having a bridge structure 5 protruding from an interior surface of a wall thereof and unattached to the opposite wall. The protruding bridge comprises a plurality of protrusions (waved wire) to keep the walls separated from one another during suction (Fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate such bridge into Maycher/Hirsch's device in order to prevent collapse when under suction pressure as explicitly taught by Riddle.

5. **Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maycher et al. view of Hirsch, and further in view of Sclafani (5,890,899).**

Maycher/ Hirsch discloses the invention substantially as claimed. Maycher discloses material used to form the device being flexible, high heat-resistant, as evidenced by disclosure of sterilization for reuse (paragraph 29). However, Maycher/Hirsch fails to disclose the material being silicone-base. Sclafani discloses a dental suction isolator device formed of silicone-based material (Figs. 1-9, column 8 lines 10-15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make Maycher/Hirsch ' device from silicone-

based material as taught by Sclafani to be a known alternative suitable known material while yielding the same and/or predictable results.

Response to Arguments

6. Applicant's arguments regarding the newly recited limitation(s) have been considered but are not found to be persuasive as having overcome Maycher in view of Hirsch.

Applicant argues that Hirsch does not have an interior open space as claimed. However, note that the primary reference Maycher already discloses the open interior space as claimed (see Maycher Fig. 9). Maycher et al.'s main body as shown in Figs. 6 and 7 is only implicit that the main body has a low profile or flat paddle-shape, Maycher et al. thus fails to explicitly disclose the superior/side and inferior/side wall spans being less than a width of the anterior wall. Therefore, Hirsch was relied upon as a secondary reference for its low profile or flat shape having the superior/side and inferior/side wall spans being less than a width of the anterior wall as claimed. Adapting Hirsch's flat/low profile shape to Maycher does not take away Maycher's open interior space.

In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references (modifying Maycher to have Hirsch's low/flat-profile shape and cheek retractor), the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, the motivation is found in Hirsch: it is clear that Hirsch teaches an improved shape of the mouth piece in that the shape follows the contour of a mouth of the patient, and that the cheek

retractor is for retracting. Therefore, one of ordinary skill in the art would have been motivated to adapt Hirsch's improved shape and the cheek retractor onto Maycher's mouthpiece.

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
	14/228,046	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043,046	11/03/2015	HDM
Update Search	05/31/2016	HDM
Update Search	10/03/2016	HDM
A61C 17/04, 0208	11/01/2016	HDM
Update Search	11/01/2016	HDM
Udpate Search	05/30/2017	HDM
Update Search	12/26/2017	HDM
Update Search	07/09/2019	HDM
Update Search	01/06/2020	HDM

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

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
433	93	11/03/2015	HDM

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

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor Search	11/03/2015	HDM
Review searches of parent case 14/100323	11/03/2015	HDM
Update Search	05/31/2016	HDM
Update Search	10/03/2016	HDM
Update Search	11/01/2016	HDM
Update Search	05/30/2017	HDM
Update Search	12/26/2017	HDM
Update Search	10/01/2018	HDM
Update Search	07/09/2019	HDM
Update Search	01/06/2020	HDM
Update Search	11/21/2020	HDM

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

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	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	11/03/2015	05/31/2016	11/01/2016	05/30/2017	12/26/2017	10/01/2018	07/09/2019	01/06/2020	11/21/2020
	1	✓	✓	✓	-	-	-	-	-	-
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5	✓	✓	✓	✓	✓	✓	✓	✓	✓
	6	✓	✓	✓	✓	✓	✓	✓	✓	✓
	7	✓	✓	✓	✓	✓	✓	✓	✓	✓
	8	✓	✓	✓	✓	✓	✓	✓	✓	✓
	9	✓	✓	✓	✓	✓	✓	✓	✓	✓
	10	✓	✓	✓	✓	✓	✓	✓	✓	✓
	11	✓	✓	✓	✓	✓	✓	✓	✓	✓
	12	✓	✓	✓	✓	✓	✓	✓	✓	✓
	13	✓	✓	✓	✓	✓	✓	✓	✓	✓
	14	✓	✓	✓	✓	✓	✓	✓	✓	✓
	15	✓	✓	✓	✓	✓	✓	✓	✓	✓
	16	✓	✓	✓	✓	✓	✓	✓	✓	✓
	17	✓	✓	-	-	-	-	-	-	-
	18	✓	✓	-	-	-	-	-	-	-
	19	✓	✓	✓	✓	✓	✓	✓	✓	✓
	20	✓	✓	✓	✓	✓	✓	✓	✓	✓
	21			✓	✓	✓	✓	✓	✓	✓
	22			✓	✓	✓	✓	✓	✓	✓

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,046
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COA

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-	2001/0008752	7/19/2001	Hirsch et al.	
		US-	2017/0156832	6/8/2017	Reyes	
		US-				
		US-				
		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

Examiner Signature	/Hao D Mai/	Date Considered	11/21/2020

*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). [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	14/228,046
	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-001COA

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/US2020/032228 International Search Report and Written Opinion dated 8/12/20	

Examiner Signature	/Hao D Mai/	Date Considered	11/21/2020

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Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
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Attorney Docket Number	INCEP-001COA

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-				
		US-				
		US-				
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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	11/21/2020

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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	14/228,046
	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-001COA

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 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	11/21/2020

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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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Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application Number	14/228,046
(use as many sheets as necessary)	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-001COA

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		Brazilian Patent Application No. BR1120140116377 Preliminary Office Action 1/7/20	

Examiner Signature	/Hao D Mai/	Date Considered	11/21/2020

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	77	(US-20080053434-$ or US-20080166684-$ or US-20090123886-$ or US-20060063129-$ or US-20090274991-$ or US-20140212841-$ or US-20140087328-$ or US-20160038348-$ or US-20140349249-$ or US-20130095450-$ or US-20040122352-$ or US-20120237894-$ or US-20060008764-$).did. or (US-3090122-$ 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-7611354-$ or US-3171203-$ or US-1122086-$ or US-4017975-$ or US-4167814-$ or US-5513986-$ or US-5890899-$ or US-D495799-$ or US-3768477-$ or US-3877691-$ or US-4718662-$ or US-3396468-$ or US-2111859-$ or US-2937445-$).did. or (US-4024642-$ or US-4425911-$ or US-6652276-$ or US-8556872-$ or US-5080587-$ or US-D360685-$ or US-D615203-$ or US-5762496-$ or US-5460626-$ or US-6068477-$ or US-2482116-$ or US-6241658-$ or US-6716029-$ or US-8740788-$ or US-3758950-$ or US-3864831-$ or US-5425637-$ or US-5441410-$ or US-2696047-$ or US-3101544-$ or US-D258531-$ or US-D261677-$ or US-4975057-$ or US-5009595-$ or US-5827061-$ or US-1891690-$ or US-2701916-$).did. or (US-4417874-$ or US-5931673-$ or US-5941873-$ or US-6988893-$ or US-2507938-$ or US-3101543-$).did. or (US-2937445-$ or US-2250285-$ or US-1471207-$ or US-3101544-$ or US-3101543-$).did.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2020/11/21 07:37
L3	3,941	A61C17/04,08,0208.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2020/11/21 07:38
L4	0	A61C17/04,08,0208.cpc. and (collapse with prvent$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2020/11/21 07:38

L5	20	A61C17/04,08,0208.cpc. and (collapse with prevent$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2020/11/21 07:39
L6	159	A61C17/04,08,0208.cpc. and (tongue or cheek) and (suction or suck$3) and mouth and (hollow)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2020/11/21 07:39
L7	2	(("20010008752") or ("20170156832")).PN.	US-PGPUB; USPAT	OR	OFF	2020/11/21 07:44

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	19	"Term Removed" or "Term Removed"	US-PGPUB; USPAT	ADJ	OFF	2020/11/21 07:37

11/21/2020 7:45:34 AM
C:\Users\hmai1\Documents\EAST\Workspaces\14228046.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	14/228,046
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COA

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-001COD U.S. Patent Application 14/228,057; Final Office Action mailed 5/19/20	

Examiner Signature	/Hao D Mai/	Date Considered	11/21/2020

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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	14/228,046
		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-001COA

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		Docket No. INCEP-001COD U.S. Patent Application 14/228,057; Office Action mailed 10/7/19	

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Alexandria, Virginia 22313-1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,046	03/27/2014	Thien Nguyen	INCEP-001COA	7700

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

Applicant-Initiated Interview Summary	**Application No.** 14/228,046	**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	Attorney of Record	

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 a second wall..." among other amendments were discussed. At preliminary review, the proposed amendments appear as would overcome the current ground(s) of rejection under Maycher in view of Hirsch.

/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.

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 14/228,046	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 $80 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $420 =	
☐ 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	01/21/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	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".	/ANGELONA D JONES/
*** 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.

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	14228046
Filing Date	27-Mar-2014
First Named Inventor	Thien Nguyen
Attorney Docket Number	INCEP-001COA
Title of Invention	INTRAORAL DEVICE WITH MESH

☒ 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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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 Chung/
Name	Ruby 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:	14228046
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH MESH
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Ruby Lim Chung/Cheri Houle
Attorney Docket Number:	INCEP-001COA

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.: 14228046

Filing Date: 27-Mar-2014

Applicant/Patent under Reexamination: Nguyen

Electronic Terminal Disclaimer filed on January 21, 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:	41711095
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	21-JAN-2021
Filing Date:	27-MAR-2014
Time Stamp:	18:22:05
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	E20211KI22011785
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 1.21 (Miscellaneous fees and charges)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.19 (Document supply fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

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

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	33416 645ae523b504ec1fff5e942b5c37138f3b50cba7	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30067 2cb8bff593eb2e93bf42bac02de19876c6431f5d	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	63483		

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.

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-001COA	14/228,046	03-27-2014
First Named Inventor:	**Title:**	
Thien Nguyen	INTRAORAL DEVICE WITH MESH	

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
/Ruby Chung/	January 21, 2021
Name (Print/Typed) Ruby Chung	**Practitioner Registration No.** 76809

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.

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.

REMARKS

Amendments to the Claims

Claims 2-10, 12-16, and 19-22 are currently pending. Claims 2-10, 13, 16, 21, and 22 have been currently amended. New claim 23 is 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.

Rejection under 35 U.S.C. § 103

Claims 2-8, 11-14, 16, and 19-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable by *Maycher* (WO 2011/014952) in view of *Hirsch* (U.S. Patent Publication 2006/0063129). *Office Action*, 2. Claims 9-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Maycher* in view of *Hirsch*, as applied to claim 21, and further in view of *Riddle* (U.S. Patent 1,471,207). *Id.* at 6. Claim 15 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Maycher* in view of *Hirsch*, and further in view of *Sclafani* (U.S. Patent 5,890,899). *Id.* The Applicant respectfully traverses.

Claim 21 has been currently amended to recite as follows (emphasis added):

> second wall comprising **a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall** and substantially extending a wall span between the first wall and the second wall, wherein the bridge structure is not attached to the first wall, wherein the protrusions of the bridge structure protrude from the interior surface of the second wall in **a wave shape comprising one or more crests and one or more troughs**

Independent claim 22 and new claim 23 similarly recite such a 'bridge structure.' 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:

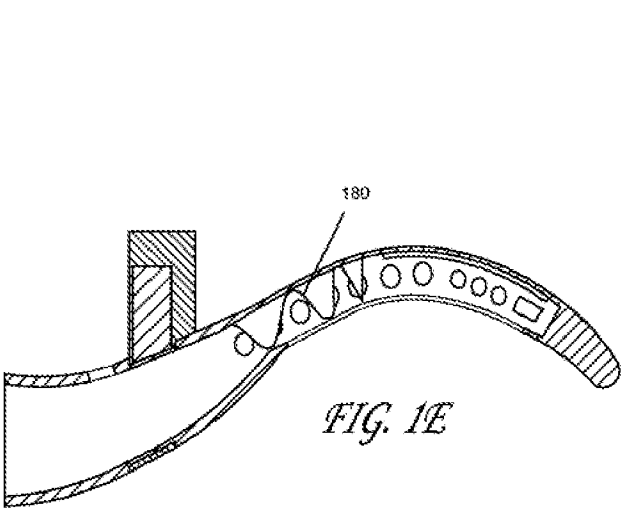


FIG. 1E

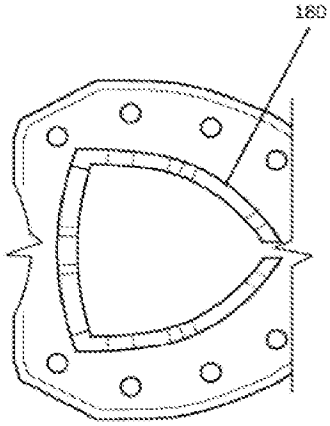


FIG. 5

Maycher is completely silent regarding any 'bridge structure' that 'protrud[es] from an interior surface of the second wall' and that includes 'protrusions' in a 'wave shape' of 'crests' and 'troughs.' That is because *Maycher* fails to disclose ***any*** protrusions on the interior surface of the "intraoral tip 20" that extends towards "a cavity 29." *Maycher,* [0026]. The mouthpiece of *Maycher* is illustrated in FIG. 9 (provided below)

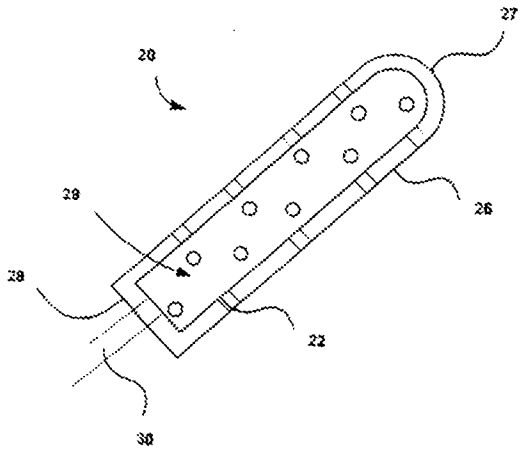


FIG. 9

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.

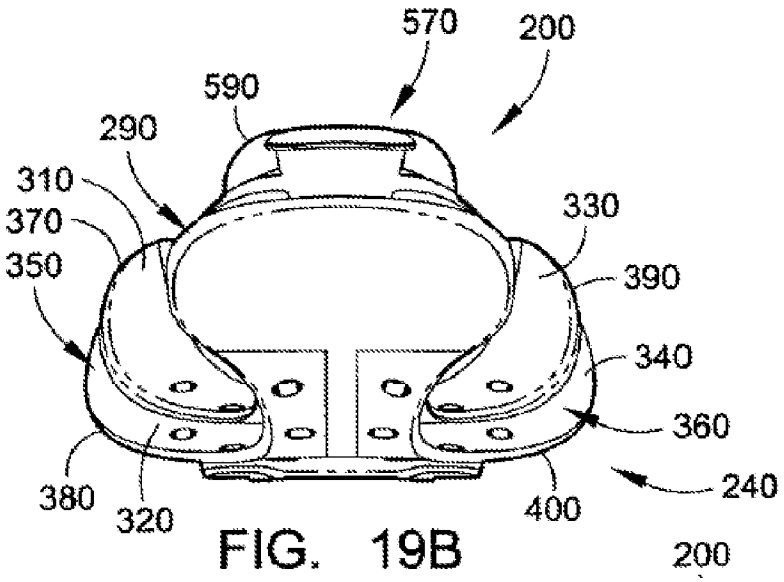


FIG. 19B

Thus, *Maycher* 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 and substantially extending a wall span between the first wall and the second wall, wherein the bridge structure is not attached to the first wall, wherein the protrusions of the bridge structure protrude from the interior surface of the second wall in a wave shape comprising one or more crests and one or more troughs' as claimed.

Riddle and *Sclafani* in cited in relation to dependent claims cannot cure the deficiencies of *Hirsch* and *Maycher* with regards to the independent claims.

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.

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. A Notice of Allowance is respectfully requested.

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 21, 2021

By: /Ruby Chung/

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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.

IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (cancelled)

2. (currently amended) The dental mouthpiece of claim 21, wherein the ~~first set and the second set~~ plurality of perforations on the ~~superior and inferior walls~~ main body portion are spaced to comprise a mesh.

3. (currently amended) The dental mouthpiece of claim 21, wherein the ~~anterior~~ first wall of the main body portion further comprises a fourth set of perforations.

4. (currently amended) The dental mouthpiece of claim 3, wherein the fourth set of perforations on the ~~anterior~~ first wall of the main body portion are spaced to comprise a mesh.

5. (currently amended) The dental mouthpiece of claim 21, wherein the ~~posterior~~ second wall of the main body portion further comprises one or more perforations.

6. (currently amended) The dental mouthpiece of claim 5, wherein the perforations on the ~~posterior~~ second wall of the main body portion are spaced to comprise a mesh.

7. (currently amended) The dental mouthpiece of claim 21, wherein the opening from the ~~anterior~~ first wall of the main body portion to the pocket includes a slit along a longitudinal axis of the main body.

8. (currently amended) The dental mouthpiece of claim 21, ~~wherein suction provided at~~ further comprising a suction connector ~~within~~ that connects to the interior open space of the pocket, the suction connector configured to connect to a vacuum source that provides suction of fluids through one or more of the perforations ~~in the side wall~~ into the interior open space of the pocket towards the suction connector.

9. (currently amended) The dental mouthpiece of claim 21, ~~further comprising a~~ wherein the bridge structure ~~protruding from an interior surface of the posterior wall and unattached to the anterior wall, the protruding bridge structure comprising a~~ further includes plurality of protrusions that collectively ~~providing~~ provide spaced contact points that keep the ~~anterior~~ first wall of the main body portion separated from the ~~posterior~~ second wall of the main body portion during suction.

10. (currently amended) The dental mouthpiece of claim 9, wherein ~~suction provided at the suction connector within the interior open space of the pocket draws fluids through~~ spaces between the protrusions of the bridge structure allow fluids within the interior open space of the pocket to be drawn therethrough towards ~~the suction connector~~ a vacuum source that provides suction.

11. (previously presented) The dental mouthpiece of claim 21, further comprising the cheek retractor portion, the cheek retractor having a surface that applies pressure when the dental mouthpiece is bent, wherein the pressure is based on resilience of a material from which the cheek retractor is formed.

12. (cancelled)

13. (currently amended) The dental mouthpiece of claim 11, further comprising a stability bar protruding from an interior surface of the ~~posterior~~ second wall of the main body portion along [[the]] a longitudinal axis of the main body and extending through at least part of the cheek retractor, wherein a thickness of the stability bar corresponds to resilience by which the cheek retractor portion applies pressure during bending.

14. (previously presented) The dental mouthpiece of claim 21, wherein the main body portion is formed by injection-molding as one piece.

