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Remarks:
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(54) INTRAORAL DENTAL SUCTION AND ISOLATION SYSTEM

(57) 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 (110), a cheek retractor portion (130), and a suction connector portion (120). In some embodiments, the main body portion (110), cheek retractor portion (130), and suction connector portion (120) (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, translucent, conducive 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.

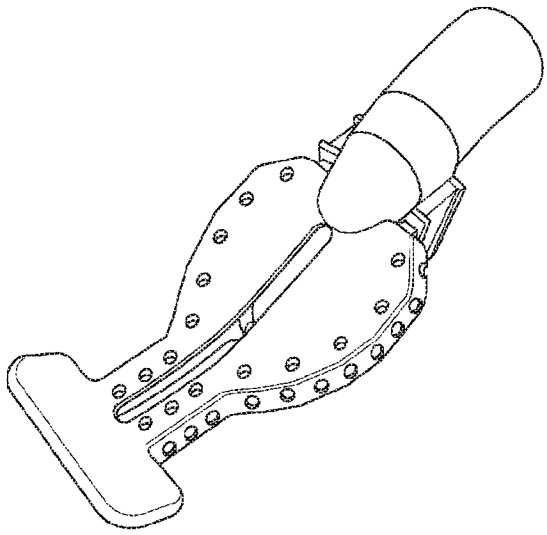


FIG. 1A

EP 3 184 076 A1

EX1020
Petitioner Ascentcare ('970 Patent)

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] 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

[0002] 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.

[0003] 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.

[0004] Different intraoral devices are known. For example, U.S. Patent Application Publication No. 2012/0015320 A1 discloses a bite block, an illumination device having a saliva suction function, and a TIPS (twist isolated plates of suction) for protecting the tongue of a patient. The described solution guides the tongue of the patient such that when dental treatment is performed, the tongue of the patient can be safely and comfortably protected. Furthermore, saliva collected around the throat of the patient can be rapidly removed so that the patient feels little foreign-body like sensations. In addition, the TIPS can isolate the tongue from one side of the mouth cavity to be treated so as to ensure space for treatment. Moreover, the entirety of the mouth cavity of the patient can be illuminated to enable a doctor to conveniently conduct the dental treatment.

[0005] Further, U.S. Patent No. 6,974,321 relates to dental appliances for illuminating and/or vacuum suction of the mouth of a dental patient for examination and/or operative purposes.

[0006] U.S. Patent Application Publication No. US 2009/0274991 A1 teaches devices and methods for providing intra-oral operative isolation, fluid and debris aspiration, and tongue and check retraction.

SUMMARY OF THE CLAIMED INVENTION

[0007] The invention is defined in claims 1 and 15, respectively. Particular embodiments are set out in the dependent claims.

[0008] In particular, a dental mouthpiece is described herein. The mouthpiece 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 comprises a main body portion, a cheek retractor portion, and a suction connector portion. In some embodiments, the main body portion, cheek retractor portion, and suction connector portion (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, translucent, conducive 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.

[0009] The main body portion comprises an enclosed pocket made up of an anterior wall, a posterior wall, and a side wall in between the anterior and posterior walls. The side wall may be perforated with a plurality of perforations. Such perforations may constitute a mesh. Additional perforations may be located on the anterior and posterior walls. The main body portion may further include a slit along a longitudinal, central axis on the anterior wall. Such openings (e.g., perforations and slit) allow for suction of air, fluids, and small debris from the patient's mouth, through the openings into the interior portion, and into the suction connector portion towards a suction source. Because the mouthpiece is made of a flexible and resilient material (*e.g.*, silicone), the mouthpiece is bendable when placed in a patient's mouth to conform to the shape of the mouth. When properly positioned, the suction connector portion may protrude from one side of the patient's mouth, while the main body lies against the back of the patient's mouth, and the cheek retractor presses against the patient's cheek on the opposite side of the patient's mouth.

[0010] The main body further includes an protruding bridge structure on the interior surface of the posterior wall. Such a bridge structure protrudes from the interior surface in a wave shape with crests and troughs. The crests provide a plurality of contact points with the anterior wall to keep the anterior wall separated from the posterior wall during suction. Meanwhile, the troughs provide gaps that allow for suction of air, fluids, and small debris through the bridge structure.

BRIEF DESCRIPTION OF THE FIGURES

[0011]

FIG. 1A is a perspective view of an exemplary mouthpiece with a detachable mouth prop.
FIG. 1B is a top view of the exemplary mouthpiece and detachable mouth prop of FIG. 1A.
FIG. 1C is a bottom view of the exemplary mouthpiece and detachable mouth prop of FIG. 1A.
FIG. 1D is a side view of the exemplary mouthpiece and detachable mouth prop of FIG. 1A.
FIG. 1E is a cross-sectional view of the exemplary mouthpiece and detachable mouth prop of FIG. 1A.
FIG. 2A is a perspective view of the exemplary mouthpiece of FIG. 1A where the detachable mouth prop has been detached.
FIG. 2B is a top view of the exemplary mouthpiece of FIG. 2A.
FIG. 2C is a bottom view of the exemplary mouthpiece of FIG. 2A.
FIG. 2D is a side view of the exemplary mouthpiece of FIG. 2A.
FIG. 2E is a cross-sectional view of the exemplary mouthpiece of FIG. 2A.
FIG. 3A is a front view of an exemplary mouth prop.
FIG. 3B is a back view of the exemplary mouth prop of FIG. 3A.
FIG. 3C is a bottom view of the exemplary mouth prop of FIG. 3A.
FIG. 3D is a perspective view of the exemplary mouth prop of FIG. 3A.
FIG. 3E is a side view of the exemplary mouth prop of FIG. 3A.
FIG. 3F is a top view of the exemplary mouth prop of FIG. 3A.
FIG. 4 is a close-up view of exemplary mesh sides in an exemplary mouthpiece.
FIG. 5 is a close-up view of an internal bridge in an exemplary mouthpiece.
FIG. 6A is a close-up view of an exemplary reinforcing bar in an exemplary mouthpiece.
FIG. 6B is a cross-sectional view of the exemplary reinforcing bar of FIG. 6A.
FIG. 7A is a close-up view of an exemplary cheek retractor portion in an exemplary mouthpiece.
FIG. 7B is a cross-sectional view of the exemplary cheek retractor portion of FIG. 7A.

DETAILED DESCRIPTION

[0012] Embodiments of the present invention provide for a mouthpiece comprising a main body portion, a cheek retractor portion, and a suction connector portion. In some embodiments, the main body portion, cheek retractor portion, and suction connector portion (and subportions thereof) may be molded as one-piece, preferably by injection molding. In an exemplary embodiment, the mouthpiece may be made of a material that is flexible, translucent, conducive 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.

[0013] FIGs. 1A-E are different views of an exemplary mouthpiece with an attachable mouth prop 160, while FIGs. 2A-E are different views of the exemplary mouthpiece of FIG. 1A where the attachable mouth prop 160 has been detached. Such a mouthpiece includes a main body portion 110, a suction connector portion 120, and a cheek retractor portion 130.

[0014] The main body portion 110 may include mesh or perforations 140, a stability bar 150, an open slit 170, and an internal bridge 180. The main body potion 110 connects to a suction connector portion 120 on one end and a cheek retractor portion 130 at the other end. Such a cheek retractor portion 130 may be configured to press against and retract a patient's cheek away from the patient's teeth. When placed in a patient's mouth, the suction connector portion 120 may protrude from one side of the patient's mouth, while the main body portion 110 lies against the back of the patient's mouth, and the cheek retractor portion 130 retracts the patient's cheek on the opposite side of the patient's mouth. The flexibility of the material used to form the mouthpiece allows for some bending when placed in the patient's mouth. The material is, however, resilient enough that the cheek retractor portion presses against the inside of the patient's cheek with such pressure being sufficient to move the cheek away from the patient's teeth.

An 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. The two walls may connect at a superior wall and an inferior wall forming a body that is at least partially enclosed.

[0015] Superior may be used herein to refer to the side that rests against a roof of a patient's mouth when placed therein, and inferior may be used to refer to the side that rests against the floor of the patient's mouth. The superior and inferior sides may be formed identically, which may allow for the mouthpiece to change orientation such that the superior side may appear as the inferior side and vice versa, in the new orientation. When in use, the respective sides of the main body portion 110 may serve to protect and separate the top of the mouth and the bottom of the mouth/tongue. In addition, the main body portion 110 may also serve to protect the back of the mouth (e.g., throat and airway) from falling debris.