15. (previously presented) The dental mouthpiece of claim 21, wherein a material from which the main body is formed is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

16. (currently amended) The dental mouthpiece of claim 21, wherein the ~~anterior~~ first wall of the main body portion and the ~~posterior~~ second wall of the main body portion have different thicknesses.

17. (cancelled)

18. (cancelled)

19. (currently amended) The dental mouthpiece of claim 21, further comprising a ~~detachable~~ mouth prop, the ~~detachable~~ mouth prop ~~comprising a bite block portion and a strap portion, wherein the bite block portion and the strap portion are~~ injection-molded in one piece.

20. (currently amended) The dental mouthpiece of claim [[21]] 19, wherein the mouth prop comprises a bite block portion ~~comprises~~ that includes an opening corresponding to a plug connected to the main body.

21. (currently amended) A dental mouthpiece comprising:

a main body portion, configured as a pocket having a plurality of perforations in communication with an interior open space, the pocket having a first end that is narrower than a second end, the pocket defined by:

~~an anterior~~ a first wall having a shape defined by an exterior edge, wherein the ~~anterior~~ first wall includes an opening to the interior open space of the pocket, and

a ~~posterior~~ second wall having a shape corresponding to the defined shape of the ~~anterior~~ first wall, wherein an exterior edge of the ~~posterior~~ second wall ~~shape~~ corresponds to the exterior edge of the ~~anterior~~ first wall, ~~a superior wall connecting the exterior edge of the anterior wall across a superior wall span to the corresponding exterior edge of the posterior wall on a first side, wherein at least part of the superior wall comprises a first set of perforations into the interior of the pocket, and wherein the superior wall span between the anterior wall and the posterior wall is less than a width of the anterior wall, an inferior wall connecting the exterior edge of the anterior wall across an inferior wall span to the corresponding exterior edge of the posterior wall on a second side, wherein at least part of the inferior wall comprises a second set of perforations into the interior of the pocket~~, the second wall comprising a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall and substantially extending a span between the first wall and the second wall, wherein the bridge structure is not attached to the first wall, wherein the protrusions of the bridge structure protrude from the interior surface of the second wall in a wave shape comprising one or more crests and one or more troughs and wherein the ~~inferior wall~~ span between the ~~anterior~~ first and the ~~posterior~~ second wall is less than [[the]] a width of the ~~anterior~~ first and the second wall, wherein a shape of the interior open space of the pocket ~~is enclosed by and~~ spans ~~across~~ between the defined shape of the ~~anterior~~ first wall[[,]] and the corresponding shape of the ~~posterior~~ second wall, ~~the superior wall connecting the exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall, and the inferior wall connecting the~~

~~exterior edge of the anterior wall to the corresponding exterior edge of the posterior wall~~, and

the pocket including a ~~rectangular~~ transition portion ~~having an anterior wall extending from the anterior wall of the main body portion, the rectangular portion configured to connect to the main body~~ at [[an]] the first end and ~~to~~ that flexibly ~~connect~~ connects to a cheek retractor ~~portion at another end~~, wherein the ~~anterior wall of the rectangular~~ transition portion comprises ~~a third set of~~ one or more perforations.

22. (currently amended) A dental mouthpiece comprising:

a cheek retractor;

a main body portion having a first end connected to the cheek retractor, the main body portion configured as a pocket having a plurality of perforations in communication with an interior open space, the pocket defined by:

~~an anterior~~ a first wall having a shape defined by a ~~smooth~~ exterior edge, wherein the ~~anterior~~ first wall includes an opening to the interior open space of the pocket, and

a ~~posterior~~ second wall having a shape corresponding to the defined shape of the ~~anterior~~ first wall, wherein a ~~smooth~~ exterior edge of the ~~posterior~~ second wall ~~shape~~ corresponds to the ~~smooth~~ exterior edge of the ~~anterior~~ first wall, ~~a superior wall connecting the smooth exterior edge of the anterior wall across a superior wall span to the corresponding smooth exterior edge of the posterior wall on a first side, wherein at least part of the superior wall comprises a first set of perforations, wherein the superior wall is perpendicular to the anterior wall and the posterior wall, and wherein the superior wall span is less than a width of the anterior wall, and an inferior wall connecting the exterior edge of the anterior wall across an inferior wall span to the corresponding exterior edge of the posterior wall on a second side, wherein at least part of the inferior wall comprises a second set of perforations, wherein the inferior wall is perpendicular to the anterior wall and the posterior wall, and wherein the inferior wall span is less than the width of the anterior wall, wherein a shape of the interior open space of the pocket is enclosed by and spans across the anterior wall, the posterior wall, the superior wall, and the inferior wall; and~~ the second wall comprising a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall and substantially extending a span between the first wall and the second wall, wherein the bridge structure is not attached to the first wall, wherein the protrusion of the bridge structure protrudes from the interior surface of the second wall in a wave shape comprising one or more crests and one or more troughs,

the pocket including a transition portion at the first end that flexibly connects to the cheek retractor;

a suction connector portion connected to [[one]] a second end of the main body portion, the suction connector configured to connect a vacuum source [[with]] to the interior open space of the pocket within the main body portion~~; and a rectangular portion having an anterior wall extending from the anterior wall of the main body portion, the rectangular portion configured to flexibly connect the main body portion at a second end to a cheek retractor, wherein the second end is opposite to the one end of the main body portion, wherein the anterior wall of the rectangular transition portion comprises a third set of perforations~~.

23. (new) A dental mouthpiece comprising:

a main body portion configured as a pocket having an interior space, the pocket defined by:

a first wall that includes one or more perforations in communication with the interior space of the pocket, and

a second wall that includes a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall within the interior space of the pocket, wherein the protrusions of the bridge structure protrude from the interior surface of the second wall toward the first wall in a wave shape comprising one or more crests and one or more troughs, and

a suction connector portion connected to a first end of the main body portion, the suction connector configured to connect a vacuum source to the interior space of the pocket; and

a cheek retractor connected to a second end of the main body portion, wherein the second end is opposite the first end of the main body portion.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S):	Nguyen et al.
APPLICATION NO.:	14/228,046
FILING DATE:	March 27, 2014
TITLE:	Intraoral Device with Mesh
ART UNIT:	3772
CONFIRM. NO.:	7700
ATTY.DKT.NO.:	INCEP-001COA

MAIL STOP AF
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

AMENDMENT J and
After Final Consideration Pilot Request

Examiner Mai:

In response to the office action dated November 27, 2020 (*Office Action*), please enter the following **amendments** to the **claims**, which commence on **page two**. **Applicant's summary of examiner interview** begins on **page nine**. The **remarks** and **conclusion** appear beginning on **pages ten** and **fourteen**, respectively. This response is submitted with an AFCP request.

Electronic Acknowledgement Receipt

EFS ID:	41703305
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	21-JAN-2021
Filing Date:	27-MAR-2014
Time Stamp:	18:19:10
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	After Final Consideration Program Request	INCEP-001COA_AFCP_1-21-21.pdf	151796 3a725d9a75cf244e443587797aa1927bf92b7625	no	2

Warnings:

Information:					
2		INCEP-001COA_RESP_J_1-21-21.pdf	303208 b0721b60f14d6be0b28a2cde550b4b79bc57e6b2	yes	14

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Applicant Arguments/Remarks Made in an Amendment	10	14
	Applicant summary of interview with examiner	9	9
	Claims	2	8
	Response After Final Action	1	1

Warnings:	
Information:	
Total Files Size (in bytes):	455004

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

138718 7590 03/17/2021

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

EXAMINER	
MAI, HAO D	
ART UNIT	PAPER NUMBER
3772	

DATE MAILED: 03/17/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,046	03/27/2014	Thien Nguyen	INCEP-001COA	7700

TITLE OF INVENTION: INTRAORAL DEVICE WITH MESH

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	06/17/2021

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

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

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

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

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

PART B - FEE(S) TRANSMITTAL

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

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

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

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

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

138718 7590 03/17/2021

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

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

Certificate of Mailing or Transmission

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

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,046	03/27/2014	Thien Nguyen	INCEP-001COA	7700

TITLE OF INVENTION: INTRAORAL DEVICE WITH MESH

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	06/17/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
MAI, HAO D	3772	433-093000

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

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

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

2. For printing on the patent front page, list

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

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

1 _____

2 _____

3 _____

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

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

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

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

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

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

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

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

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

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

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

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

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,046	03/27/2014	Thien Nguyen	INCEP-001COA	7700

138718 7590 03/17/2021

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

EXAMINER	
MAI, HAO D	
ART UNIT	**PAPER NUMBER**
3772	

DATE MAILED: 03/17/2021

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

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

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

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

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

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

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

Privacy Act Statement

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

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

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

Notice of Allowability	Application No. 14/228,046	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--

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

1. ☑ This communication is responsive to 01/21/2021.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

3. ☑ The allowed claim(s) is/are 2-11,13-16 and 19-22 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

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

   Certified copies:

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

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

   * Certified copies not received: _____ .

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

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

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

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

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☑ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☑ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☑ Other PTO2323.

/Hao D Mai/ Examiner, Art Unit 3772	/NICHOLAS D LUCCHESI/ Primary Examiner, Art Unit 3772

DETAILED ACTION

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Attorney Ruby Chung on 02/25/2021.

The application has been amended as follows:

- **The listing of the claims according to the Examiner's Amendment is attached herein.**

Allowable Subject Matter

2. Claims 2-11, 13-16, and 19-22, are allowed.

3. The following is an examiner's statement of reasons for allowance: the prior arts fail to disclose or reasonably teach a dental mouthpiece comprising, *inter alia*: a main body portion configured as a pocket having a plurality of perforations in communication with an interior open space, the pocket is defined by a first wall, a second wall, and a side wall connecting corresponding exterior edges of the first wall and second wall; the second wall comprising a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall and extending a span between the first wall and the second wall, wherein the bridge structure is not attached to the first wall, wherein the plurality of protrusions of the bridge structure protrude from the interior surface of the second wall in a wave shape comprising one or more crests and one or more troughs and wherein the span between the first and the second wall is less than a width of the first and the second wall,

wherein a shape of the interior open space of the pocket spans between the defined shape of the first wall and the corresponding shape of the second wall, and he pocket including a transition portion that flexibly connects to a cheek retractor, *in combination with the elements and their arrangements as set forth in the claims.*

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAO D MAI whose telephone number is (571)270-3002. The examiner can normally be reached on Mon-Fri 8:00-4:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cris Rodriguez can be reached on (571) 272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

5. 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

Applicant-Initiated Interview Summary	**Application No.** 14/228,046	**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 of Record	

Date of Interview: 25 February 2021

Issues Discussed:

Proposed Amendment(s)

Proposed Examiner's Amendment to correct issues of indefiniteness were discussed and authorized by Applicant's Representative.

/Hao D Mai/ Examiner, Art Unit 3772	/NICHOLAS D LUCCHESI/ Primary 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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043,046	11/03/2015	HDM
Update Search	05/31/2016	HDM
Update Search	10/03/2016	HDM
A61C 17/04, 0208	11/01/2016	HDM
Update Search	11/01/2016	HDM
Udpate Search	05/30/2017	HDM
Update Search	12/26/2017	HDM
Update Search	07/09/2019	HDM
Update Search	01/06/2020	HDM
A61C17/08,0208	02/27/2021	HDM

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

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
433	93	11/03/2015	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	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor Search	11/03/2015	HDM
Review searches of parent case 14/100323	11/03/2015	HDM
Update Search	05/31/2016	HDM
Update Search	10/03/2016	HDM
Update Search	11/01/2016	HDM
Update Search	05/30/2017	HDM
Update Search	12/26/2017	HDM
Update Search	10/01/2018	HDM
Update Search	07/09/2019	HDM
Update Search	01/06/2020	HDM
Update Search	11/21/2020	HDM
Interference text search	02/27/2021	HDM

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
A61C	17/08, 0208	02/27/2021	HDM

/Hao D Mai/ Examiner, Art Unit 3772	

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	Nguyen et al.
	Examiner	**Art Unit**
	HAO D MAI	3772

CPC						
Symbol					**Type**	**Version**
A61C	/	17	/	0208	I	2013-01-01
A61C	/	17	/	08	I	2019-05-01

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

/Hao D Mai/ Examiner, Art Unit 3772 (Assistant Examiner)	27 February 2021 (Date)	**Total Claims Allowed:** 18	
/NICHOLAS D LUCCHESI/ Primary Examiner, Art Unit 3772 (Primary Examiner)	27 February 2021 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1A

U.S. Patent and Trademark Office — Part of Paper No.: 20210227

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	Nguyen et al.
	Examiner	**Art Unit**
	HAO D MAI	3772

INTERNATIONAL CLASSIFICATION					
CLAIMED					
A61C	/	17	/	02	
A61C	/	17	/	08	

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

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

/Hao D Mai/ Examiner, Art Unit 3772	27 February 2021	**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	18	
/NICHOLAS D LUCCHESI/ Primary Examiner, Art Unit 3772	27 February 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

U.S. Patent and Trademark Office — Part of Paper No.: 20210227

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	Nguyen et al.
	Examiner	**Art Unit**
	HAO D MAI	3772

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

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1	10	10	16	19										
2	2	11	11	17	20										
3	3		12	1	21										
4	4	12	13	18	22										
5	5	13	14		23										
6	6	14	15												
7	7	15	16												
8	8		17												
9	9		18												

/Hao D Mai/ Examiner, Art Unit 3772 (Assistant Examiner)	27 February 2021 (Date)	**Total Claims Allowed:** 18	
/NICHOLAS D LUCCHESI/ Primary Examiner, Art Unit 3772 (Primary Examiner)	27 February 2021 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1A

AFCP 2.0 Decision

Application No.	Applicant(s)	
14/228,046	Nguyen et al.	
Examiner	**Art Unit**	**AIA (FITF) Status**
HAO D MAI	3772	No

This is in response to the After Final Consideration Pilot request filed 21 January 2021.

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.

   ☐ The request is not the first proper AFCP 2.0 request 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.

IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (cancelled)

2. (previously presented) The dental mouthpiece of claim 21, wherein the plurality of perforations ~~on main body portion~~ are spaced to comprise a mesh.

3. (currently amended) The dental mouthpiece of claim 21, wherein the plurality of perforations further comprise one or more perforations in the first wall ~~of the main body portion further comprises a fourth set of perforations~~.

4. (currently amended) The dental mouthpiece of claim 3, wherein the one or more ~~fourth set of~~ perforations on the first wall ~~of the main body portion~~ are spaced to comprise a mesh.

5. (currently amended) The dental mouthpiece of claim 21, wherein the plurality of perforations further comprise one or more perforations in the second wall ~~of the main body portion further comprises one or more perforations~~.

6. (currently amended) The dental mouthpiece of claim 5, wherein the one or more perforations on the second wall ~~of the main body portion~~ are spaced to comprise a mesh.

7. (currently amended) The dental mouthpiece of claim 21, wherein the opening of ~~from~~ the first wall ~~of the main body portion to the pocket~~ includes a slit along a longitudinal axis of the main body.

8. (currently amended) The dental mouthpiece of claim 21, further comprising a suction connector that connects to the interior open space of the pocket, the suction connector configured to connect to a vacuum source that provides suction of fluids through the plurality of ~~one or more of the~~ perforations into the interior open space of the pocket towards the suction connector.

9. (currently amended) The dental mouthpiece of claim 21, wherein the ~~bridge structure further includes~~ plurality of protrusions of the bridge structure ~~that~~ collectively provide spaced contact points that keep the first wall ~~of the main body portion~~ separated from the second wall ~~of the main body portion~~ during suction.

10. (currently amended) The dental mouthpiece of claim 9, wherein spaces between the plurality of protrusions of the bridge structure allow fluids within the interior open space of the pocket to be drawn therethrough towards a vacuum source that provides suction.

11. (currently amended) The dental mouthpiece of claim 21, further comprising ~~the~~ a cheek retractor ~~portion~~, the cheek retractor having a surface that applies pressure when the dental mouthpiece is bent, wherein the pressure is based on a resilience of a material from which the cheek retractor is formed.

12. (cancelled)

13. (currently amended) The dental mouthpiece of claim 11, further comprising a stability bar protruding from an interior surface of the second wall ~~of the main body portion~~ along a longitudinal axis of the main body and extending through at least part of the cheek retractor, wherein a thickness of the stability bar corresponds to a resilience by which the cheek retractor portion applies pressure during bending.

14. (previously presented) The dental mouthpiece of claim 21, wherein the main body portion is formed by injection-molding as one piece.

15. (previously presented) The dental mouthpiece of claim 21, wherein a material from which the main body is formed is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

16. (previously presented) The dental mouthpiece of claim 21, wherein the first wall of the main body portion and the second wall of the main body portion have different thicknesses.

17. (cancelled)

18. (cancelled)

19. (currently amended) The dental mouthpiece of claim 21, further comprising a mouth prop, the mouth prop is injection-molded in one piece.

20. (previously presented) The dental mouthpiece of claim 19 wherein the mouth prop comprises a bite block portion that includes an opening corresponding to a plug connected to the main body.

21. (currently amended) A dental mouthpiece comprising:

a main body portion, configured as a pocket having a plurality of perforations in communication with an interior open space, the pocket having a first end that is narrower than a second end, the pocket is defined by:

a first wall having a shape defined by an exterior edge, wherein the first wall includes an opening to the interior open space of the pocket, ~~and~~

a second wall having a shape corresponding to the defined shape of the first wall, wherein an exterior edge of the second wall shape corresponds to the exterior edge of the first wall, and

a side wall connecting the exterior edge of the first wall to the corresponding edge of the second wall;

the second wall comprising a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall and ~~substantially~~ extending a span between the first wall and the second wall, wherein the bridge structure is not attached to the first wall, wherein the plurality of protrusions of the bridge structure protrude from the interior surface of the second wall in a wave shape comprising one or more crests and one or more troughs and wherein the span between the first and the second wall is less than a width of the first and the second wall, wherein a shape of the interior open space of the pocket spans between the defined shape of the first wall and the corresponding shape of the second wall, and

the pocket including a transition portion at the first end and that flexibly connects to a cheek retractor, wherein the plurality of perforations comprise one or more perforations at the transition portion ~~comprises one or more perforations~~.

22. (currently amended) A dental mouthpiece comprising:

a cheek retractor;

a main body portion having a first end connected to the cheek retractor, the main body portion configured as a pocket having a plurality of perforations in communication with an interior open space, the pocket is defined by:

a first wall having a shape defined by [[a]] an exterior edge, wherein the first wall includes an opening to the interior open space of the pocket, ~~and~~

a second wall having a shape corresponding to the defined shape of the first wall, wherein [[a]] an exterior edge of the second wall shape corresponds to the exterior edge of the first wall, and

a side wall connecting the exterior edge of the first wall to the corresponding edge of the second wall;

the second wall comprising a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall and ~~substantially~~ extending a span between the first wall and the second wall, wherein the bridge structure is not attached to the first wall, wherein the plurality of protrusions of the bridge structure ~~protrudes~~ protrude from the interior surface of the second wall in a wave shape comprising one or more crests and one or more troughs;[[,]]

the pocket including a transition portion at the first end that flexibly connects to the cheek retractor;

a suction connector portion connected to a second end of the main body portion, the suction connector configured to connect a vacuum source to the interior open space of the pocket within the main body portion.

23. (cancelled)

Bibliographic Data

Application No: 14/228,046

Foreign Priority claimed: ○ Yes ◉ No

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

Verified and Acknowledged: /Hao D Mai/ /HDM/

Examiner's Signature Initials

Title: INTRAORAL DEVICE WITH MESH

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
03/27/2014	433	3772	INCEP-001COA
RULE			

APPLICANTS

Dryshield, LLC, Fountain Valley, CA,

INVENTORS

Thien Nguyen, Santa Ana, CA, UNITED STATES

Tam Thanh Pham, San Francisco, CA, UNITED STATES

CONTINUING DATA

This application is a CON of 14100323 12/09/2013 PAT 8911232

14100323 has PRO of 61734939 12/07/2012

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

04/18/2014

**** SMALL ENTITY ****

STATE OR COUNTRY

UNITED STATES

ADDRESS

Polsinelli LLP

3 Embarcadero Center

Suite 2400

San Francisco, CA 94111

UNITED STATES

FILING FEE RECEIVED

$730

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3,226	A61C17/08,0208,043,046.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2021/02/27 08:52
L3	15	l1 and suction$3 and (collapse with prevent$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2021/02/27 08:53
L4	4	("4017975" | "6474990" | "9044293").PN. OR ("9956062").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2021/02/27 08:54
L9	175	A61C17/08,0208,043,046.cpc. and mouthpiece	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2021/02/27 08:59
L10	17	A61C17/08,0208,043,046.cpc. and mouthpiece and protrusion	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2021/02/27 08:59

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L5	963	A61C17/08,0208,043,046.cpc.	US-PGPUB; USPAT	ADJ	ON	2021/02/27 08:55
L8	1	A61C17/08,0208,043,046.cpc. and (wave protrusion).clm.	US-PGPUB; USPAT	SAME	ON	2021/02/27 08:56
L11	13	A61C17/08,0208,043,046.cpc. and (mouthpiece) and (wall with protrusion)	US-PGPUB; USPAT	SAME	ON	2021/02/27 09:00
L12	12	l5 and (collaps$3 suction prevent$3)	US-PGPUB; USPAT	SAME	ON	2021/02/27 09:12

2/27/2021 9:13:21 AM
C:\Users\hmai1\Documents\EAST\Workspaces\14228046.wsp

OK TO ENTER: /HDM/
02/27/2021

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S):	Nguyen et al.
APPLICATION NO.:	14/228,046
FILING DATE:	March 27, 2014
TITLE:	Intraoral Device with Mesh
ART UNIT:	3772
CONFIRM. NO.:	7700
ATTY.DKT.NO.:	INCEP-001COA

MAIL STOP AF
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

AMENDMENT J and
After Final Consideration Pilot Request

Examiner Mai:

In response to the office action dated November 27, 2020 (*Office Action*), please enter the following **amendments** to the **claims**, which commence on **page two**. **Applicant's summary of examiner interview** begins on **page nine**. The **remarks** and **conclusion** appear beginning on **pages ten** and **fourteen**, respectively. This response is submitted with an AFCP request.

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.
14/228,046	03/27/2014	Thien Nguyen	INCEP-001COA	7700

138718 7590 03/31/2021

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

EXAMINER	
MAI, HAO D	

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
03/31/2021	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

Corrected ***Notice of Allowability***	**Application No.** 14/228,046	**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--

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

1. ☑ This communication is responsive to 03/19/2021.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

3. ☑ The allowed claim(s) is/are 2-11,13-16 and 19-22 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

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

   Certified copies:

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

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

   * Certified copies not received: _____ .

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

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

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

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

Attachment(s)

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

/Hao D Mai/ Examiner, Art Unit 3772	/NICHOLAS D LUCCHESI/ Primary Examiner, Art Unit 3772

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,046
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COA

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-	50,461	10/17/1865	Dibble	
		US-	4,511,329	4/16/1985	Diamond	
		US-	5,037,298	8/6/1991	Hickham	
		US-	5,460,524	10/24/1995	Anderson	
		US-	5,516,286	5/14/1996	Kushner	
		US-	6,267,591	7/31/2001	Barstow	
		US-	8,535,056	9/17/2013	Dragan et al.	
		US-				
		US-				
		US-				
		US-				
		US-				

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] (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	T[6]
		GB 2 170 106	7/30/1986	Liegner		
		WO 1999/037238	7/29/1999	Ohguchi		

Examiner Signature	/Hao D Mai/	Date Considered	03/22/2021

*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/

Substitute for Form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*				Application Number	14/228,046
				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-001COA

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No[1]	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-002DCOA U.S. Patent Application 29/491,367 Final Office Action mailed 3/4/15	
		Docket No. INCEP-002DCOA U.S. Patent Application 29/491,367 Office Action mailed 11/14/14	
		Docket No. INCEP-003DCOA U.S. Patent Application 29/477,887 Final Office Action mailed 5/1/15	
		Docket No. INCEP-003DCOA U.S. Patent Application 29/477,887 Office Action mailed 11/14/14	
		Docket No. INCEP-004DCOA U.S. Patent Application 29/477,888 Final Office Action mailed 5/1/15	
		Docket No. INCEP-004DCOA U.S. Patent Application 29/477,888 Office Action mailed 11/14/14	

Examiner Signature	/Hao D Mai/	Date Considered	03/22/2021

*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]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/

PATENT
Docket No.: INCEP-001COA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3732 Examiner: Hao D. Mai

Serial No.: 14/228,046 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 Customer No.: 28661

Title: INTRAORAL DEVICE WITH MESH

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
	14/100,323	INCEP-001	Thien Nguyen	INTRAORAL DENTAL SUCTION AND ISOLATION SYSTEM	December 9, 2013
	14/228,050	INCEP-001COB	Thien Nguyen	INTRAORAL DEVICE WITH BRIDGE	March 27, 2014
	14/228,054	INCEP-001COC	Thien Nguyen	INTRAORAL DEVICE WITH STABILITY START	March 27, 2014
	14/228,057	INCEP-001COD	Thien Nguyen	INTRAORAL DEVICE WITH SLIT	March 27, 2014
	14/228,061	INCEP-001COE	Thien Nguyen	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP	March 27, 2014
Examiner's Signature:	/Hao D Mai/				Date: 03/22/2021

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

PATENT
Docket No.: INCEP-001COA

The Commissioner is hereby authorized to charge any necessary fee to Account Number 50-0612.

Respectfully submitted,
LEWIS ROCA ROTHGERBER LLP

Dated: May 12, 2014

/Tam Thanh Pham/
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

PATENT
INCEP-001COA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772

Examiner: Hao D. Mai

Serial No.: 14/228,046

Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700

Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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
	16/870,745	INCEP-005	Thien Nguyen	DENTAL MOUTHPIECE	May 8, 2020
Examiner's Signature:	/Hao D Mai/				Date: 03/22/2021

Respectfully submitted,
POLSINELLI LLP

Dated: August 18, 2020

By: _____/Ruby L. Chung/_____
Ruby L. Chung (Reg. No. 76,809)
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,046
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COA

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-	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-	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-				

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.

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

Substitute for Form 1449/PTO	*Complete if Known*	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,046
	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-001COA

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-001COD U.S. Patent Application 14/228,057; Office Action mailed 5/5/21	
		Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Final Office Action mailed 4/29/21	

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772

Examiner: Hao D. Mai

Serial No.: 14/228,046

Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700

Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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

Electronic Acknowledgement Receipt

EFS ID:	42695690
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	12-MAY-2021
Filing Date:	27-MAR-2014
Time Stamp:	19:04:55
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-001COA_IDS_Statement_5-12-21.pdf	98163 efcd76f5d590a592ac73174281db77af1c987fc4	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COA_IDS_1449_5-12-21.pdf	224019 11e93901dbf3291e4d2413f7909efb24db4718bc	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Transmittal Letter	INCEP-001COA_List_of_Copending_Apps_5-12-21.pdf	101305 70bcc8d7817c32d3f4de6ee8e2407e7d6116ebb4	no	1
Warnings:					
Information:					
		Total Files Size (in bytes):	423487		

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.: 14/228,046 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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

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: May 12, 2021

By: _____/Ruby L. Chung/_____
Ruby L. Chung (Reg. No. 76,809)
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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	14/228,046
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COA

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-	1,731,322	10/15/2029	Riddle	
		US-	2020/0352680	11/12/2020	Nguyen	
		US-				
		US-				
		US-				
		US-				
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		US-				
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		US-				
		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
		WO 2020/231864	11/19/2020	Dryshield, LLC		

Examiner Signature		Date Considered	

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

Substitute for Form 1449/PTO	*Complete if Known*	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,046
	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-001COA

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 6/14/16	
		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; 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	

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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.

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

(19) World Intellectual Property Organization
International Bureau

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19 November 2020 (19.11.2020)

WIPO | PCT

(10) International Publication Number
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(51) International Patent Classification:
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A61C 17/00 (2006.01) *A61C 5/14* (2006.01)
A61C 17/06 (2006.01)

(21) International Application Number:
PCT/US2020/032228

(22) International Filing Date:
08 May 2020 (08.05.2020)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/846,353 10 May 2019 (10.05.2019) US

(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

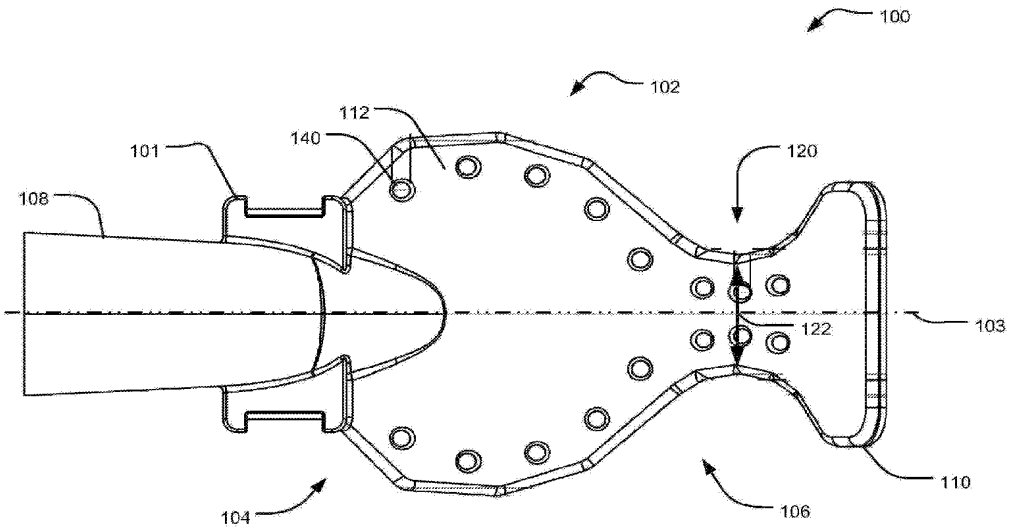


FIG. 1

(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.

WO 2020/231864 A1

[Continued on next page]

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))*

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.

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.

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.

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,

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

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

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,

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

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

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.

[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

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.

[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.

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.

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.

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.