[0016] Much of the main body portion 110 of the mouthpiece may be shaped as a straight-line arrowhead or shield whose base generally conforms to the intraoral shape of a patient's mouth. Differently-sized mouthpieces may be provided for differently-sized mouths of adults and children. Part of the base side of the arrowhead may be formed with thicker walls than the rest of the main

body. Such thickening may provide additional stability.

[0017] In addition, the main body portion 110 of the mouthpiece may include a plurality of holes 140 distributed along the superior and inferior sides of the anterior and posterior walls to assist in suctioning of water, saliva and debris from the oral cavity. In some embodiments, a set of holes may also form a mesh along the walls of the superior and inferior edges. FIG. 4 is a close-up view of an exemplary mesh wall in an exemplary mouthpiece.

[0018] At the narrow end of the arrowhead that connects to the cheek retractor portion 130, the main body portion 110 may include a rectangular portion. Narrower than the base of the arrowhead, the rectangular portion may additionally include a reinforcing bar (or stability bar) 150 (described in further detail below) and may be at least partially crossed by a slit 170 (described in further detail below) into the interior of the pocket of the main body portion 110.

[0019] Stability bar 150 may be a protrusion or otherwise a thickened area that reinforces the stability of the rectangular portion and assist in shaping this region to the intraoral posterior shape of a patient's mouth. FIG. 6A is a close-up view of an exemplary stability bar 150 of an exemplary mouthpiece. FIG. 6B is a cross-sectional view of the exemplary reinforcing bar in the cheek retractor connector portion of FIG. 6A.

[0020] In some embodiments, the internal, rectangular-shaped reinforcing or stability bar 150 may be located distally to the internal wavelike bridge structure 180 and attached to both the interior side of the posterior surface of the main body and the rectangular portion. Such a stability bar 150 may be located in the area where a positioned mouthpiece begins to wrap from the lingual side of the most posterior mandibular tooth, around the distal side of the most posterior tooth, and to anterior side of the most posterior mandibular tooth, thereby assisting in shaping the mouthpiece to the general intraoral shape of a patient's mouth.

[0021] Various embodiments of the mouthpiece may further include a longitudinal, open slit 170 extending over approximately two-thirds of the main body on the anterior surface. Running along the center of the main body across the rectangle and most of the arrowhead, such a slit 170 may assist in capture and suction of water, saliva and debris, as well as assisting in cleaning and maintenance.

[0022] Additionally, the main body of the mouthpiece may include a bridge structure 180 on an interior surface to ensure that the anterior and posterior surfaces remain separated during suction. FIG. 1E is a cross-sectional view of the mouthpiece in which the bridge structure 180 is illustrated. FIG. 5 is a close-up view of the bridge structure 180 without the surrounding walls of the main body portion. Such a bridge structure 180 may be formed as an wave-like protrusion that generally corresponds to the distance between the anterior and posterior walls extending substantially (e.g., within 1 mm) the full distance at its crest and substantially flush to the surface at its trough. In some embodiments, the bridge structure 180 may be centrally-located in the main body portion 110 of the mouthpiece. The gaps (or troughs) between the waves of the bridge structure 180 assist in the suction-driven transfer of water and saliva to the suction connector portion 120 and ultimately, into a central suction vacuum. In some embodiments, the bridge structure 180 may follow the shape of a logo (e.g., an arrowhead or shield).

[0023] The suction connector portion 120 may be oval-shaped and also attached to the main body portion 110. The suction connector portion 120 may be formed with thicker walls than the main body portion 110 and configured to attach to a high-suction vacuum adapter and to assist in transferring water, saliva, and debris from the oral cavity to the external adapter for removal. The suction connector portion 120 may also include an internal stop to assist in sliding the mouthpiece onto the adapter to a desired depth. The suction connector portion 120 may additionally have an external, concave, notched region 210 that corresponds to a removable strap such that when the strap is in place, the external walls of the strap and the rest of the connector portion may be flush.

The check retractor portion 130 is illustrated as a hammerhead distal region, which may be attached to the main body portion 110. FIG. 7A is a close-up view of an exemplary cheek retractor portion 130 in an exemplary mouthpiece. FIG. 7B is a cross-sectional view of the exemplary cheek retractor portion 130 of FIG. 7A.

[0024] The mouthpiece may be used with a mouth prop 160, as illustrated in FIGs. 1 (with a mouth prop 160) and FIGs. 2 (illustrated without the mouth prop 160). FIGs. 3A-E provide different close-up views of an exemplary mouth prop 160. The removable strap 310 may be attached to mouth prop 160, which may be used to prop open a patient's mouth and teeth. In this regard, the suction connector portion 120 may additionally have an external plug 220 (FIG. 2C) protruding from the posterior side of the suction connector portion 120. Such a plug 220 may correspond to and serve to connect with an opening in the mouth prop 160. The mouth prop 160 may be reinforced by the presence of the plug 220 in the opening, thereby resulting in a more crush-resistant, nearly incompressible, and stable mouth prop 160. In some embodiments, the suction connector portion 120 may further have a cutout 230 (*e.g.*, which may be shaped as a logo) providing extra interlocking with a corresponding protrusion (*e.g.*, which may also be shaped as a logo) on an external high-suction vacuum adapter.

[0025] The mouth prop 160 may be made of thickened silicone material injection molded in a single piece with an elastic strap corresponding to the circumference of the suction connector portion. The mouth prop 160 has an internal, rectangular-shaped female slot designed to fit snugly with the external, rectangular-shaped male plug 220 of the suction connector portion 120 of the mouthpiece. Mouth props may be made in different sizes for differently sized mouths. Because the mouth prop and mouthpiece are detachable from each other, different siz-

es of each may be mixed and matched as needed for a particular patient's mouth.

[0026] 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.

[0027] Particular aspects of the present disclosure are set out in the following numbered clauses:

1. A dental mouthpiece composed of a material, the dental mouthpiece comprising: a main body portion comprising a defined pocket having an anterior wall, a posterior wall, and a side wall 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 configured to press against a cheek of a patient when placed in a mouth of the patient, wherein resilience of the material causes the cheek retractor portion to retract a cheek of the patient away from the teeth of the patient; and a suction connector portion for connecting the interior portion of the main body to a vacuum suction source.

2. The mouthpiece of clause 1, wherein the side wall includes a plurality of perforations.

3. The mouthpiece of clause 1, wherein the anterior wall and the posterior wall each includes a plurality of perforations.

4. The mouthpiece of clause 1, wherein the anterior wall further includes a slit along a central axis.

5. The mouthpiece of clause 1, further comprising a stability bar protruding from an interior surface of the posterior wall, wherein a thickness of the stability bar increases resilience of the cheek retractor portion during bending.

6. The mouthpiece of clause 1, wherein the main body portion, the cheek retractor portion, and the suction connector portion are formed by injection-molded as one piece.

7. The mouthpiece of clause 1, wherein the material used in the injection-molding is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

8. The mouthpiece of clause 1, further comprising a bridge structure protruding from an interior surface of the posterior wall, the protruding bridge struchue comprising a plurality of spaced contact points that keep the anterior wall separated from the posterior wall during suction.

9. The mouthpiece of clause 8, 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.

10. The mouthpiece of clause 9, wherein troughs of the wave shape are configured to allow suction through the bridge structure.

11. The mouthpiece of clause 1, wherein the suction connector portion comprises an internal stop to assist in positioning of a vacuum suction source or a vacuum adaptor.

12. The mouthpiece of clause 1, further comprising a detachable mouth prop.

13. The mouthpiece of clause 12, 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.

14. The mouthpiece of clause 13, wherein the strap is injection-molded in a single piece with the mouth prop.

15. The mouthpiece of clause 1, wherein the suction connector portion further comprises an external plug protrusion corresponding to an opening in a mouth prop associated with the strap.

16. The mouthpiece of clause 15, wherein the plug protrusion fits into the opening to provide additional crush-resistance and decreased compressibility during biting by the patient.

17. The mouthpiece of clause 1, wherein the suction connector portion comprises a cutout corresponding to a protrusion on a vacuum adapter for an interlocking fit.