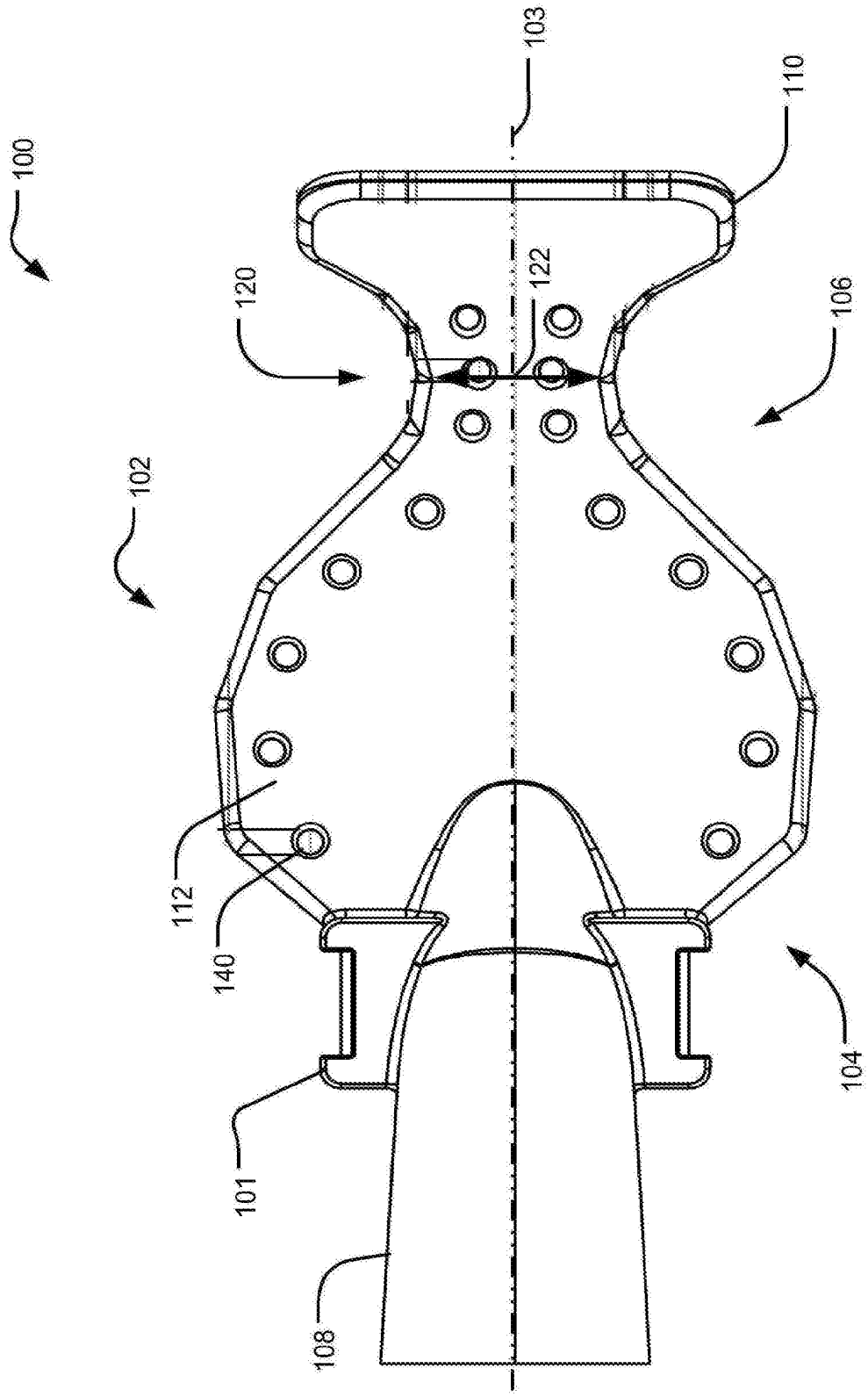


FIG. 1

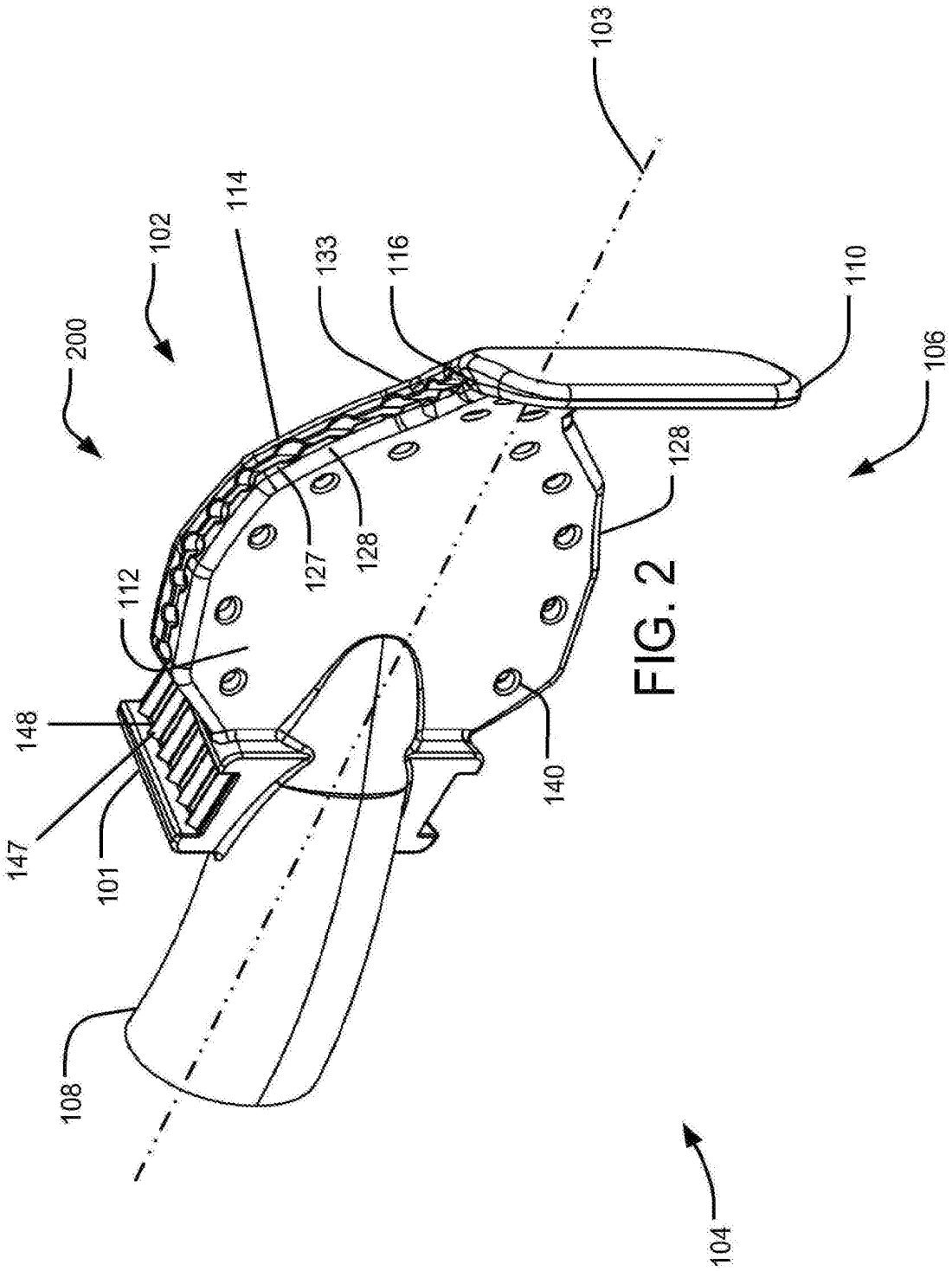

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FIG. 2

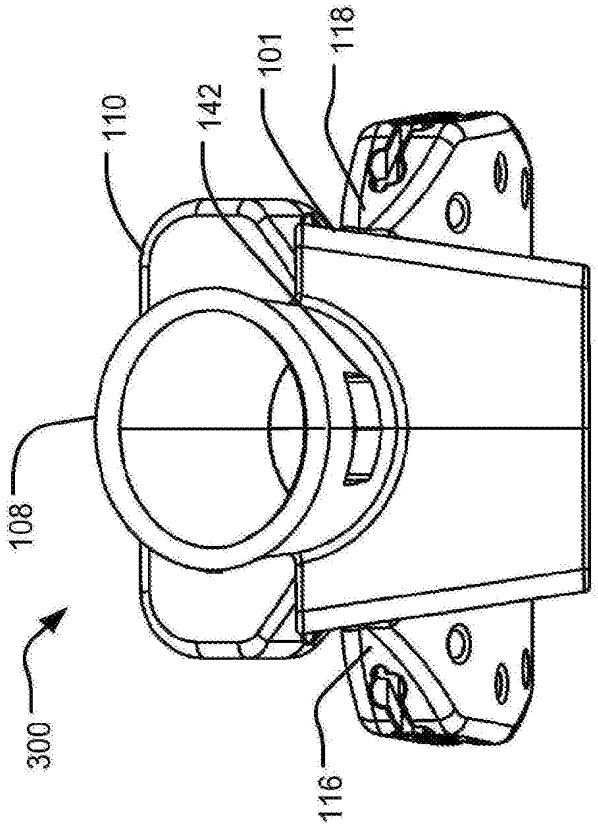


FIG. 3

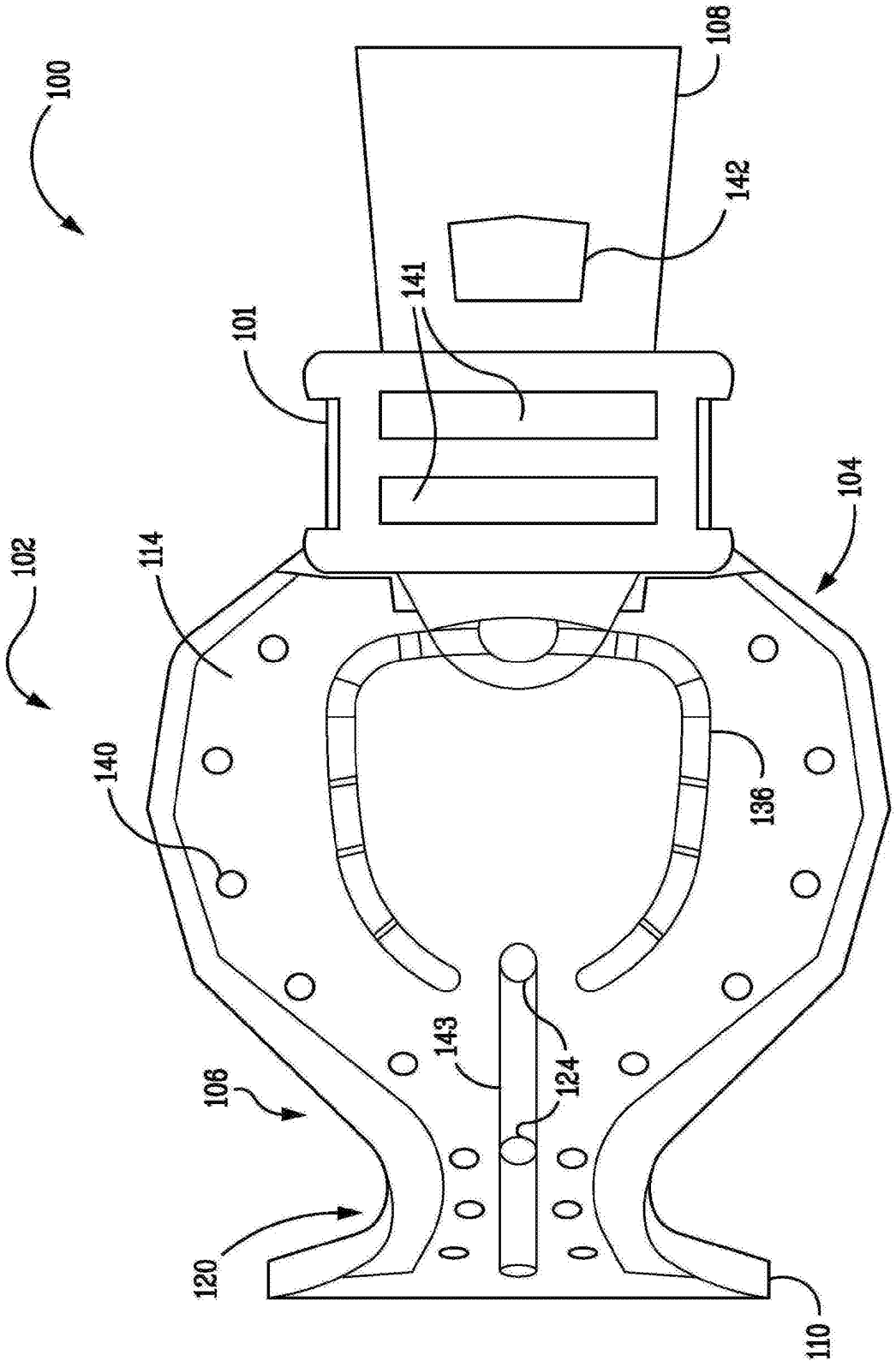


FIG. 4

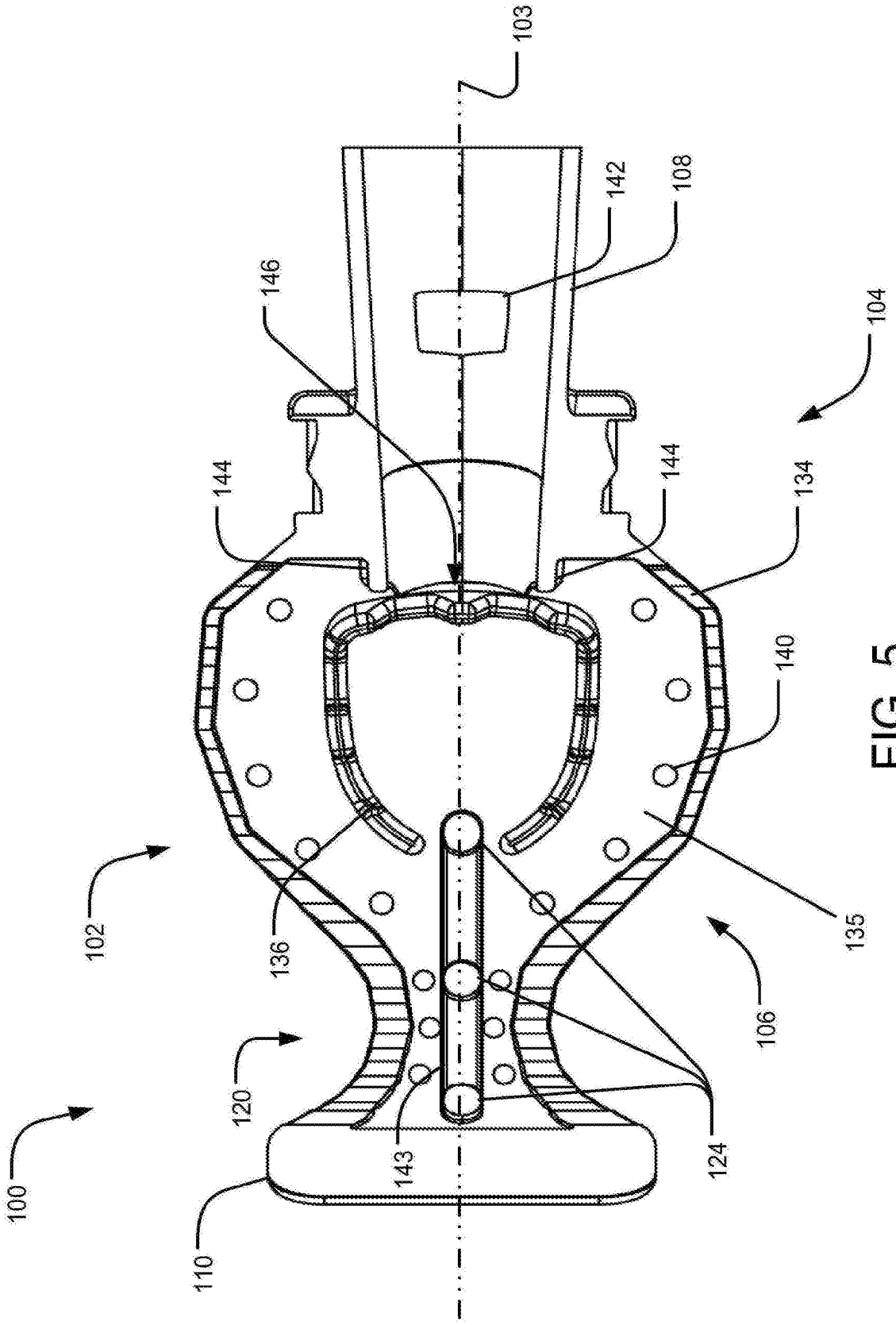

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FIG. 5

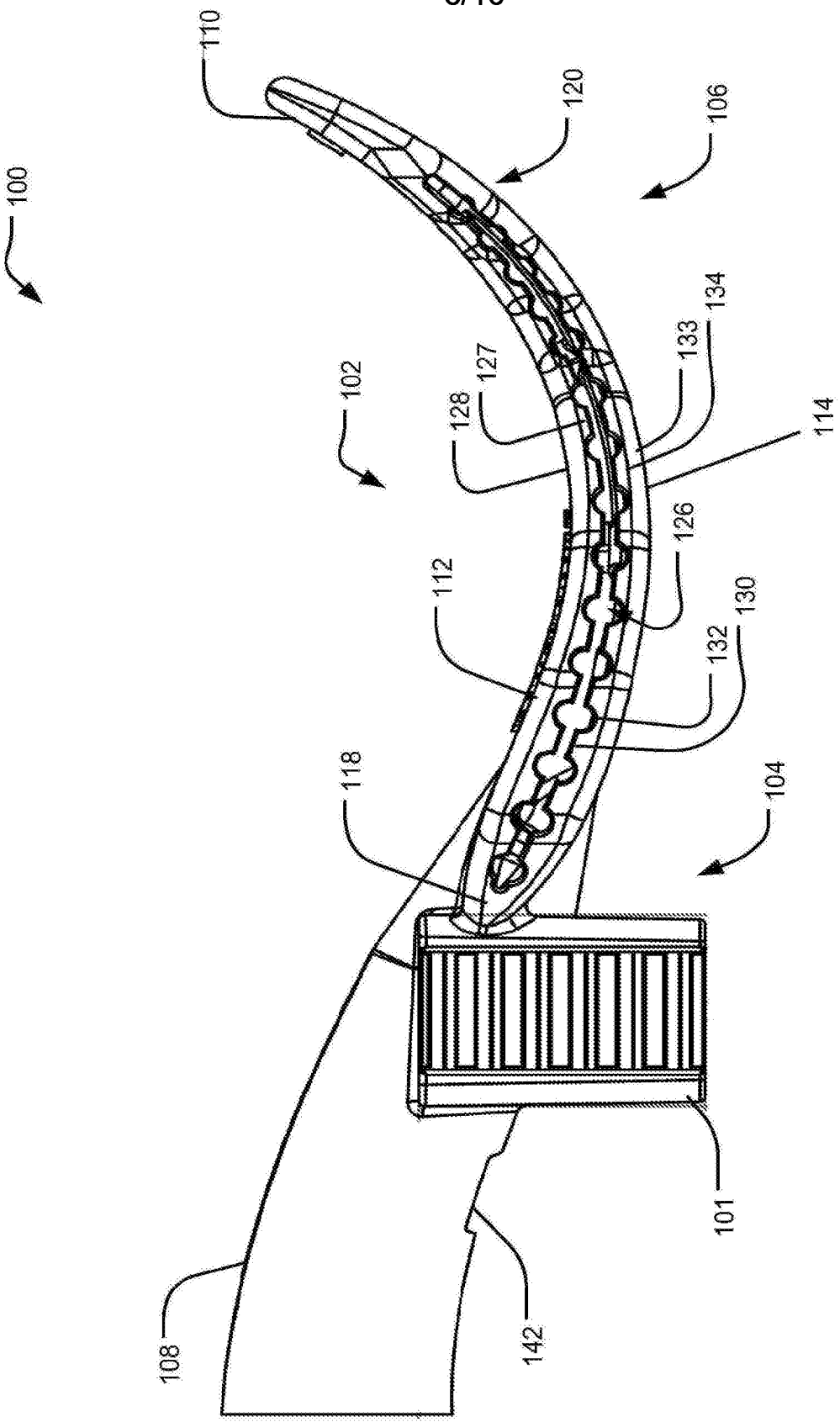

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FIG. 6

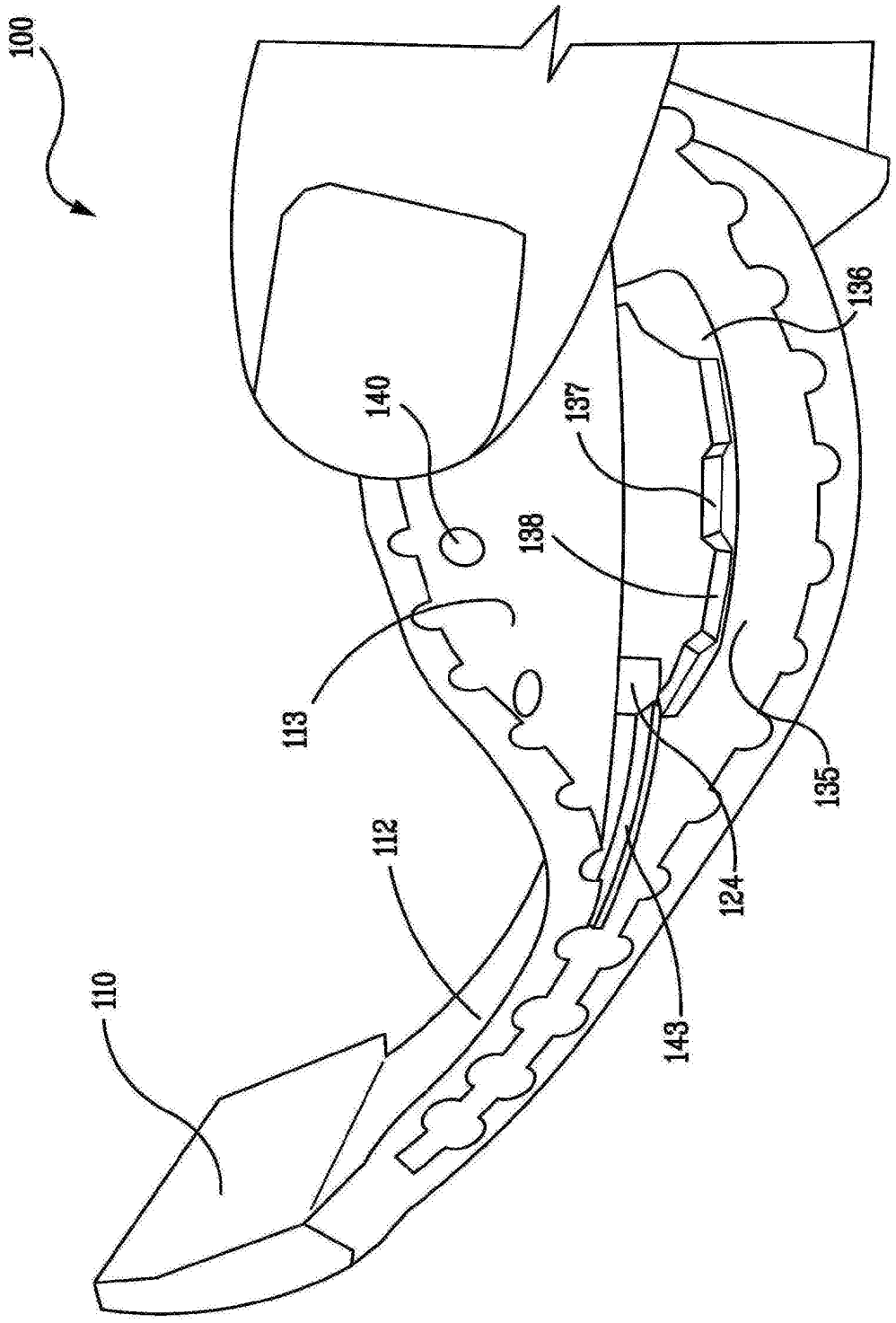


FIG. 7

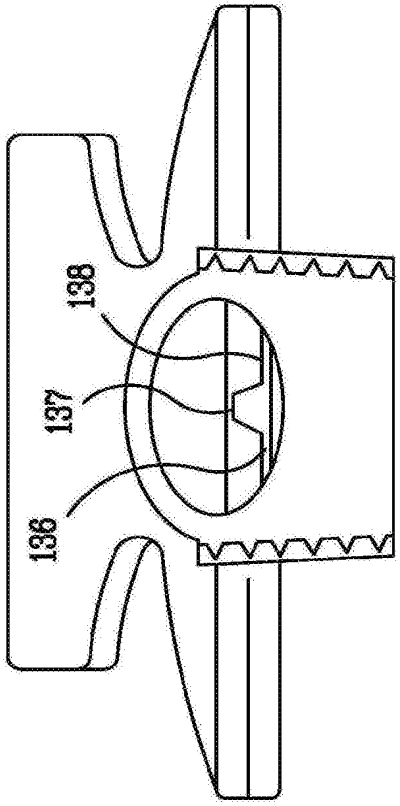


FIG. 8

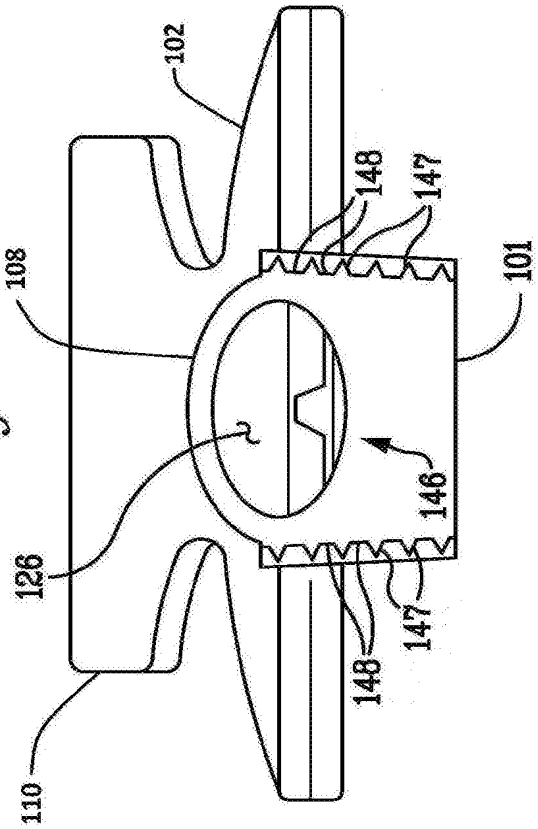


FIG. 9

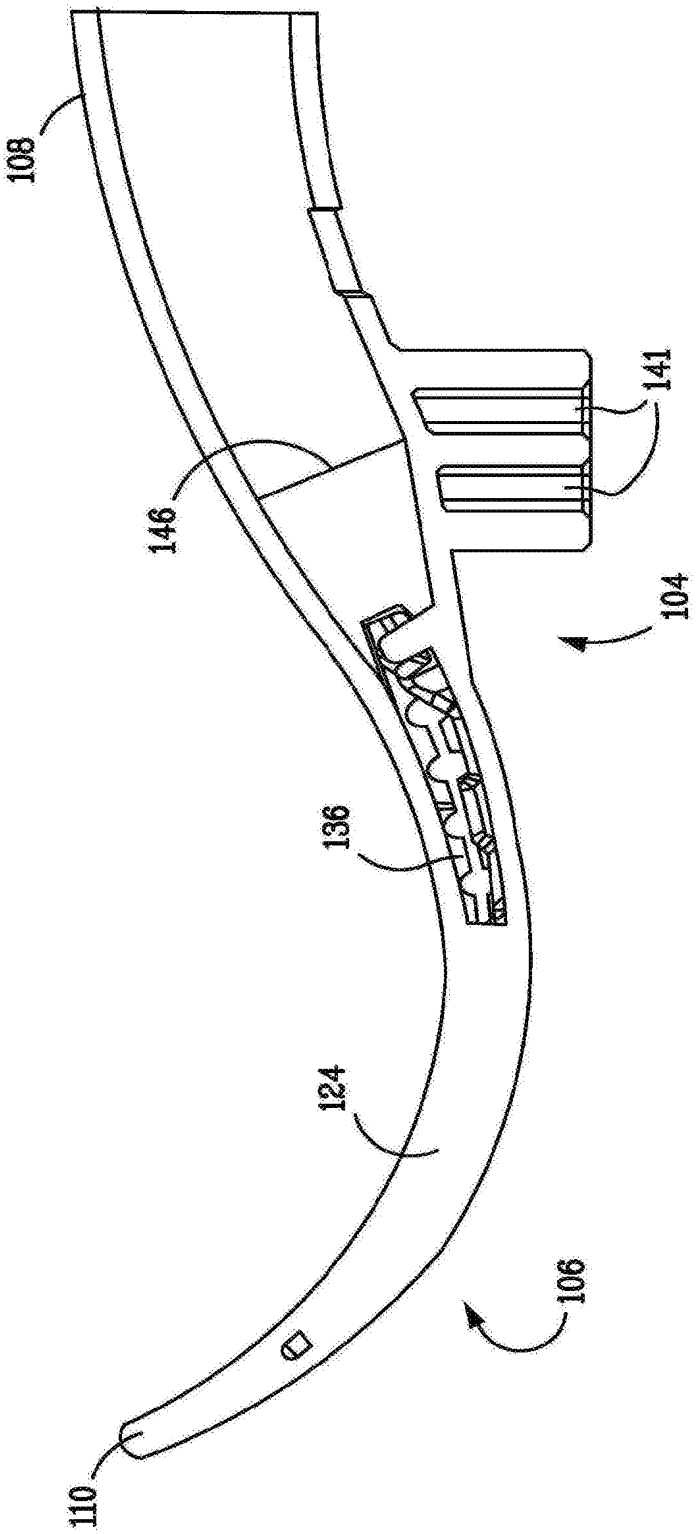


FIG. 10

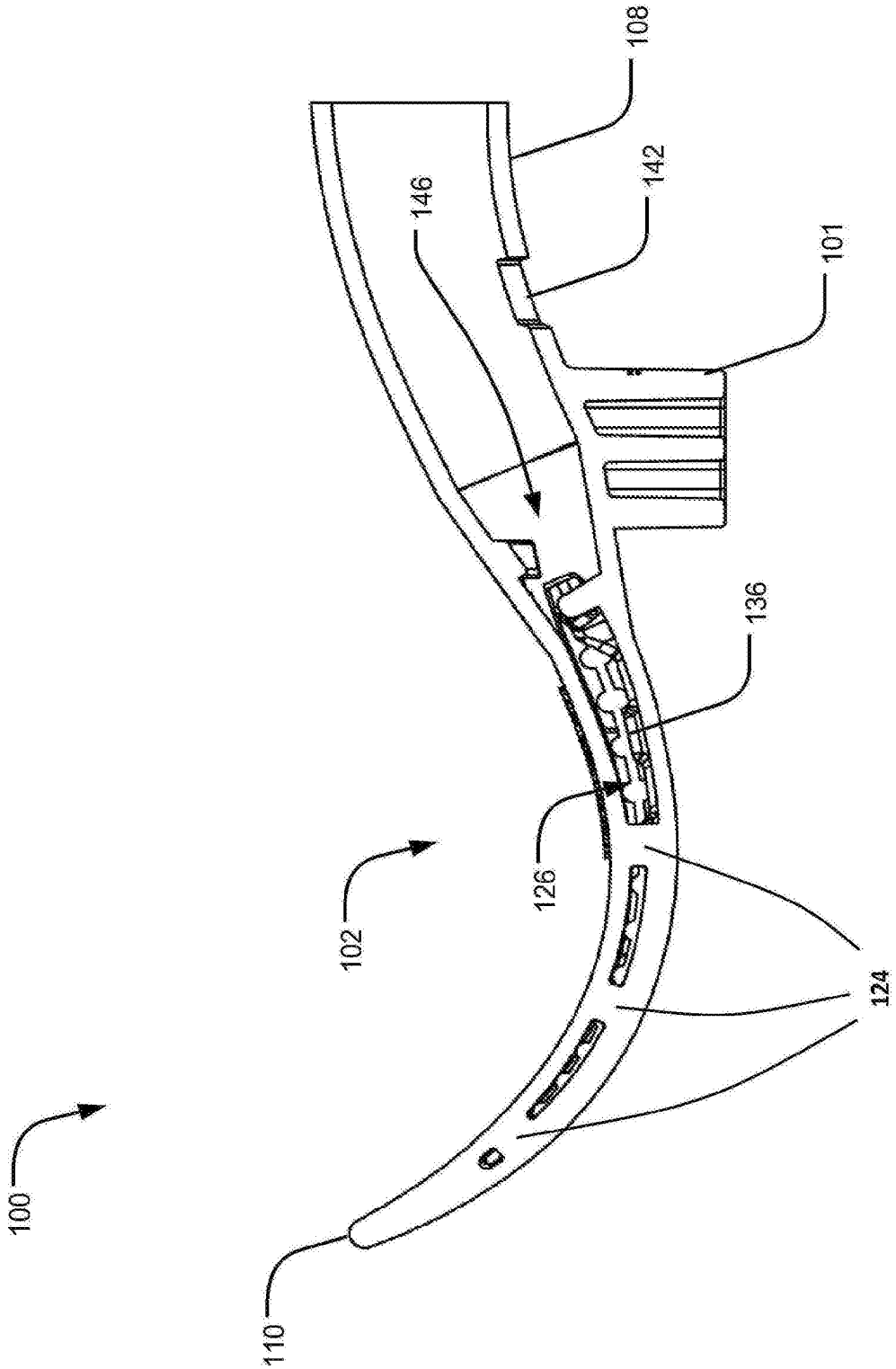


FIG. 11

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

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)

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:

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)

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:
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.

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

Electronic Acknowledgement Receipt

EFS ID:	42697242
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	12-MAY-2021
Filing Date:	27-MAR-2014
Time Stamp:	19:09:57
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-001COA_IDS_Statement-2_5-12-21.pdf	96937 665b3b756641373e2caa2357fb480eb25a5b539f	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COA_IDS_1449-2_5-12-21.pdf	223718 041f7eb53bbf3a535924af4a35e89f8147c0bd8f	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Foreign Reference	WO_2020231864.pdf	1224937 94e93fe92cca10548ae9e2f8b8607c11d618a5ef	no	29
Warnings:					
Information:					
4	Non Patent Literature	PCTUS2014032892_InternationalPreliminaryReportOnPatentability_6-14-16.pdf	334202 7b192fb9ea41dea74c303a365c828775974a5c96	no	6
Warnings:					
Information:					
		Total Files Size (in bytes):	1879794		

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.: 14/228,046 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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.

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)
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,046	03/27/2014	Thien Nguyen	INCEP-001COA	7700

7590 06/03/2021

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

EXAMINER	
MAI, HAO D	

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
06/03/2021	ELECTRONIC

NOTICE OF NON-COMPLIANT INFORMATION DISCLOSURE STATEMENT

An Information Disclosure Statement (IDS) filed 05/12/2021 in the above-identified application fails to meet the requirements of 37 CFR 1.97(d) for the reason(s) specified below. Accordingly, the IDS will be placed in the file, but the information referred to therein has not been considered.

The IDS is not compliant with 37 CFR 1.97(d) because:

☐ The IDS lacks a statement as specified in 37 CFR 1.97(e).

☑ The IDS lacks the fee set forth in 37 CFR 1.17(p).

☐ The IDS was filed after the issue fee was paid. Applicant may wish to consider filing a petition to withdraw the application from issue under 37 CFR 1.313(c) to have the IDS considered. See MPEP 1308.

C. Garner, for

571-272-4200 or 1-888-786-0101
Application Assistance Unit
Office of Data Management

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 14/228,046	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	06/17/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 3	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".	/TAMARA D HARRELL/
*** 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.

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	14/228,046	Filing Date	2014-03-27	Docket Number (if applicable)	INCEP-001COA	Art Unit	3772
First Named Inventor	Thien Nguyen			Examiner Name	MAI, HAO D		

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

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 Chung/	Date (YYYY-MM-DD)	2021-06-17
Name	Ruby 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.

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR(S):	Nguyen et al.
APPLICATION NO.:	14/228,046
FILING DATE:	March 27, 2014
TITLE:	Intraoral Device with Mesh
ART UNIT:	3732
CONFIRM. NO.:	7700
ATTY.DKT.NO.:	INCEP-001COA

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COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

RESPONSE K

Examiner Mai:

In response to the Notice of Allowance dated March 17, 2021 (*Notice of Allowance*), please enter the following **amendments** to the **claims**, which commence on **page two**. **Applicant's summary of examiner interview** begins on **page nine**. The **remarks** and **conclusion** appear beginning on **pages ten** and **fourteen**, respectively. This response is submitted with an RCE.

IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (cancelled)

2. (previously presented) The dental mouthpiece of claim 21, wherein the plurality of perforations on the main body portion are spaced to comprise a mesh.

3. (previously presented) The dental mouthpiece of claim 21, wherein the first wall of the main body portion further comprises a fourth set of perforations.

4. (previously presented) The dental mouthpiece of claim 3, wherein the fourth set of perforations on the first wall of the main body portion are spaced to comprise a mesh.

5. (previously presented) The dental mouthpiece of claim 21, wherein the second wall of the main body portion further comprises one or more perforations.

6. (previously presented) The dental mouthpiece of claim 5, wherein the perforations on the second wall of the main body portion are spaced to comprise a mesh.

7. (previously presented) The dental mouthpiece of claim 21, wherein the opening from the first wall of the main body portion to the pocket includes a slit along a longitudinal axis of the main body.

8. (previously presented) The dental mouthpiece of claim 21, further comprising a suction connector that connects to the interior open space of the pocket, the suction connector configured to connect to a vacuum source that provides suction of fluids through one or more of the perforations into the interior open space of the pocket towards the suction connector.

9. (currently amended) The dental mouthpiece of claim 21, wherein the ~~bridge structure further includes~~ plurality of protrusions [[that]] collectively provide spaced contact points that keep the first wall of the main body portion separated from the second wall ~~of the main body portion~~ during suction.

10. (previously presented) The dental mouthpiece of claim 9, wherein spaces between the protrusions of the bridge structure allow fluids within the interior open space of the pocket to be drawn therethrough towards a vacuum source that provides suction.

11. (previously presented) The dental mouthpiece of claim 21, further comprising the cheek retractor portion, the cheek retractor having a surface that applies pressure when the dental mouthpiece is bent, wherein the pressure is based on resilience of a material from which the cheek retractor is formed.

12. (cancelled)

13. (currently amended) The dental mouthpiece of claim 11, further comprising a stability bar protruding from an interior surface of the second wall ~~of the main body portion~~ along a longitudinal axis of the main body and extending through at least part of the cheek retractor, wherein a thickness of the stability bar corresponds to resilience by which the cheek retractor portion applies pressure during bending.

14. (previously presented) The dental mouthpiece of claim 21, wherein the main body portion is formed by injection-molding as one piece.

15. (previously presented) The dental mouthpiece of claim 21, wherein a material from which the main body is formed is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

16. (previously presented) The dental mouthpiece of claim 21, wherein the first wall of the main body portion and the second wall of the main body portion have different thicknesses.

17. (cancelled)

18. (cancelled)

19. (previously presented) The dental mouthpiece of claim 21, further comprising a mouth prop, the mouth prop injection-molded in one piece.

20. (previously presented) The dental mouthpiece of claim 19, wherein the mouth prop comprises a bite block portion that includes an opening corresponding to a plug connected to the main body.

21. (currently amended) A dental mouthpiece comprising:

a main body portion, configured as a pocket having a plurality of perforations in communication with an interior open space, the pocket having a first end that is narrower than a second end, the pocket defined by:

a first wall having a shape defined by an exterior edge, wherein the first wall includes an opening to the interior open space of the pocket, and

a second wall having a shape corresponding to the defined shape of the first wall, wherein an exterior edge of the second wall corresponds to the exterior edge of the first wall, [[,]] the second wall comprising a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall and substantially extending a span between the first wall and the second wall, wherein the bridge structure is not attached to the first wall, wherein the protrusions of the bridge structure protrude from the interior surface of the second wall in a wave shape comprising one or more crests and one or more troughs and wherein the span between the first and the second wall is less than a width of the first and the second wall, wherein a shape of the interior open space of the pocket spans between the defined shape of the first wall and the corresponding shape of the second wall, [[,]]

a connecting wall that connects the first wall to the second wall across the span between the first wall and the second wall; and

the pocket including a transition portion at the first end and that flexibly connects to a cheek retractor, wherein the transition portion comprises one or more perforations.

22. (currently amended) A dental mouthpiece comprising:

a cheek retractor;

a main body portion having a first end connected to the cheek retractor, the main body portion configured as a pocket having a plurality of perforations in communication with an interior open space, the pocket defined by:

a first wall having a shape defined by [[a]] an exterior edge, wherein the first wall includes an opening to the interior open space of the pocket, [[and]]

a second wall having a shape corresponding to the defined shape of the first wall, wherein [[a]] an exterior edge of the second wall corresponds to the exterior edge of the first wall, the second wall comprising a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall and substantially extending a span between the first wall and the second wall, wherein the bridge structure is not attached to the first wall, wherein the protrusion of the bridge structure protrudes from the interior surface of the second wall in a wave shape comprising one or more crests and one or more troughs, and

a connecting wall that connects the first wall to the second wall across the span between the first wall and the second wall,

the pocket including a transition portion at the first end that flexibly connects to the cheek retractor;

a suction connector portion connected to a second end of the main body portion, the suction connector configured to connect a vacuum source to the interior open space of the pocket within the main body portion.

23. (currently amended) A dental mouthpiece comprising:

a main body portion configured as a pocket having an interior space, the pocket defined by:

a first wall that includes one or more perforations in communication with the interior space of the pocket, [[and]]

a second wall that includes a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall within the interior space of the pocket, wherein the protrusions of the bridge structure protrude from the interior surface of the second wall toward the first wall in a wave shape comprising one or more crests and one or more troughs, and

a connecting wall that connects the first wall to the second wall across a span between the first wall and the second wall;

a suction connector portion connected to a first end of the main body portion, the suction connector configured to connect a vacuum source to the interior space of the pocket; and

a cheek retractor connected to a second end of the main body portion, wherein the second end is opposite the first end of the main body portion.

APPLICANT'S SUMMARY OF EXAMINER INTERVIEW

The Applicant's representative spoke with the Examiner between February 25 and May 3, 2021 ("*Examiner Interviews*") regarding the pending rejections and the *Notice of Allowance*.

On February 25, the Applicant's representative granted the Examiner authorization to remove the term 'substantially' from the claims by examiner's amendment in order to place the application in condition for allowance. The *Notice of Allowance* appeared to include, however, more extensive and different amendments than that authorized during the interview of February 25, 2021.

Between March 2nd and May 3rd, the Applicant's representative and the Examiner discussed the examiner's amendment and the discrepancies. The Examiner advised that the Applicant's representative to file a Request for Continued Examination and to make further claim amendments relative to the claims as filed by the Applicant on January 21, 2021.

The Applicant and the Applicant's representative thank the Examiner for her time and courtesy during the *Examiner Interviews*. The Examiner is invited to contact Applicant's undersigned representative with any further suggestions to finalize the claims for allowance.