18. The mouthpiece of clause 1, wherein the anterior wall and the posterior wall have different thicknesses.

[0028] 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 scope of the invention as defined by the appended claims.

[0029] 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.

Claims

1. A dental mouthpiece composed of a bendable material, the dental mouthpiece comprising:

   a main body portion (110) comprising a defined pocket having an anterior wall, a posterior wall, and a side wall 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, wherein the posterior wall comprises a bridge structure protruding from an interior surface of the posterior wall in a wave shape, the protruding bridge structure comprising a plurality of spaced contact points that keep the anterior wall separated from the posterior wall during suction, wherein the spaced contact points are at crests of the wave shape, and wherein a plurality of troughs of the wave shape allow for suction through the bridge structure;
   a cheek retractor portion (130) connected to the main body portion (110); and
   a suction connector portion (120) configured to connect the interior portion of the main body portion (110) to a vacuum suction source, wherein the suction connector portion (120) is connected to the main body portion (110) on an end opposite the cheek retractor portion (130).

2. The mouthpiece of claim 1, wherein the side wall includes a plurality of perforations (140).

3. The mouthpiece of claim 1 or 2, wherein the anterior wall and the posterior wall each includes a plurality of perforations (140).

4. The mouthpiece of claim 1, 2 or 3, wherein the anterior wall further includes a slit (170) along a central axis.

5. The mouthpiece of any of the preceding claims, wherein the main body portion (110) is shaped as a straight-line arrowhead and includes a rectangular portion at a narrow end of the arrowhead, wherein the narrow end of the arrowhead is connected to the cheek retractor portion (130), wherein the mouthpiece further comprises a stability bar (150) protruding from an interior surface of the posterior wall, and wherein a thickness of the stability bar (150) is adapted to reinforce stability of the rectangular portion of the main body portion (110).

6. The mouthpiece of any of the preceding claims, wherein the main body portion (110), the cheek retractor portion (130), and the suction connector portion (120) are mold in one piece, preferably by injection molding.

7. The mouthpiece of any of the preceding claims, wherein the material is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

8. The mouthpiece of any of the preceding claims, wherein the suction connector portion (120) comprises an internal stop to assist in positioning of the vacuum suction source.

9. The mouthpiece of any of the preceding claims, further comprising a detachable mouth prop (160), wherein the detachable mouth prop (160) comprises a strap (310) configured to fit around the suction connector portion (120), wherein an external surface of the suction connector portion (120) comprises a notch region (210) corresponding to the strap (310), and wherein an external surface of the strap (310) is substantially flush with a remaining external surface of the suction connector portion (120) when the strap (310) sits in the notch region.

10. The mouthpiece of claim 9, wherein the strap (310) and other portions of the mouth prop (160) are injection-molded as a single piece.

11. The mouthpiece of claim 9 or 10, wherein the suction connector portion (120) further comprises an external plug protrusion (220) corresponding to an opening in the mouth prop (160).

12. The mouthpiece of claim 11, wherein the plug protrusion (220) fits into the opening to provide additional crush-resistance and decreased compressibility.

13. The mouthpiece of any of the preceding claims, wherein the anterior wall and the posterior wall have different thicknesses.

14. The mouthpiece of any of the preceding claims, wherein the cheek retractor portion (130) is configured to press against a cheek of a patient when placed in a mouth of the patient, wherein resilience of the material causes the cheek retractor portion (130) to retract a cheek of the patient away from the teeth of the patient.

15. A combination comprising:

   a mouthpiece according to any of the preceding claims; and
   a vacuum adapter;
   wherein the suction connector portion (120) of the mouthpiece comprises an internal stop to assist in positioning of the vacuum adapter; and/or
   wherein the suction connector portion (120) of the mouthpiece comprises a cutout (230) corre-

sponding to a protrusion on the vacuum adapter for an interlocking fit.

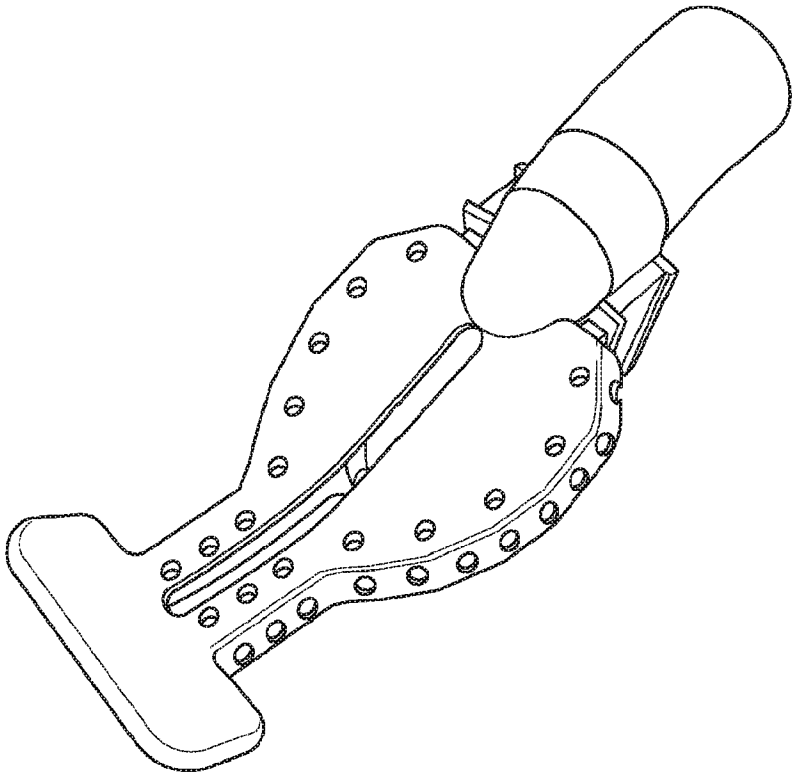


FIG. 1A

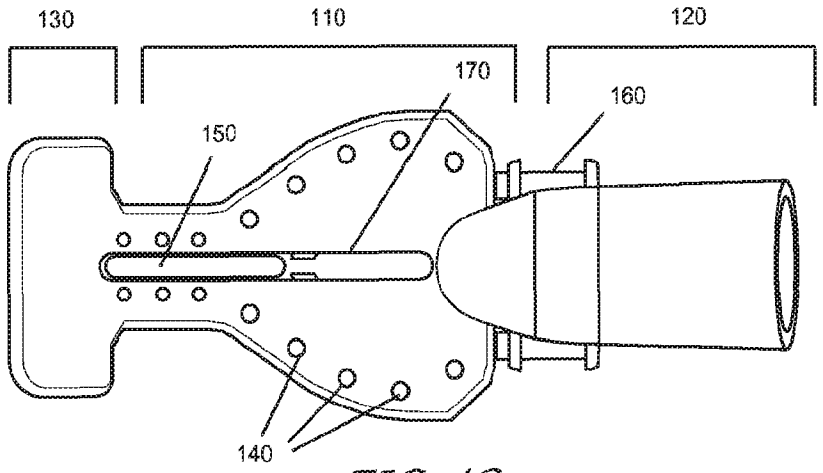


FIG. 1B

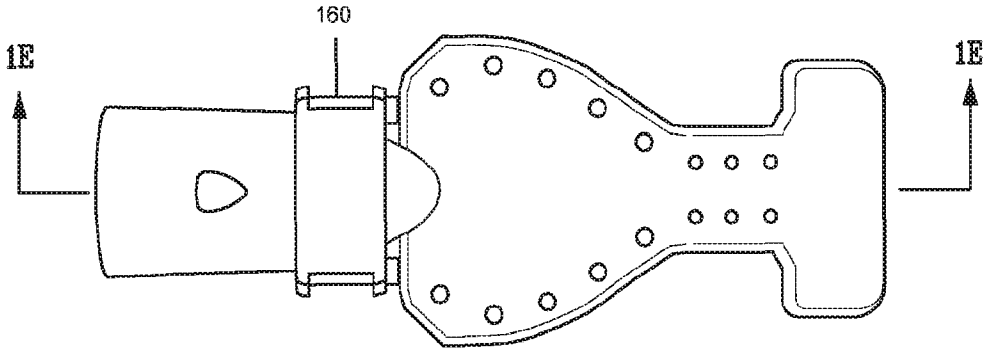


FIG. 1C

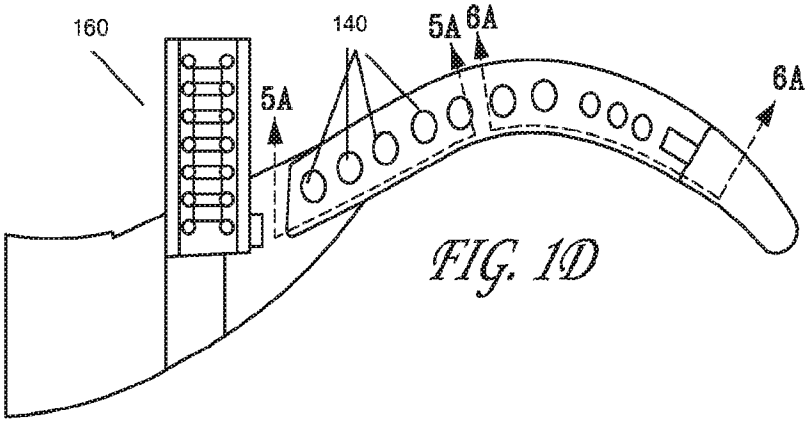


FIG. 1D

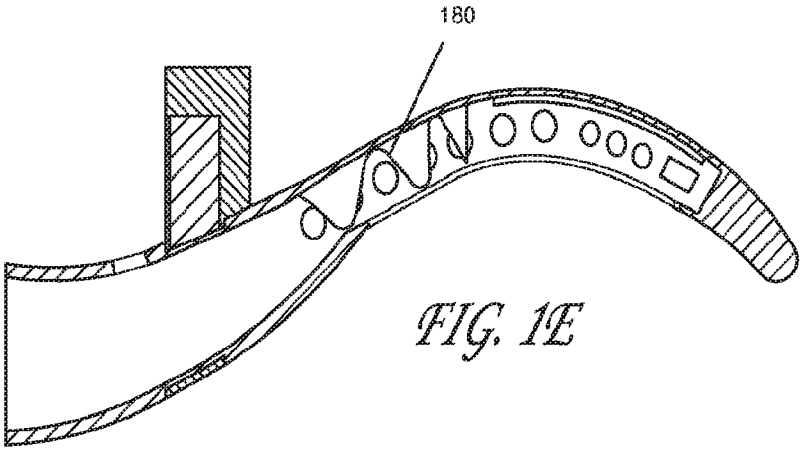


FIG. 1E

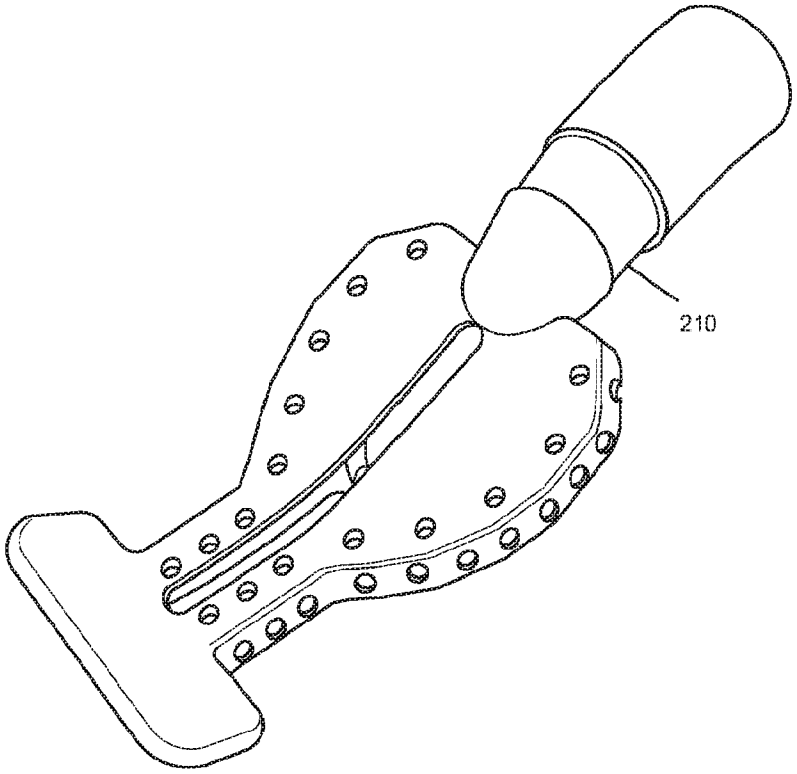


FIG. 2A

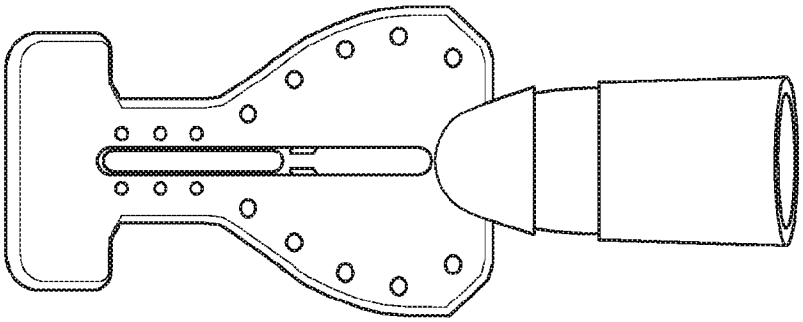


FIG. 2B

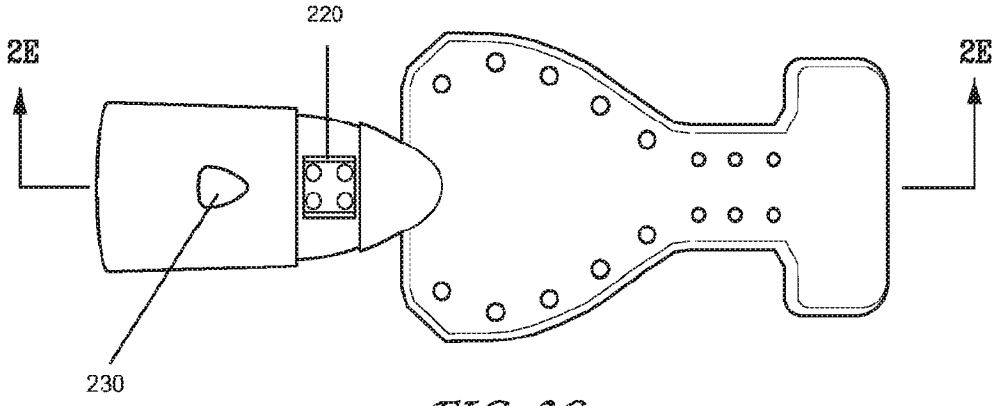


FIG. 2C

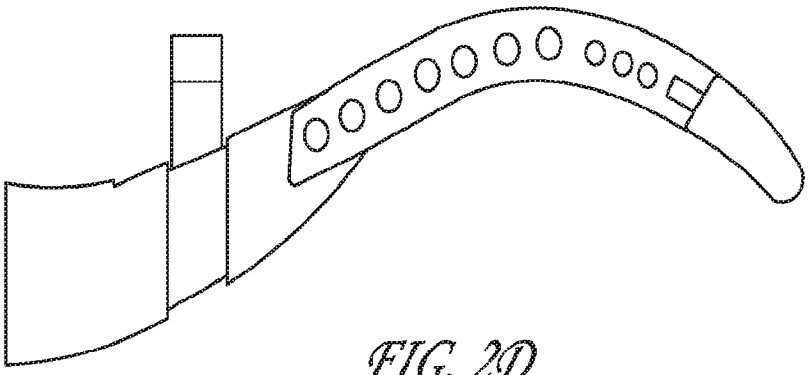


FIG. 2D

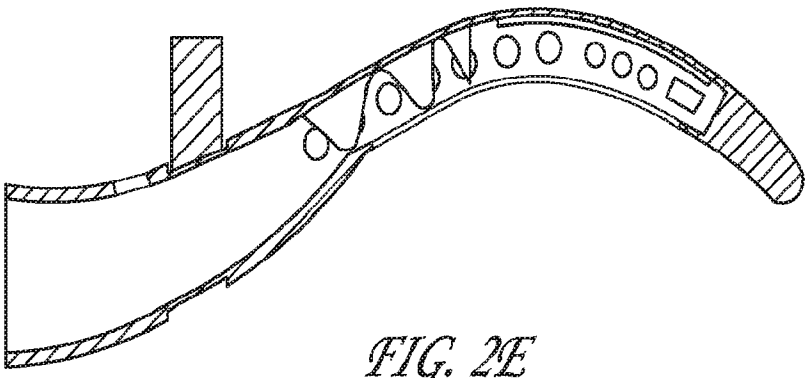


FIG. 2E

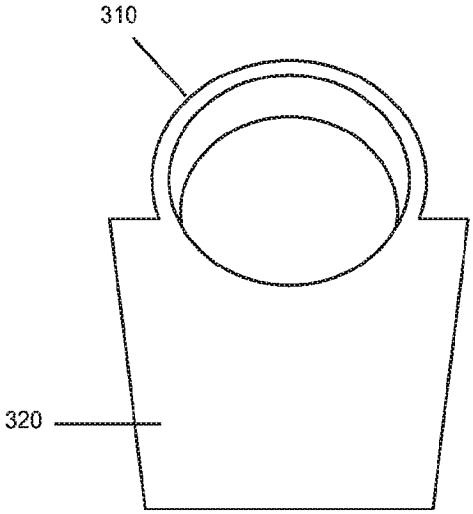


FIG. 3A

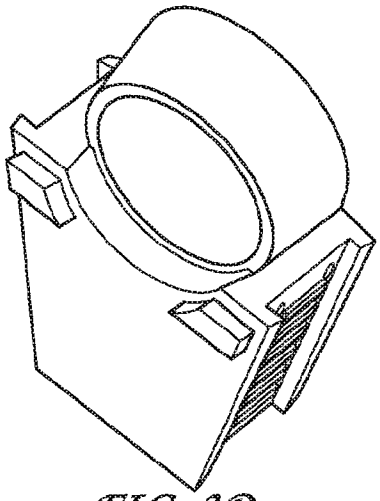


FIG. 3D

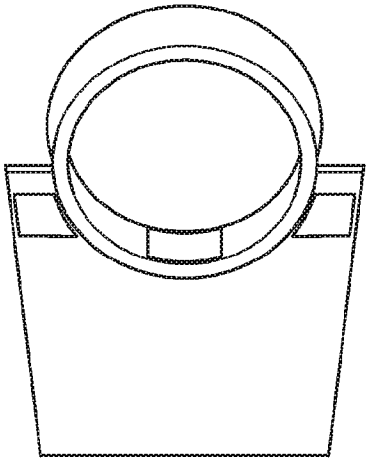


FIG. 3B

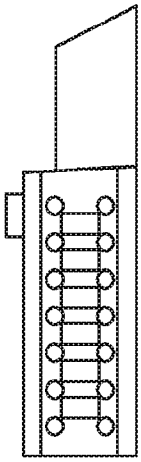


FIG. 3E

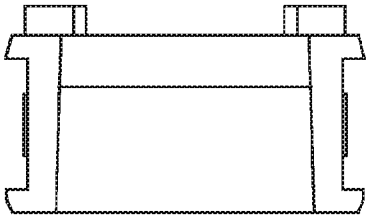


FIG. 3C

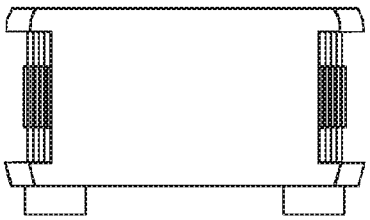


FIG. 3F

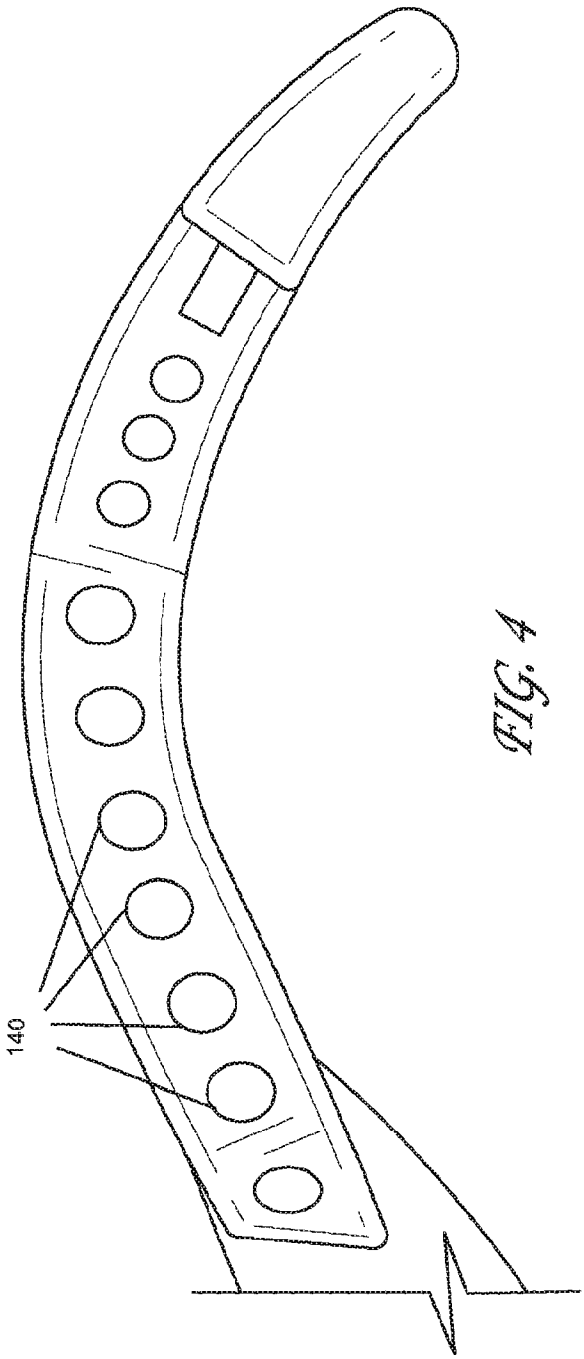


FIG. 4

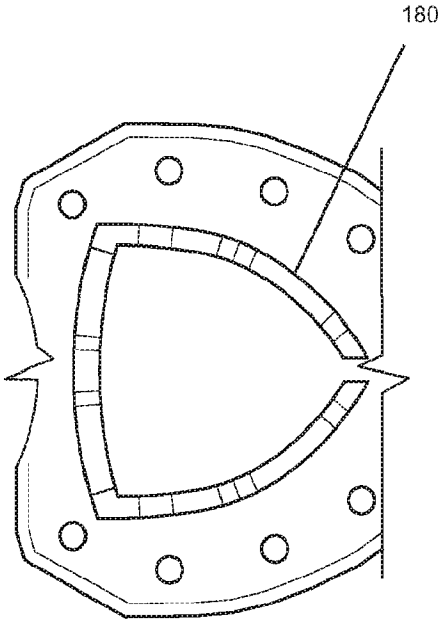


FIG. 5

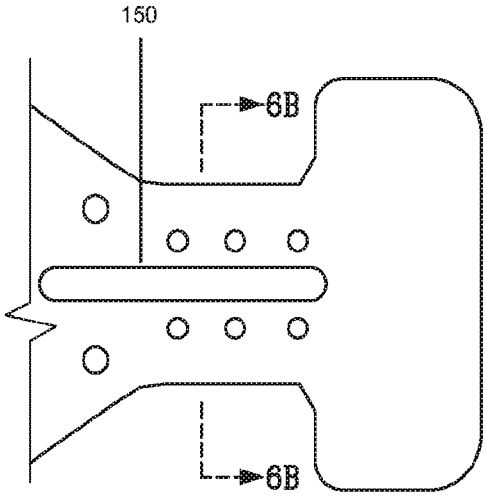


FIG. 6A

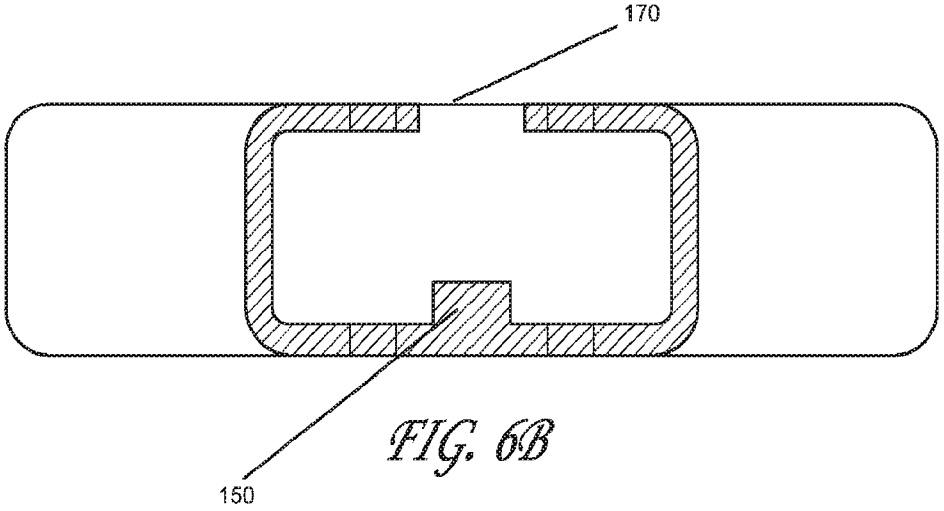


FIG. 6B

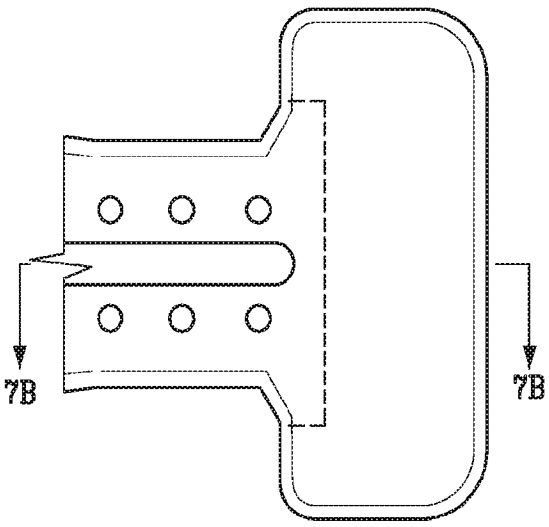


FIG. 7A

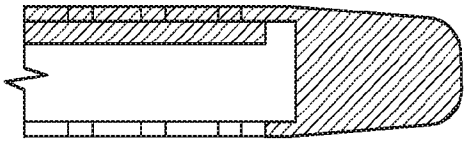


FIG. 7B

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 17 15 0671

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2009/274991 A1 (BLACK BRIAN P [US] ET AL) 5 November 2009 (2009-11-05) * paragraphs [0080], [0122], [0101]; figures 3b,23c * * the whole document *	1-3,5-8, 14,15	INV. A61C17/00 A61C17/06
A	US 6 213 772 B1 (COSTELLO WILLIAM J [US]) 10 April 2001 (2001-04-10)	1-15	
A	US 6 022 214 A (HIRSCH JAMES A [US] ET AL) 8 February 2000 (2000-02-08)	1-15	

TECHNICAL FIELDS SEARCHED (IPC)

A61C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	16 May 2017	Salvatore, Claudio

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 17 15 0671

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

16-05-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009274991 A1	05-11-2009	US 2009274991 A1	05-11-2009
		US 2011311942 A1	22-12-2011
		WO 2009134295 A1	05-11-2009
US 6213772 B1	10-04-2001	AU 4462700 A	14-11-2000
		US 6213772 B1	10-04-2001
		WO 0061031 A1	19-10-2000
US 6022214 A	08-02-2000	AT 349969 T	15-01-2007
		AU 764984 B2	04-09-2003
		BR 9915455 A	17-07-2001
		CA 2349301 A1	25-05-2000
		DE 69934710 T2	08-11-2007
		EP 1131015 A1	12-09-2001
		ES 2280129 T3	01-09-2007
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		JP 2002529191 A	10-09-2002
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		US 2001008752 A1	19-07-2001
		US 2002039715 A1	04-04-2002
		US 2003143512 A1	31-07-2003
		WO 0028916 A1	25-05-2000

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 20120015320 A1 **[0004]**