REMARKS

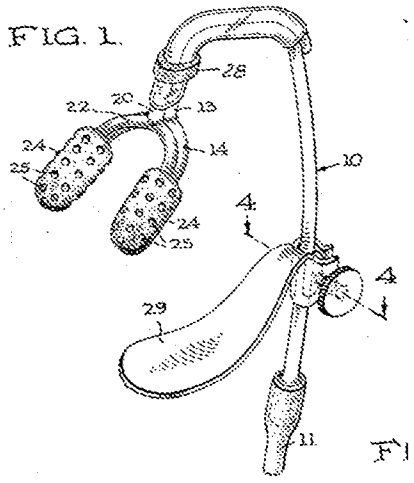
Amendments to the Claims

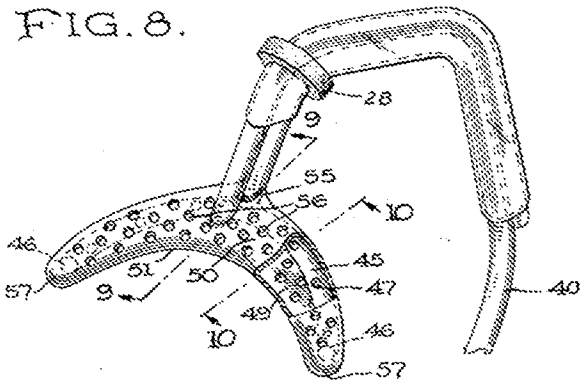
Claims 2-10, 12-16, and 19-22 are currently pending. Claims 9, 13, and 21-23 have been currently amended. The amended claims reflect subject matter to which the Applicant believes it is entitled to claim. *See e.g., Specification*, [0035] (noting that "[a]n exemplary main body portion 110, when placed in a mouth, may include an anterior wall facing the front of the mouth (e.g., the side with slit 170) and a posterior wall facing the back of the mouth," and "[t]he two walls may connect at a superior wall and an inferior wall forming a body that is at least partially enclosed"); FIGs. 1-2. As such, no new matter has been added.

Rejection under 35 U.S.C. § 103

During the *Examiner Interview* on March 2, 2021, the Examiner had argued that *Baughan* (U.S. Patent 3,101,543A) teaches a first wall and a second wall comprising a bridge structure. The Applicant respectfully disagrees.

Baughan discusses "a flexible hollow rubber sleeve or, boot 24" that "surrounds and encloses each tube extension 15" as illustrated in FIG. 1 below. *Baughan*, [2:51-55]. FIG. 8 of *Baughan* further illustrates another embodiment of the same invention.





The boot 24 of *Baughan* fails to disclose 'a first wall having a shape defined by an exterior edge' and 'a second wall having a shape corresponding to the defined shape of the first wall, wherein an exterior edge of the second wall corresponds to the exterior edge of the first wall' as claimed, because the boot 24 of *Baughan* is cylindrical without any edge. FIG. 8 of *Baughan* similarly illustrates the boot as having no discernable edges.

Baughan further discusses "a substantially U-shaped horizontal branch tube 45" that is "adapted to span the floor of the mouth just inwardly of the lower gum." *Id.* at [4:43-47]. Such tube 45 illustrated in FIG. 8 of *Baughan* fails to disclose any 'wave shape comprising one or more crests and one or more troughs' as claimed. In contrast, the independent claims 21, 22, and 23 recite that 'a second wall … comprising a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of the second wall and substantially extending a span between the first wall and the second wall, wherein the protrusion of the bridge structure protrudes from the interior surface of the second wall in a wave shape comprising one or more crests and one or more troughs.' Thus, *Baughan* fails to disclose 'a first wall having a shape defined by an exterior edge,' 'a second wall having a shape corresponding to the defined shape of the first wall, wherein an exterior edge of the second wall corresponds to the exterior edge of the first wall,' and 'the second wall comprising a bridge structure that includes a plurality of protrusions integral with and

protruding from an interior surface of the second wall and substantially extending a span between the first wall and the second wall, wherein the protrusion of the bridge structure protrudes from the interior surface of the second wall 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 in the *Office Action* dated November 27, 2020 and the *Examiner Interviews*. 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.

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. A Notice of Allowance is respectfully requested.

If the Examiner has any questions regarding the case, the Examiner is invited to contact the Applicant's undersigned representative.

Respectfully submitted,
Dryshield, LLC

June 17, 2021

By: /Ruby Chung/

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Electronic Patent Application Fee Transmittal

Application Number:	14228046
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH MESH
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Ruby Lim Chung/Cheri Houle
Attorney Docket Number:	INCEP-001COA

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($)
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	2820	1	1000	1000
		Total in USD ($)		**1000**

Electronic Acknowledgement Receipt

EFS ID:	43015174
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	17-JUN-2021
Filing Date:	27-MAR-2014
Time Stamp:	14:50:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$1000
RAM confirmation Number	E20216GE51233331
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-001COA_RCE_6-17-21.pdf	82747 b351fd38b52776994d0327f0c0bb92f75d3c3bf3	no	3
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
2		INCEP-001COA_RESP_K_6-17-21.pdf	422255 bcbdc2543c328c44dcb947a6d4258ab3037bbf23	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	7
Applicant summary of interview with examiner	8	8
Applicant Arguments/Remarks Made in an Amendment	9	12

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30167 ab7c6e3ca6827dede4a5cc4aa2072dd9d00c4d54	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	535169		

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	14/228,046
Filing Date	March 27, 2014
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Examiner Name	Hao D. Mai
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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-	1,731,322	10/15/1929	Riddle	
		US-	2020/0352680	11/12/2020	Nguyen	
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FOREIGN PATENT DOCUMENTS

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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	14/228,046
	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-001COA

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 6/14/16	
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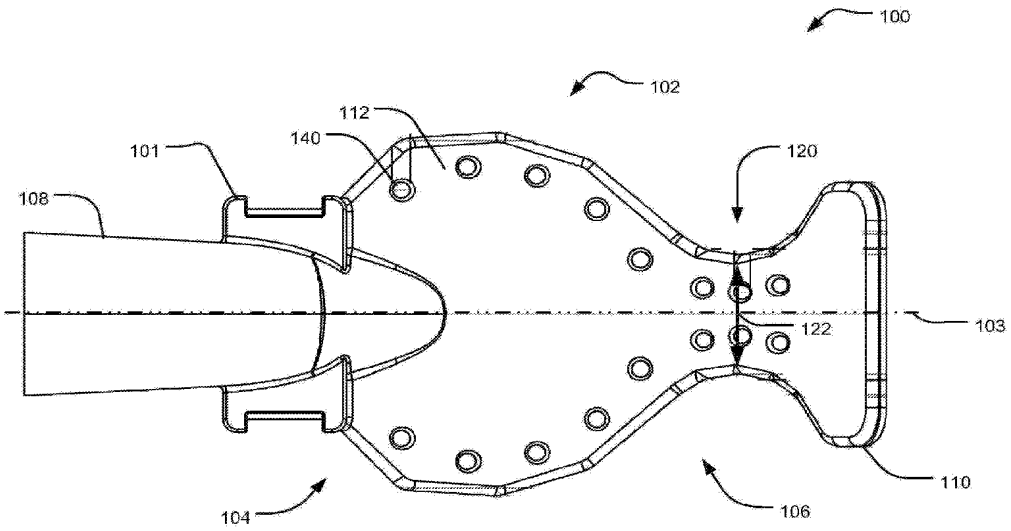


FIG. 1

(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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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.

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.

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.

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,

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

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

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,

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

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

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.

[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

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.

[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.

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.

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.

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.