- US 6974321 B **[0005]**
- US 20090274991 A1 **[0006]**

Electronic Acknowledgement Receipt

EFS ID:	30176463
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	28-AUG-2017
Filing Date:	27-MAR-2014
Time Stamp:	17:02:50
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	INCEP-001COE_IDS_Statement_8-24-17.pdf	18973 ea54977baa04c2fa4e9a023777d5b3cf44ff4f8c	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COE_IDS_1449_8-24-17.pdf	54946 a34218fef28e107280080611b82aa675d22627c2	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Foreign Reference	EP_3184076.pdf	1862059 7fc2233763ad1f02bf20136a540b4b7cb0741804	no	21
Warnings:					
Information:					
4	Non Patent Literature	EP_17150671_Extended_EP_Search_Report_5-29-17.pdf	769177 0e6bff63e4ca8ad044040074bc053ab7f10f5aea	no	8
Warnings:					
Information:					
		Total Files Size (in bytes):	2705155		

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.: 14/228,061 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191 Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

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

Examiner:

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

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

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

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

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

Respectfully submitted,
POLSINELLI LLP

Dated: August 24, 2017

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

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,061	03/27/2014	Thien Nguyen	INCEP-001COE	6191

138718 7590 10/20/2017

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

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3732	

NOTIFICATION DATE	DELIVERY MODE
10/20/2017	ELECTRONIC

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

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

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

uspt@polsinelli.com
sfpatent@polsinelli.com

Office Action Summary	Application No. 14/228,061	Applicant(s) NGUYEN ET AL.	
	Examiner HAO D. MAI	Art Unit 3732	AIA (First Inventor to File) Status No

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

Period for Reply

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

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

Status

1)☒ Responsive to communication(s) filed on *08/28/2017*.

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

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

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

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

Disposition of Claims*

5)☒ Claim(s) *3-12 and 15-21* 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) *3-12 and 15-21* 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 3-12 and 15-21 are rejected on the ground of nonstatutory double patenting over claims 18-35 of U.S. Patent No. 8,911,232 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

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 claim 21 essentially claims the subject matter of the patent claim 18. The difference between the application claims and the patent claims lies in the fact that the patent claims include more elements and are thus much specific. Claim 21 recites "the strap portion corresponds to a circumference of the suction connector and configured to removably

attach to the circumference of the suction connector" (claim 21 lines 7-9), which corresponds to and/or broader than the patent claim 18's recitation "an external surface of the suction connector portion comprises a notch region corresponding to the strap" (patent claim 18 column 7 lines 42-44).

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

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 15-16 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 15 recites "the bridge structure" which lacks antecedent basis in the claims. Claim 16 is rejected herein as indefinite because claim 16 depends on indefinite claim 15.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 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.

7. **Claim 3-12, 15-18, and 20-21, are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by Hirsch et al. (2003/0134253).**

Regarding claim 21, Hirsch et al. discloses a dental mouthpiece (Fig. 2) comprising a main body portion 50 that is configured as a pocket (i.e. interior of 50) having an interior defined by: an anterior wall (convex face of 50 shown in Fig.4); a posterior wall (concave face 50 shown in Fig. 3), and a side wall (edge 22 or 56) connecting the anterior wall to the posterior wall. There is a suction connector 74/84/86 extending from the main body portion and a mouth prop 26 (Fig. 2). The mouth prop 26 comprising a bite block portion 94 and a strap portion 100; wherein the strap portion 100 corresponds to a circumference of the suction connector 74/84/86 of the suction connector. Note that the claim language "correspond to" is very broad. As such, the strap portion 100 is considered to correspond to a circumference of the suction connector 74/84/86 because the strap portion 100 is shown to receive or mate with the suction connector 74/84/86 (Fig. 2; paragraphs 52-55).