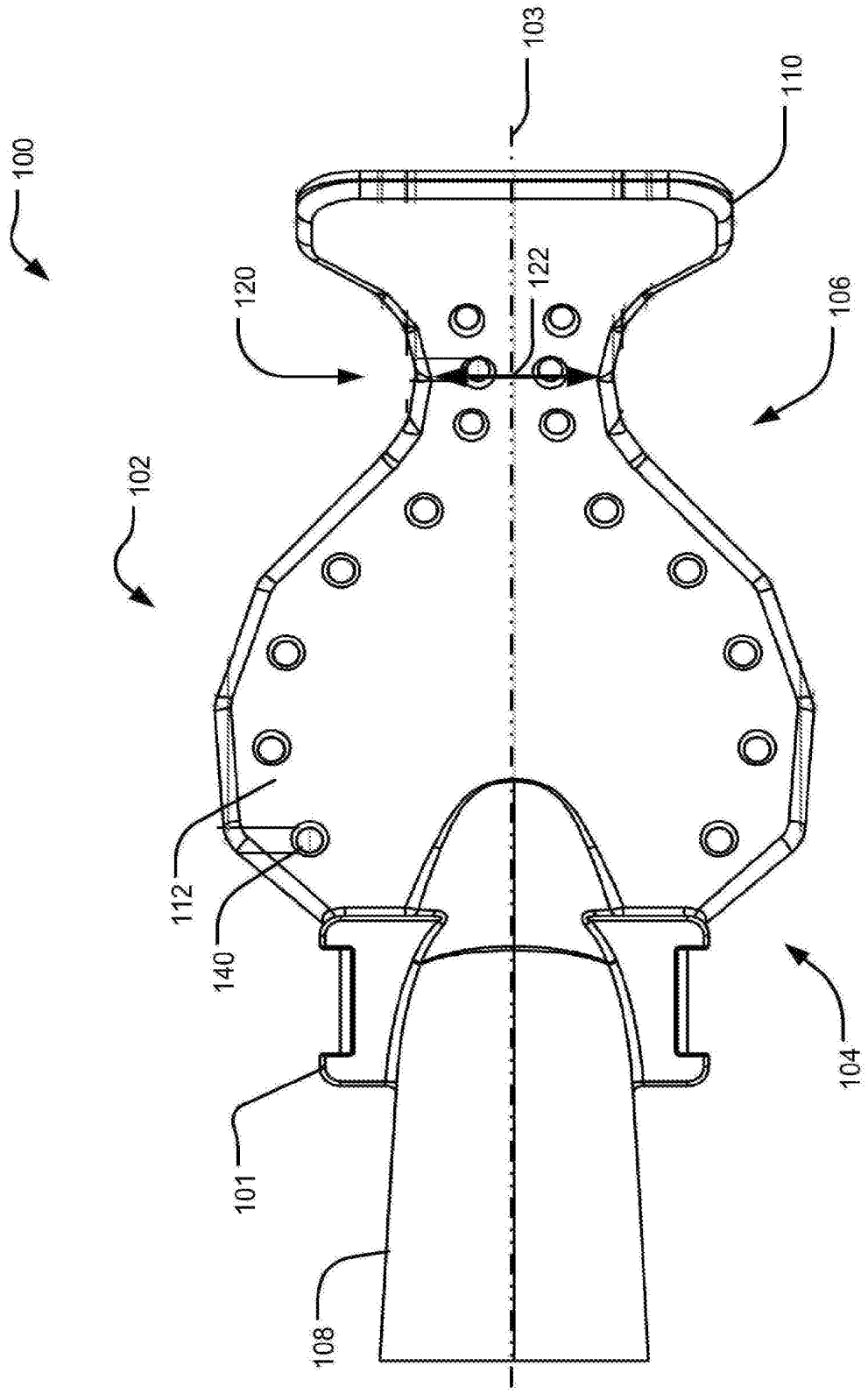


FIG. 1

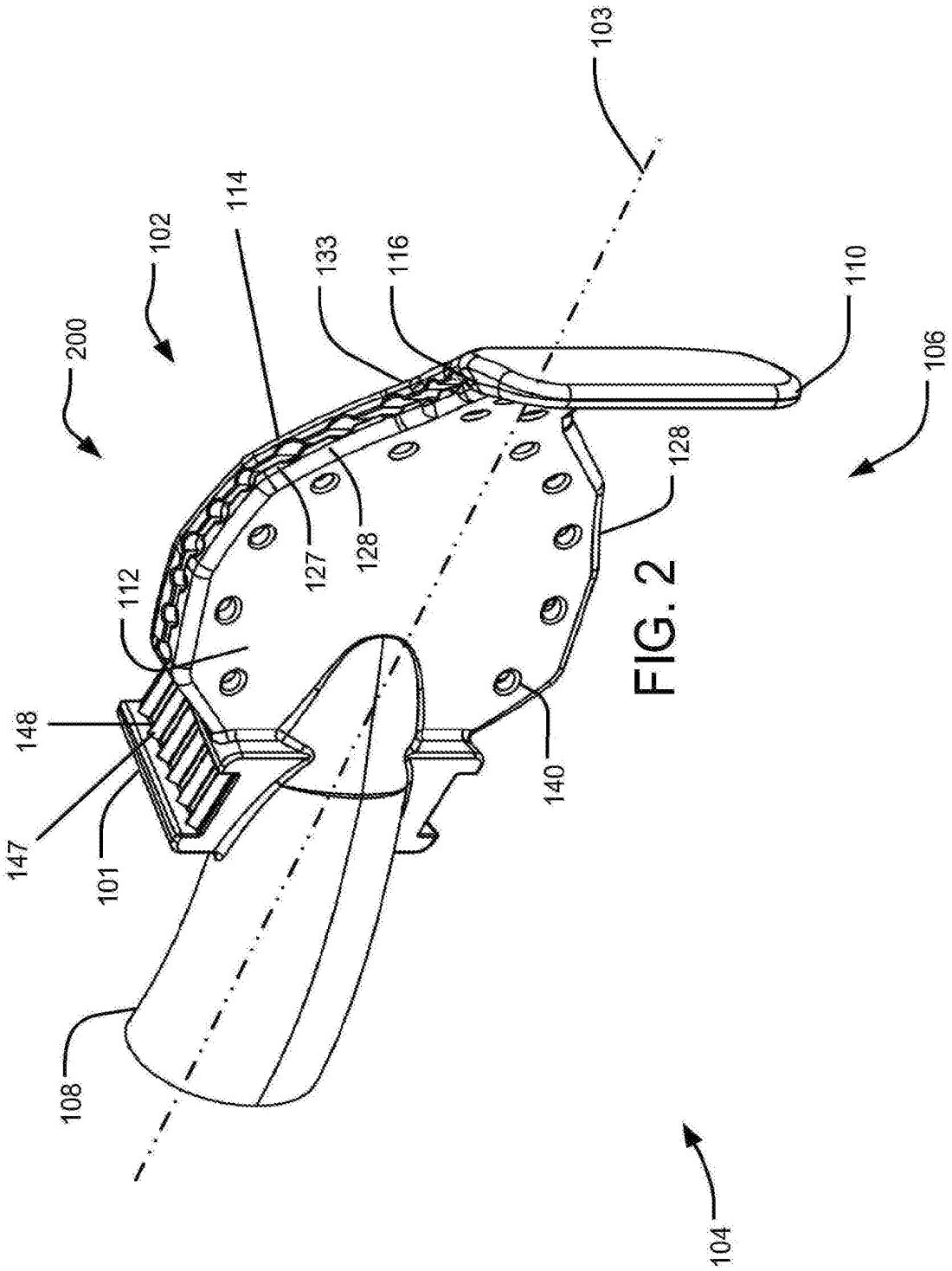

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FIG. 2

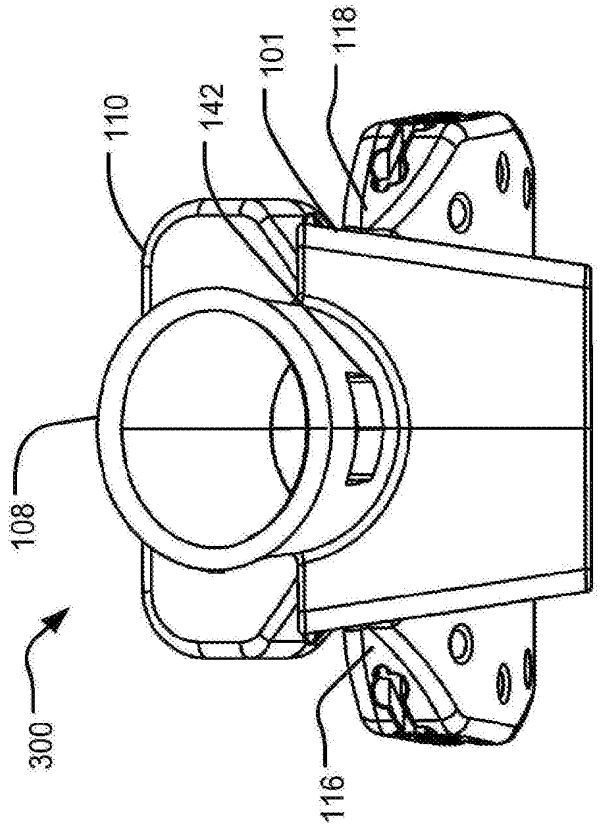


FIG. 3

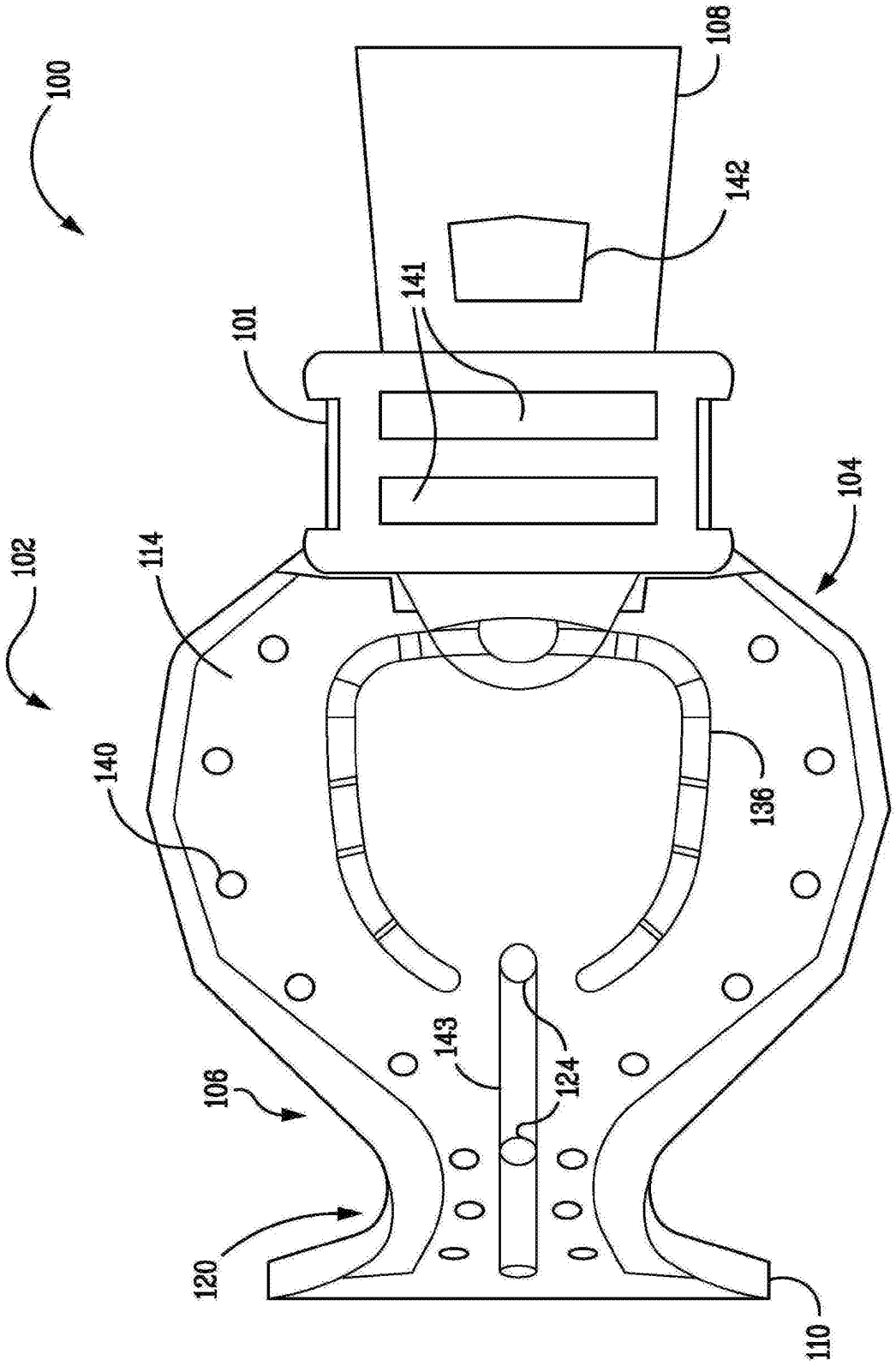


FIG. 4

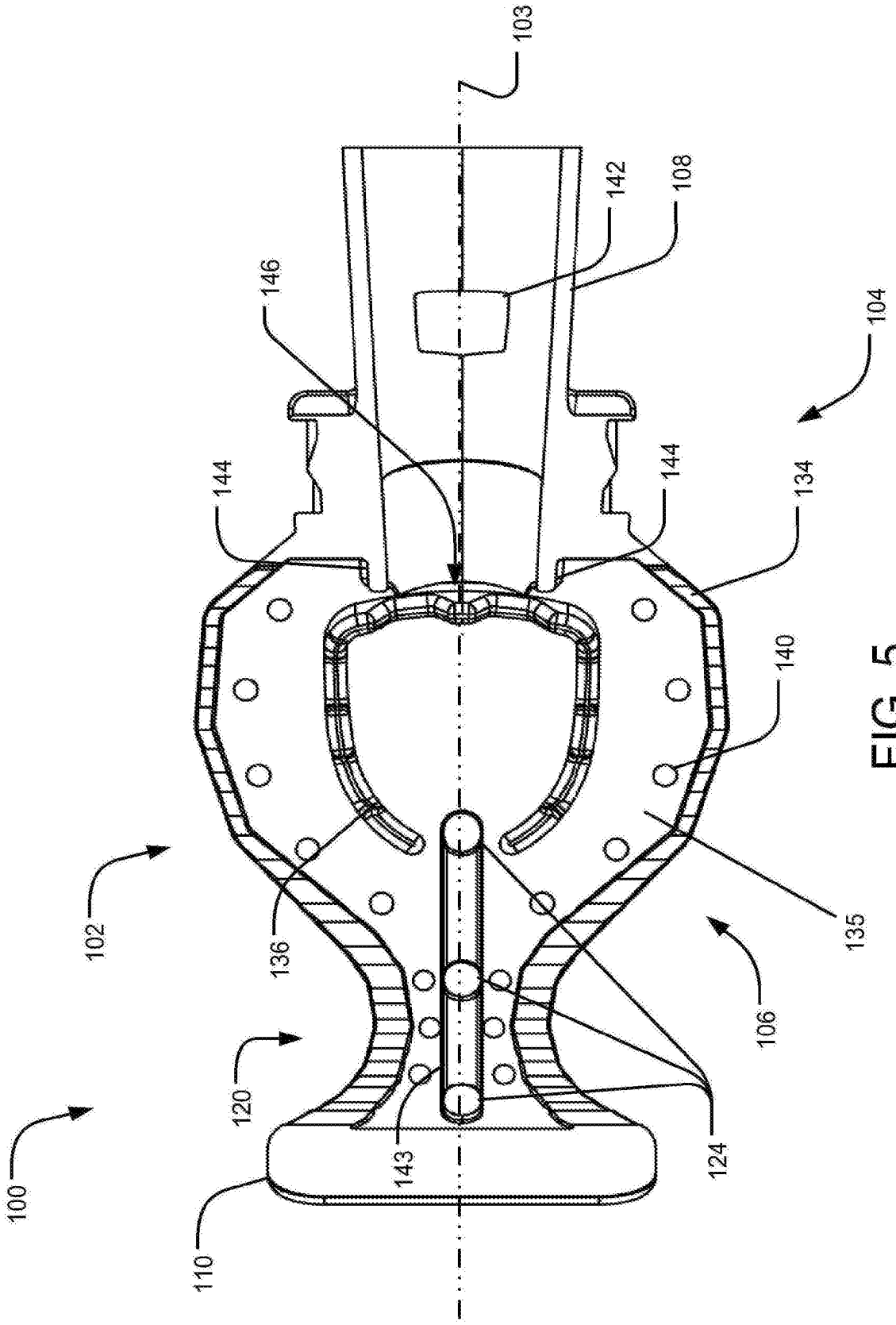

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FIG. 5

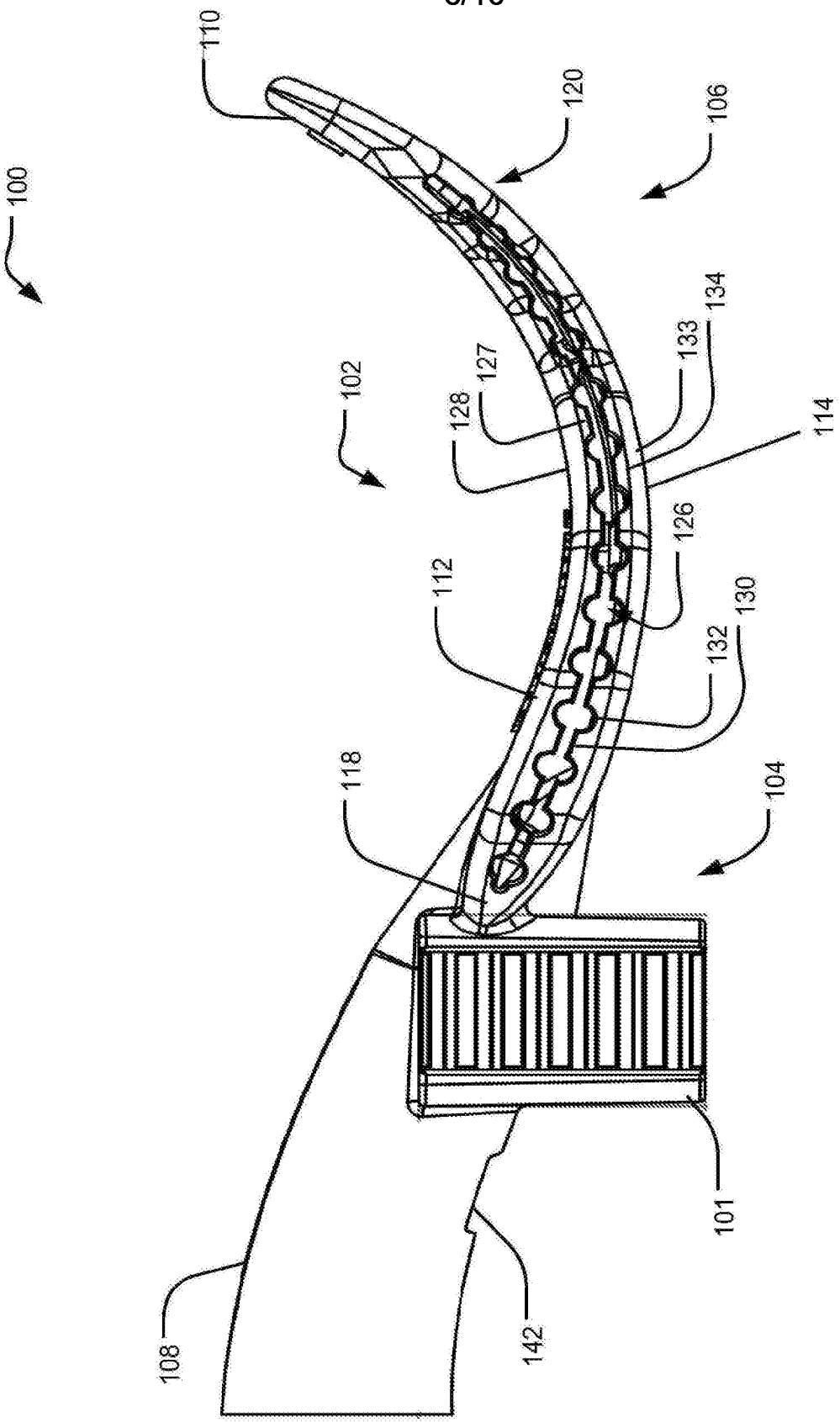

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FIG. 6

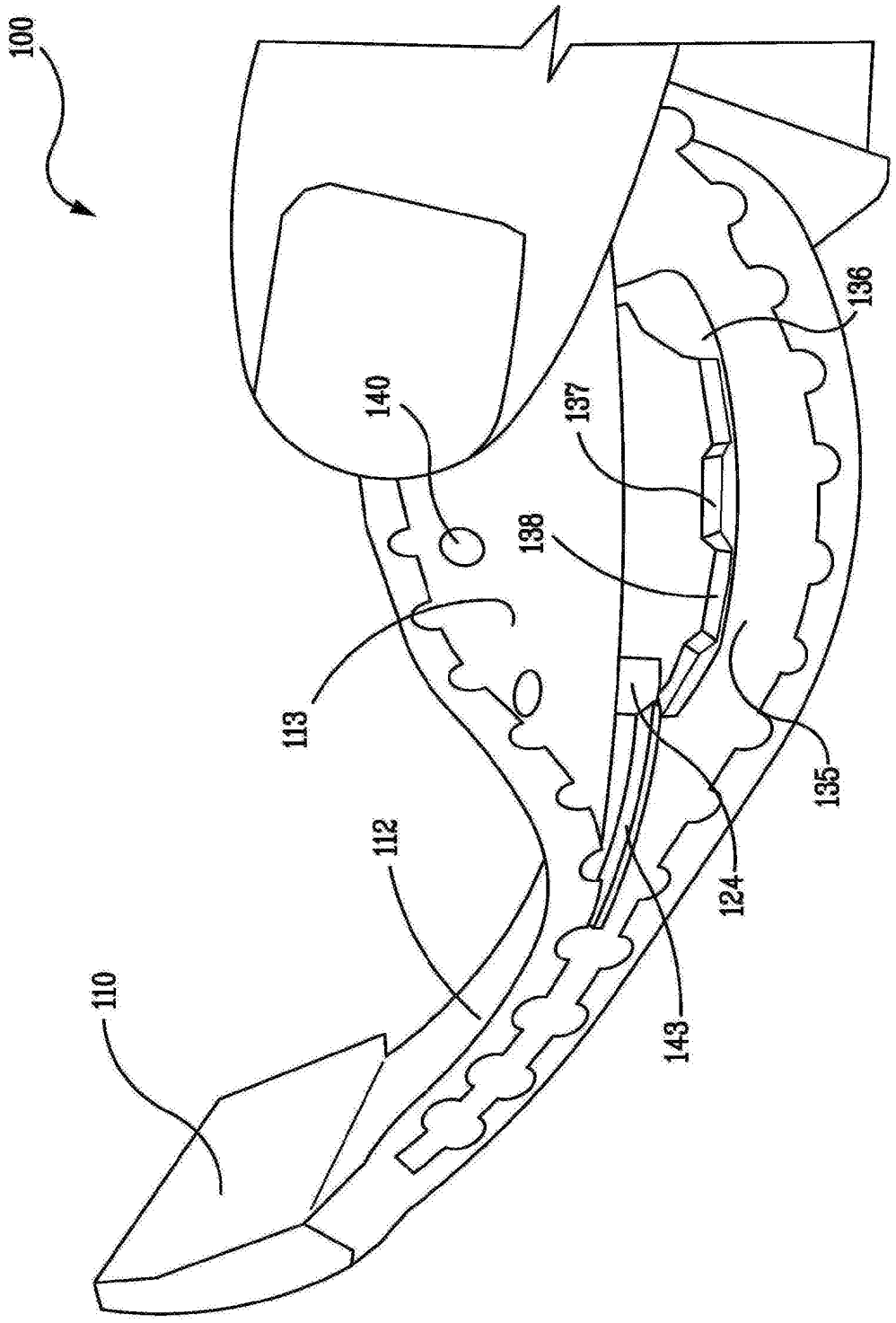


FIG. 7

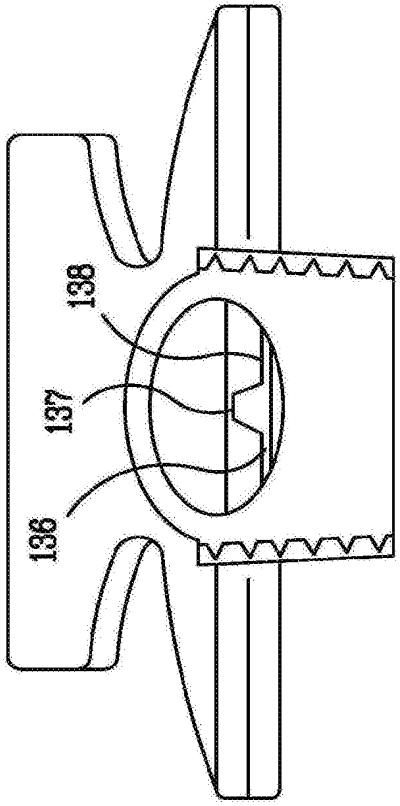


FIG. 8

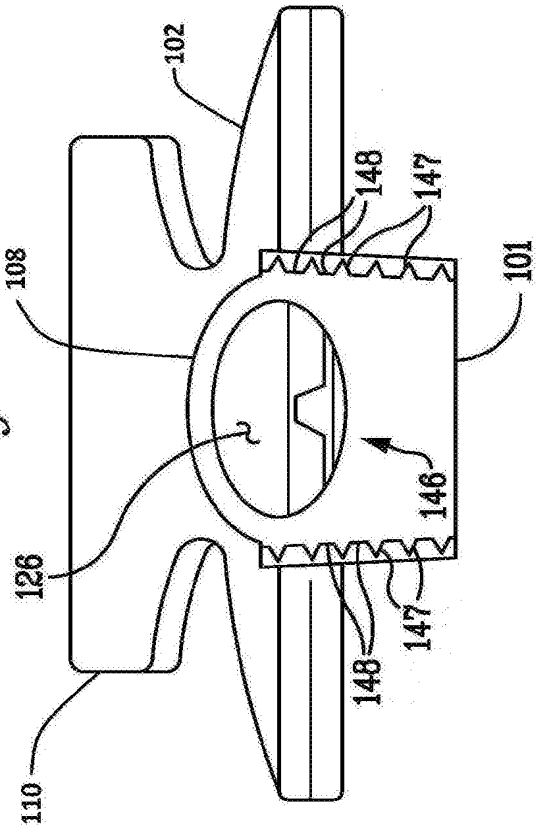


FIG. 9

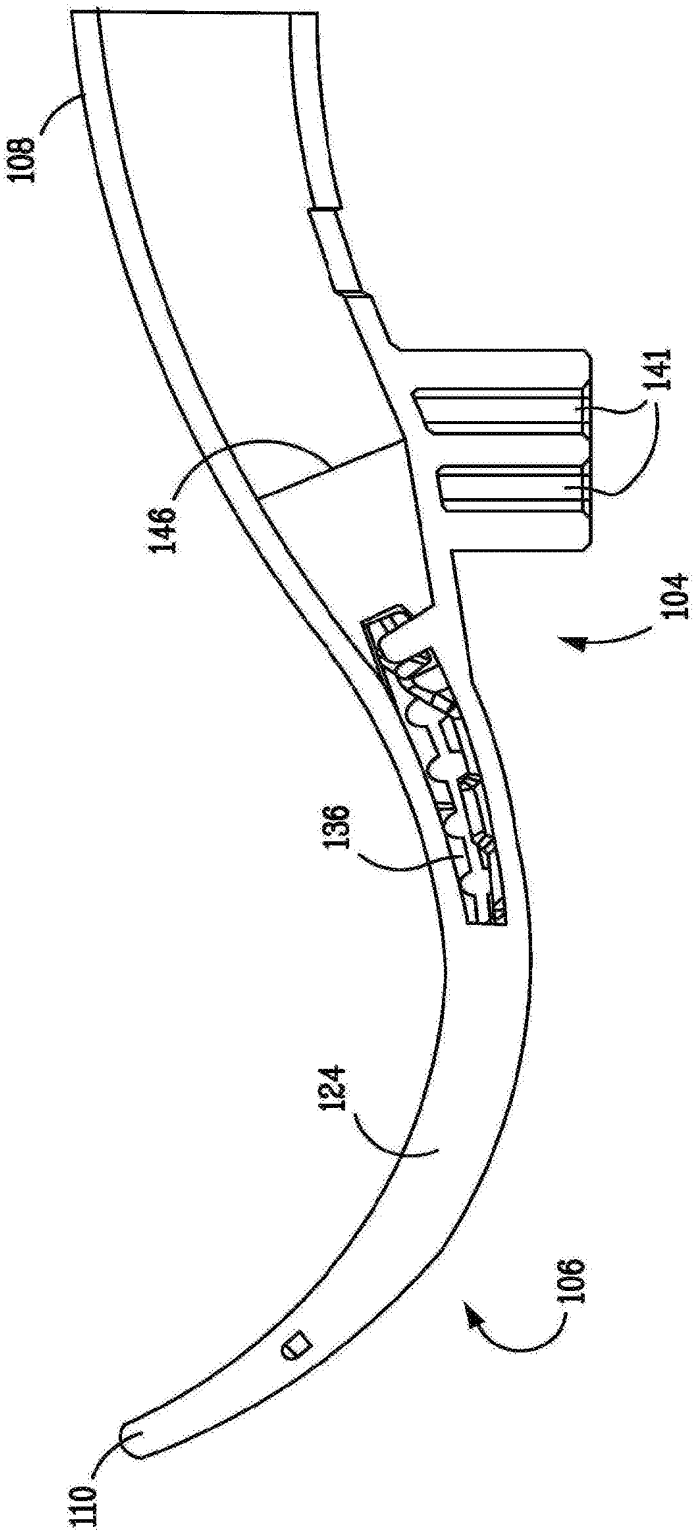


FIG. 10

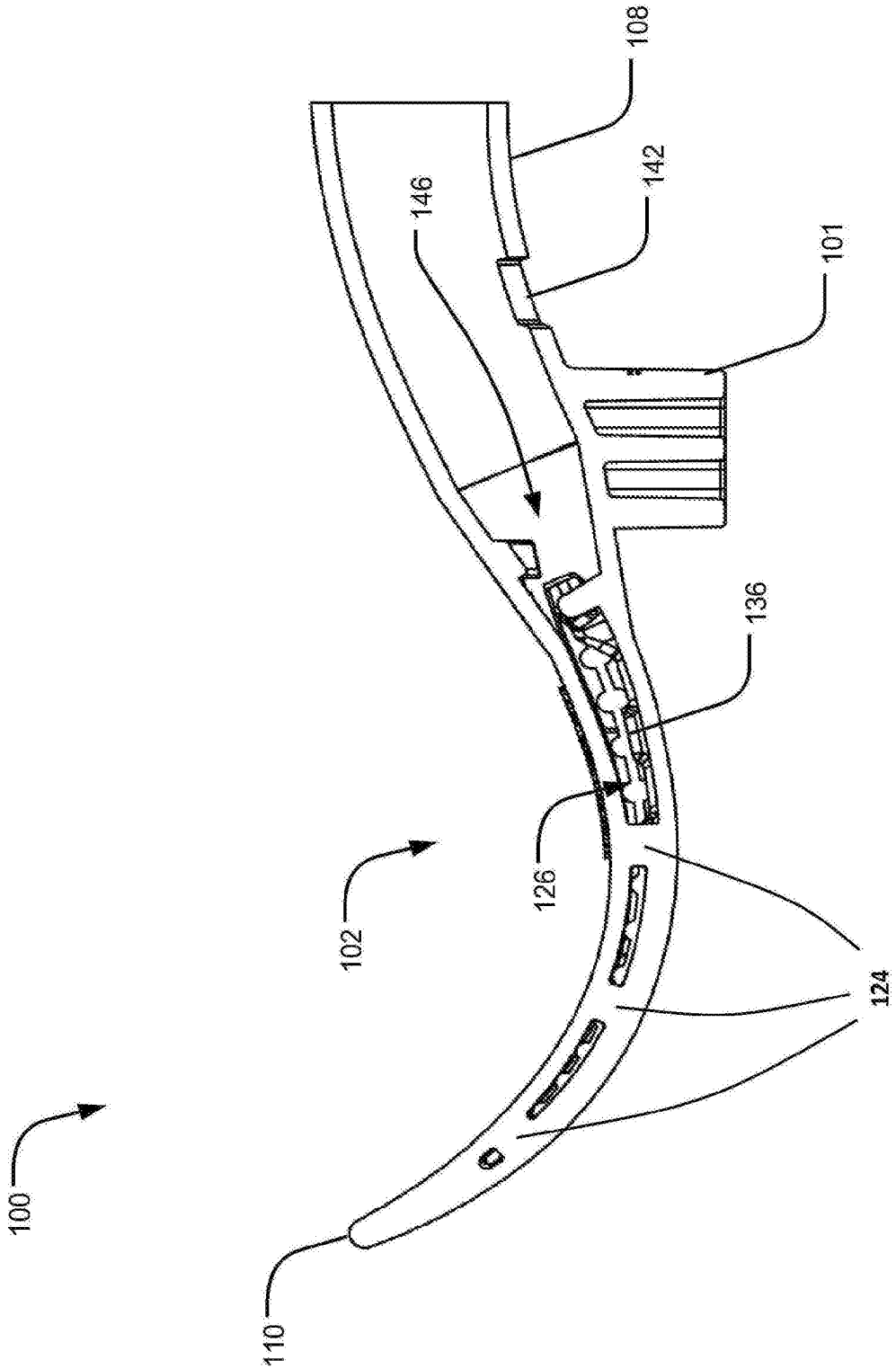


FIG. 11

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

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)

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:

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)

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:
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.

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

Electronic Acknowledgement Receipt

EFS ID:	43765161
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	14-SEP-2021
Filing Date:	27-MAR-2014
Time Stamp:	18:55:59
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-001COA_IDS_Statement_9-14-21.pdf	96018 e90c264a57e38ab912c091080c665a4ef03acbee	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COA_IDS_1449_9-14-21.pdf	223057 931192f27e151b35040e28019a4a94506a69465a	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Foreign Reference	WO_2020231864.pdf	1224937 94e93fe92cca10548ae9e2f8b8607c11d618a5ef	no	29
Warnings:					
Information:					
4	Non Patent Literature	PCTUS2014032892_InternationalPreliminaryReportOnPatentability_6-14-16.pdf	334202 7b192fb9ea41dea74c303a365c828775974a5c96	no	6
Warnings:					
Information:					
		Total Files Size (in bytes):	1878214		

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.: 14/228,046 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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.

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 14, 2021

By: _____/Ruby L. Chung/_____
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,046	03/27/2014	Thien Nguyen	INCEP-001COA	7700

138718 7590 10/06/2021

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

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
10/06/2021	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

Office Action Summary	Application No. 14/228,046	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 09/14/2021.

☐ 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) 2-11,13-16 and 19-23 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) 2-11,13-16 and 19-23 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: _____.

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 allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). 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, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 06/17/2021 has been entered.

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 2-11, 13-16, and 19-23,** 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 21 and 22 each is 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: the pocket forming an interior open space; the connecting wall connecting the first wall to the second wall along the exterior edges thereof, defining said interior open space of the pocket.
- Claims 21 and 22 each recites the term "substantially" (claim 21 line 10; claim 22 line 13) which is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.
- Claim 21 recites "one or more perforations (line 20); it is unclear whether such limitation is the same, different from, or part of "a plurality of perforations" previously defined in line 2.
- Claim 21 recites "the interior open space ***of*** the pocket" (line 6), which is indefinite because the pocket is not defined as having such interior open space. Note that claim 21 recites "a pocket having a plurality of perforation in communication with an interior open space" (lines 2-3). There is no indication that the interior open space ***belongs*** to the pocket.
- Claim 22 recites "the protrusion" (line 14) which lacks sufficient antecedent in the claim. It is unclear whether such singular protrusion is the same as, different from, or part of the previously defined "a plurality of protrusions" (in line 10-11)
- Claims 2-6, 8 each recites variation(s) of the limitation(s) "the plurality of perforations" and "the one or more perforations", which are inconsistent;

and it is unclear whether such limitation(s) refer "a plurality of perforations" or "one or more perforations" in claim 1, line 2 and line 20, respectively.

- Claim 10 recites "the protrusions" which lacks sufficient antecedent basis. Note that the base claim 21 recites "a plurality of protrusions" (line 9).
- Claim 19 is missing the verb "is" between "the mouth prop" and "injected-molded" in line 2.
- Claim 23 is incomplete for omitting essential elements and essential structural cooperative relationships of elements, such omissions amounting to gaps between the necessary structural connections. See MPEP § 2172.01. The omitted elements and structural cooperative relationships are: the first wall having an exterior edge, the second wall having an exterior edge corresponding to the exterior edge of the first wall; the connecting wall connecting the first wall to the second wall along the exterior edges thereof, defining said interior open space of the pocket. Currently, claim 23 allows 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.

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. **Claim 23 is rejected under 35 U.S.C. 102(b) as being anticipated by Hirsch (2006/0063129).**

Regarding claim 23, Hirsch discloses a mouth piece 20 comprising a main body portion 20 (Figs. 2-4) configured as a pocket having an interior space 34 (Fig. 8A). The pocket is defined by a first wall 50 having perforations 60 in communication with the interior space 34 of the pocket, a second wall 24 that includes bridge structure (bridge forming 80 and 82) having protrusions (forming 80, 82) protruding from the interior surface of the second wall 24 toward the first wall 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.

There is a connecting wall 62/64 that connects the first wall 50 and second wall 24 across a span therebetween (Figs. 2-4). There is a suction connector portion 74 connected to a first end 62 of the main body portion, the suction connector configured to connect a vacuum source to the interior space of the pocket (Figs. 2-5; paragraph 66).

There is a cheek retractor 52 connected to a second end 22 of the main body portion, the second end 22 is opposite from the first end 62 (Fig. 2).

Response to Arguments

7. Claims 2-11, 13-16, and 19-22, are replete with 112 indefinite issues as detailed above in the 35 U.S.C ground(s) of rejection.

Claim 23 is very broad and also contains 112 indefinite issues such that the claim allows for mis-interpretation and/or misconstruction of the invention.

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

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	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	09/30/2021	05/31/2016	11/01/2016	05/30/2017	12/26/2017	10/01/2018	07/09/2019	01/06/2020	11/21/2020
	1	-								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
	10	✓								
	11	✓								
	12	-								
	13	✓								
	14	✓								
	15	✓								
	16	✓								
	17	-								
	18	-								
	19	✓								
	20	✓								
	21	✓								
	22	✓								
	23	✓								

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043,046	11/03/2015	HDM
Update Search	05/31/2016	HDM
Update Search	10/03/2016	HDM
A61C 17/04, 0208	11/01/2016	HDM
Update Search	11/01/2016	HDM
Udpate Search	05/30/2017	HDM
Update Search	12/26/2017	HDM
Update Search	07/09/2019	HDM
Update Search	01/06/2020	HDM
A61C17/08,0208	02/27/2021	HDM

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

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
433	93	11/03/2015	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	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,046	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor Search	11/03/2015	HDM
Review searches of parent case 14/100323	11/03/2015	HDM
Update Search	05/31/2016	HDM
Update Search	10/03/2016	HDM
Update Search	11/01/2016	HDM
Update Search	05/30/2017	HDM
Update Search	12/26/2017	HDM
Update Search	10/01/2018	HDM
Update Search	07/09/2019	HDM
Update Search	01/06/2020	HDM
Update Search	11/21/2020	HDM
Interference text search	02/27/2021	HDM
Update Search	09/30/2021	HDM

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