As to claim 3, the mouth prop 26 comprises a bite block portion 94 and a strap portion 100 (to receive portion 86/90) which are formed as a single piece (Fig. 2). As to claim 4, Hirsch discloses the device being formed of elastic thermoplastic elastomer (paragraph 74). As to claim 5, Hirsch et al. shows the suction connector portion comprises at least a notch region (e.g. notch between 88 and 90, notch between 86 and 78, etc.) corresponding to the strap portion 100 (Fig. 2). Fig. 3 shows an external surface of the strap portion 100 is substantially flush with a remaining external surface of the suction connector portion 74/84/86 when the strap portion sits in the notch region. As to claims 6-7, the suction connector portion 74/84/86 comprises an external plug protrusion 88/90/86 corresponding to an opening 100 in the bite block portion,

capable of providing additional crush-resistance and decrease compressibility during biting by a patient. As to claim 8, the suction connector portion 74/84/86 has various cutouts, e.g. cutout opening 84, cutout between edges 88 and 90. Note that the vacuum adapter is not actively claimed and therefore not given patentable weight. As to claim 9, the suction connector portion 74/84/86 connects the interior of the pocket (internal channels of 50) to a vacuum source via port 108 (Figs. 2-7). As to claims 10-11, the anterior wall, posterior wall, and/or side wall comprise a plurality of perforations 60, 68 (Figs. 3-4). As to claim 12, note the cheek retractor 52 (Fig. 2, paragraph 46); the cheek retractor 52 is formed of the same resilient/elastic material as the body 50. As to claims 15-16, note the bridge structure 24 having a wave shape defined by spaced protrusions (e.g. side walls of channel 80). As to claim 17, alternatively, element 24 forming a part of the posterior/concave wall, the end portion 24 (with no protruding opposite wall walls) is considered to be equivalent to the claimed stability bar as claimed (Fig. 2).

As to claim 18, the claim language "by injection-molded" is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and defined by the recited process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe,* 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Hirsch discloses the end product and the structures thereof as claimed as detailed above with all the essential portions forming the device as one piece. The burden is shifted to applicant to show an unobvious difference between Hirsch' device and the invention that would have resulted from the injection molding process. As to claim 20, the mouth prop 68 is detachable and therefore is inherently

interchangeable with another/second mouth prop. Note that the second mouth prop is not actively claimed and therefore is not given patentable weight.

Claim Rejections - 35 USC § 103

8. 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.

9. **Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirsch et al. in view of Sclafani (5,890,899).** Hirsch discloses the invention substantially as claimed including the material used to form the device being flexible, translucent, high heat-resistant, as evidenced by disclosure of sterilization for reuse (column 5 lines 20-21; column 6 lines 21-27). However, 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 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.

Allowable Subject Matter

10. The previously indicated allowability of claims 5 and 15-16 are withdrawn in view of the amendments made to the claims. Particularly claims 5 and 15-16 have been amended to depend on new claim 21 which is broad and do not encompass all the previously presented but now cancelled base and intervening claims. Claims 5 and 15-16 are rejected as detailed above.

Response to Arguments

11. Applicant's arguments have been fully considered but are not persuasive as having overcome Hirsch et al. New independent claim 21 is much broader than the corresponding previously-presented and now-cancelled independent claim 1. New independent claim allows for broadest reasonable interpretation which is anticipated by Hirsch et al. as detailed above. Applicant's remarks are held to be responded to in the above ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hao D. Mai whose telephone number is (571) 270-3002. The examiner can normally be reached on Monday-Friday 8:00AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Cris Rodriguez, at (571) 272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hao D Mai/
Examiner, Art Unit 3732

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

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,061
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COE

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

Examiner Signature	/Hao D Mai/ (10/16/2017)	Date Considered	10/16/2017

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	Examiner Name	Hao D. Mai
Sheet 2 of 2	Attorney Docket Number	INCEP-001COE

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

Examiner Signature	/Hao D Mai/ (10/16/2017)	Date Considered	10/16/2017

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		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Office Action mailed 6/5/17	

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Sheet	1	of	2

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		EP 3184076	6/28/2017	Incept, Inc.		

Examiner Signature	/Hao D Mai/ (10/16/2017)	Date Considered	10/16/2017

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	Examiner Name	Hao D. Mai
Sheet 2 **of** 2	Attorney Docket Number	INCEP-001COE

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

Examiner Signature	/Hao D Mai/ (10/16/2017)	Date Considered	10/16/2017

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Sheet	1	of	2

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		US-	9,084,656	7/21/2015	Hirsch	
		US-	9,358,086	6/7/2016	Hirsch	
		US-	2003/0134253	7/17/2003	Hirsch et al.	
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	Art Unit	3732
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		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Final Office Action mailed 4/24/17	
		Docket No. INCEP-001COD U.S. Patent Application 14/228,057; Office Action mailed 4/13/17	

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14228061	NGUYEN ET AL.
	Examiner	Art Unit
	HAO D MAI	3732

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

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

CLAIM		DATE								
Final	Original	11/16/2015	06/20/2016	04/04/2017	10/16/2017					
	1	✓	✓	✓	-					
	2	✓	✓	✓	-					
	3	✓	✓	✓	✓					
	4	✓	✓	✓	✓					
	5	✓	✓	O	✓					
	6	✓	✓	✓	✓					
	7	✓	✓	✓	✓					
	8	✓	✓	✓	✓					
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	17	✓	✓	✓	✓					
	18	✓	✓	✓	✓					
	19	✓	✓	✓	✓					
	20	✓	✓	✓	✓					
	21				✓					

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	4	("8911232").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2017/10/16 12:58
L2	1	("20030134253").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2017/10/16 13:17
L3	3368	A61C17/04,0208,043.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2017/10/16 14:04
L4	7	A61C17/04,0208,043.cpc. and (strap with circumference)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2017/10/16 14:04
L5	56	A61C17/04,0208,043.cpc. and (circumference) same (suction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2017/10/16 14:04

EAST Search History (Interference)

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Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14228061	NGUYEN ET AL.
	Examiner	Art Unit
	HAO D MAI	3732

CPC- SEARCHED		
Symbol	Date	Examiner
A61C 17/043, 046	11/16/2015	HDM
A61C 17/04, 0208	06/20/2016	HDM
Update Search	06/20/2016	HDM

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

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

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

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor Search	11/16/2015	HDM
Review searches of parent case 14/100323	11/16/2015	HDM
Update Search	06/20/2016	HDM
Update Search	02/20/2017	HDM
Update Search	10/16/2017	HDM

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

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		US-	9,788,924	10/17/2017	Nguyen	
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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.

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	14/228,061
	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-001COE

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	

Examiner Signature		Date Considered	

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

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

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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

Electronic Acknowledgement Receipt

EFS ID:	30870050
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	07-NOV-2017
Filing Date:	27-MAR-2014
Time Stamp:	13:28:49
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	INCEP-001COE_IDS_Statement_11-6-17.pdf	19515 1b669c24eeb8b7da9376b239878ce00daf2d7397	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COE_IDS_1449_11-6-17.pdf	54988 bb9dc9b2549363ff4cff62bfcd23679d86ae859b	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	74503	

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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: 3732 Examiner: Hao D. Mai

Serial No.: 14/228,061 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191 Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

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
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-001COE	14/228,061	03-27-2014
First Named Inventor:	**Title:**	
Thien Nguyen	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP	

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
/Tam Thanh Pham/	December 20, 2017
Name (Print/Typed) Tam Thanh Pham	**Practitioner Registration No.** 50565

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.:	14/228,061	Group Art No.:	3732
Filed:	March 27, 2014	Conf. No.:	6191
Title:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP	Dkt. No.:	INCEP-001COE

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

AMENDMENT

In response to the Office Action mailed October 20, 2017 (*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 5 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. (cancelled)

3. (previously presented) The mouthpiece of claim 21, wherein the strap portion is injection-molded in a single piece with the bite block portion.

4. (previously presented) The mouthpiece of claim 2, the strap portion is elastic.

5. (currently amended) The mouthpiece of claim 21, wherein an external surface of the suction connector portion comprises a notch region corresponding to the strap portion, and wherein ~~an external surface of the strap portion is substantially flush with a remaining external surface of the suction connector portion when~~ the strap portion sits in the notch region when attached around the circumference of the suction connection portion.

6. (previously presented) The mouthpiece of claim 21, wherein the suction connector portion further comprises an external plug protrusion corresponding to an opening in the bite block portion.

7. (original) The mouthpiece of claim 6, wherein the plug protrusion fits into the opening of the bite block portion to provide additional crush-resistance and decreased compressibility during biting by a patient.

8. (previously presented) The mouthpiece of claim 21, wherein the suction connector portion comprises a cutout corresponding to a protrusion on a vacuum adapter for an interlocking fit.