A61C	17/08, 0208	02/27/2021	HDM

/Hao D Mai/ Examiner, Art Unit 3772	

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,046
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COA

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-	1,731,322	10/15/1929	Riddle	
		US-	2020/0352680	11/12/2020	Nguyen	
		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
		WO 2020/231864	11/19/2020	Dryshield, LLC		

Examiner Signature	/Hao D Mai/	Date Considered	09/30/2021

*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)

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	14/228,046
	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-001COA

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 6/14/16	
		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Office Action mailed 6/25/21	
		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; 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	09/30/2021

*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.

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.

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S163	2,029	A61C17/0208,04,043,046.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2021/02/27 08:49
S164	3,226	A61C17/08,0208,043,046.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2021/02/27 08:52
S165	15	S164 and suction$3 and (collapse with prevent$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2021/02/27 08:53
S166	4	("4017975" | "6474990" | "9044293").PN. OR ("9956062").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2021/02/27 08:54
S167	175	A61C17/08,0208,043,046.cpc. and mouthpiece	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2021/02/27 08:59
S168	17	A61C17/08,0208,043,046.cpc. and mouthpiece and protrusion	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2021/02/27 08:59
S173	14	("3101543").URPN.	USPAT	ADJ	OFF	2021/03/01 18:37
S174	27	("3101543" | "3324855").PN. OR ("3758950").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2021/03/01 18:43
S175	48	"4511329"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2021/03/22 14:50
S176	6	(("4511329") or ("5037298") or ("5460524") or ("5516286") or ("6267591") or ("8535056")).PN.	USPAT	OR	OFF	2021/03/22 14:50
S177	2	(("1731322") or ("20200352680")).PN.	US-PGPUB; USPAT	OR	OFF	2021/09/30 19:55
S178	1	(US-1731322-$).did.	USPAT	ADJ	OFF	2021/09/30 19:55
S179	2	(wo-2020231864-$).did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2021/09/30 19:56

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S169	963	A61C17/08,0208,043,046.cpc.	US-PGPUB; USPAT	ADJ	ON	2021/02/27 08:55
S170	1	A61C17/08,0208,043,046.cpc. and (wave protrusion).clm.	US-PGPUB; USPAT	SAME	ON	2021/02/27 08:56
S171	13	A61C17/08,0208,043,046.cpc. and (mouthpiece) and (wall with protrusion)	US-PGPUB; USPAT	SAME	ON	2021/02/27 09:00
S172	12	S169 and (collaps$3 suction prevent$3)	US-PGPUB; USPAT	SAME	ON	2021/02/27 09:12

9/30/2021 9:23:57 PM
C:\Users\hmai1\Documents\EAST\Workspaces\14228046.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	14228046
Filing Date	2014-03-27
First Named Inventor	NGUYEN; Thien
Art Unit	3772
Examiner Name	MAI, HAO D
Attorney Docket Number	084892-514253

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	14228046
	Filing Date	2014-03-27
	First Named Inventor	NGUYEN; Thien
	Art Unit	3772
	Examiner Name	MAI, HAO D
	Attorney Docket Number	084892-514253

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-001COD U.S. Application 14/228, 057; Final Office Action mailed 11-12-21.	☐
	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).	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	14228046
	Filing Date	2014-03-27
	First Named Inventor	NGUYEN; Thien
	Art Unit	3772
	Examiner Name	MAI, HAO D
	Attorney Docket Number	084892-514253

	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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	14228046
	Filing Date	2014-03-27
	First Named Inventor	NGUYEN; Thien
	Art Unit	3772
	Examiner Name	MAI, HAO D
	Attorney Docket Number	084892-514253

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.**

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.

Electronic Acknowledgement Receipt

EFS ID:	44358682
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	24-NOV-2021
Filing Date:	27-MAR-2014
Time Stamp:	12:55:13
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	084892-514253_0_IDS_20211123183016.pdf	42080 e4b348e9ae335561c95a4c5e743d279350864b22	no	5

Warnings:

Information:					
This is not an USPTO supplied IDS fillable form					
2	Non Patent Literature	DryShield_Brochure.pdf	1012487 10d0745aa6fcea2f2012e7e1c440ed8e334f5848	no	4
Warnings:					
Information:					
3	Non Patent Literature	DryShield_single-use_vs_Zyris_Isolite_single-use.pdf	208677 9ec92d29ed9292b9e89915b3b9e98d26ffe11e04	no	1
Warnings:					
Information:					
4	Non Patent Literature	Dryshield_Presentation_Learn_all_about_Dryshield.pdf	189543 0c9bdae9f17fc5017d7b7fed93c89b5659d0ff59	no	1
Warnings:					
Information:					
5	Non Patent Literature	DryShield_Tutorial_Maximize_Your_Dryshields_Experience.pdf	209897 4f765735d56cd2ebf102f2a4302dbef76b4548af	no	1
Warnings:					
Information:					
6	Non Patent Literature	INCEP-001COD_Final_OA_11-12-21.pdf	579142 7e941dd719959a82e0d1a131cc95335440bc936c	no	17
Warnings:					
Information:					
7	Non Patent Literature	INCEP-006D_Non-Final_OA_10-4-21.pdf	322509 b8e34497b38b6ff0e5c500a95f1b1ae493c1f6f6	no	8
Warnings:					
Information:					
8	Non Patent Literature	INCEP-008D_Non-Final_OA_10-4-21.pdf	345010 a2253192a0b2fc8d5d0ddd2d8c811acabb46edcb	no	8
Warnings:					
Information:					

9	Non Patent Literature	INCEP-009D_Non-Final_OA_10-4-21.pdf	560115 85a10db6f46ac9cdf5c02cb98ee26951cc94362c	no	9
Warnings:					
Information:					
10	Non Patent Literature	INCEP-010_Non-Final_OA_10-4-21.pdf	520616 fd068d9e31c18699763c4c19f4c5558b6e90298a	no	8
Warnings:					
Information:					
		Total Files Size (in bytes):	3990076		

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.: 14/228,046 | Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 7700 | Customer No.: 138718

Title: INTRAORAL DEVICE WITH MESH

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

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

Electronic Acknowledgement Receipt

EFS ID:	44364426
Application Number:	14228046
International Application Number:	
Confirmation Number:	7700
Title of Invention:	INTRAORAL DEVICE WITH MESH
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-001COA
Receipt Date:	24-NOV-2021
Filing Date:	27-MAR-2014
Time Stamp:	12:57:36
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-001COA_IDS_Statement_11-24-21.pdf	97276 f07253b31e34da4c3f97d3503f4ec5bf660eb599	no	2

Warnings:

Information:	
Total Files Size (in bytes):	97276

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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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)

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Filing Date	2014-03-27
First Named Inventor	NGUYEN; Thien
Art Unit	3772
Examiner Name	MAI, HAO D
Attorney Docket Number	084892-514253

U.S.PATENTS Remove

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	5720275		1998-02-24	PATIL et al.	
	2	6672305		2004-01-06	PARKER; Jeffrey D.	
	3	10390734		2019-08-27	JOHNSON et al.	
	4	10390916		2019-08-27	RASSIBI; Edmond	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

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	20120015317		2012-01-19	MILO; Anton G. C.	
	2	20170156831		2017-06-08	REYES; Hari Mark	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14228046
	Filing Date	2014-03-27
	First Named Inventor	NGUYEN; Thien
	Art Unit	3772
	Examiner Name	MAI, HAO D
	Attorney Docket Number	084892-514253

	3	20170156833		2017-06-08	REYES; Hari Mark		
	4	20200155284		2020-05-21	BAKER; Gary		

If you wish to add additional U.S. Published Application citation information please click the Add button. Add

FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	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	2992161	FR	A1	2013-12-27	BRAUD VINCENT [FR]		
	2	100654392	KR	B1	2006-12-06	KIM JAE SOO [KR]		X
	3	0042939	WO	A1	2000-07-27	ENGERON MICHAEL G [US]		☐
	4	0061031	WO	A1	2000-10-19	COSTELLO WILLIAM J [US]		☐
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14228046
	Filing Date	2014-03-27
	First Named Inventor	NGUYEN; Thien
	Art Unit	3772
	Examiner Name	MAI, HAO D
	Attorney Docket Number	084892-514253

	1	Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Final Office Action mailed 1-3-22.
	2	Docket No. INCEP-001COE U.S. Patent Application 14/228,061; Non-Final Office Action mailed 12-8-21.
	3	Docket No. INCEP-005 U.S. Patent Application 16/870,745 Non-Final Office Action mailed 12-3-21.

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