9. (previously presented) The mouthpiece of claim 21, wherein the suction connector portion connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source provides suction of fluids from the interior of the pocket toward the vacuum source.

10. (previously presented) The mouthpiece of claim 21, wherein the anterior wall, the posterior wall, and/or the side wall comprise a plurality of perforations.

11. (original) The mouthpiece of claim 10, wherein activation of a vacuum source associated with the main body draws fluids from an exterior of the main body through the perforations into the interior of the pocket of the main body.

12. (previously presented) The mouthpiece of claim 21, further comprising a cheek retractor portion connected to the main body portion and having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

13. (cancelled)

14. (cancelled)

15. (currently amended) The mouthpiece of claim 21, ~~wherein the~~ further comprising bridge structure that defines a wave shape, and wherein the bridge structure comprises spaced protrusions [[are]] at crests of the wave shape.

16. (previously presented) The mouthpiece of claim 15, wherein spaces between the spaced protrusions are at troughs of the wave shape.

17. (previously presented) The mouthpiece of claim 21, 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.

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

19. (previously presented) The mouthpiece of claim 21, wherein a material that forms the main body is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

20. (previously presented) The mouthpiece of claim 21, wherein the mouth prop is interchangeable with a second mouth prop that is attachably and detachably associated with the main body portion, the second mouth prop being of a different size.

21. (currently amended) A mouthpiece comprising:

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

an anterior wall,

a posterior wall; and

a side wall connecting the anterior wall to the posterior wall;

a suction connector extending from the main body portion; and

a mouth prop comprising a bite block portion and a strap portion, wherein the strap portion corresponds to a circumference of the suction connector and configured to removably attach [[to]] around the circumference of the suction connector, wherein an external surface of the strap portion is substantially flush with an external surface of the suction connector portion.

REMARKS

Status of the Claims

Independent claim 21 is amended to bring up a limitation from a dependent claim (claim 5), which is also amended to avoid repetition of that limitation. Further, claim 15 is amended to address formalities. Because all of such limitations have been searched, it is respectfully requested that the amendments be entered.

Double Patenting

The Examiner rejects claims 3-12 and 15-21 for non-statutory double patenting over claims 18-35 of U.S. Patent 8,911,232. Because the present claims are currently amended, it is believed that the claims may be considered patentably distinct. As such, the Applicant respectfully requests reconsideration of the current scope of the respective claims and withdrawal of the rejections as appropriate.

Rejections under 35 U.S.C. §112(b)

Claims 15 and 16 are rejected as indefinite due to inconsistencies in antecedent basis. *Office Action*, 3. The present amendments correct the inconsistencies, and Applicant requests that the rejection be withdrawn.

Rejections under 35 U.S.C. §§102-103

Claims 3-12, 15-18, and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Application Publication No. 2003/0134253 to Hirsch et al. ("*Hirsch*"). *Office Action*, 4. Applicant respectfully submits that *Hirsch* fails to teach the claimed 'a mouth prop comprising a

bite block portion and a strap portion, wherein the strap portion corresponds to a circumference of the suction connector and configured to removab**ly attach about the circumference of the suction connector**, wherein an **external surface of the strap portion** is substantially **flush** with an **external surface of the suction connector portion**.'

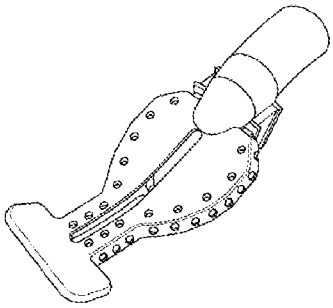


FIG. 1A

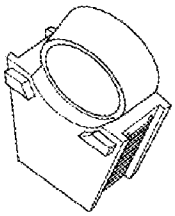


FIG. 3D

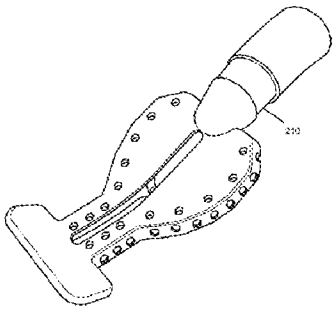
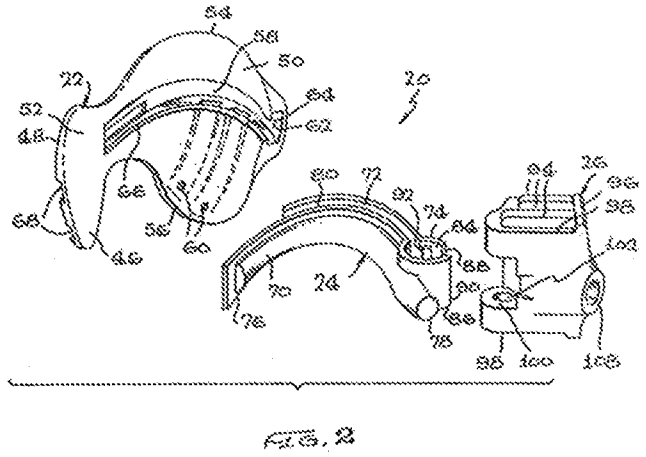
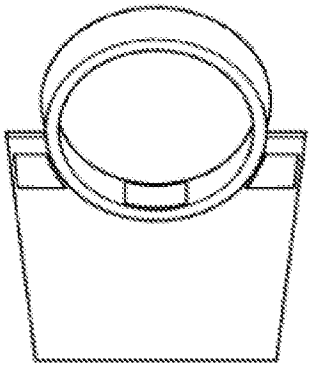


FIG. 2A

As illustrated in the figures provided above, the claimed mouthpiece allows for removable attachment (and detachment) of the bite block portion from the other portions (*e.g.*, main body and suction connector) by way of a strap portion that engages around the circumference of the suction connector. FIG. 1A is a perspective view of the mouthpiece when the mouth prop is attached via the strap portion, while FIG. 3D illustrates the mouth prop (including strap portion) once it has been removed or detached from the other portions of the mouthpiece. FIG. 2A is a perspective view of the mouthpiece when the mouth prop is removed. As illustrated, the mouth prop has a strap that engages around the circumference of the suction connector, and when so engaged, an external surface of the strap is flush—forms a level or even surface—with the external surface of the suction connector portion. Such engagement is absent from *Hirsch*.

Hirsch does not disclose the claimed mouth prop that includes a bite block portion having a strap portion that engages around the circumference of a suction connector in a way where the external surface of the strap and the external surface of the suction connection provides a flush

surface. The *Office Action* points to *Hirsch*'s component "100" as purportedly teaching the claimed strap portion. *Office Action*, 3. *Hirsch* explicitly refers to that component, however, as "pivot portion 100" including "receiving grooves 102 [that] receive the pivot pins 92 of the dispersion lens 70." *Hirsch*, [0055].

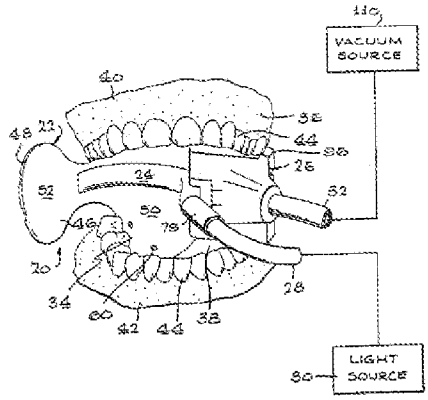
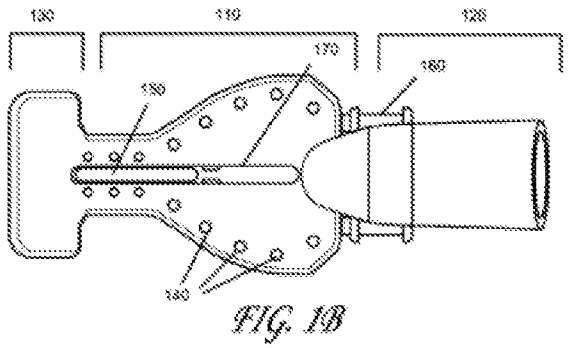
HIRSCH	APPLICANT
 FIG. 2	 FIG. 3B

Engagement at a "pivot portion 100" (*i.e.*, grooves receiving pins of a dispersion lens) does not **attach around a circumference of a suction connector**. Attachment at a pivot point fails to teach attachment around a circumference. There is nothing in *Hirsch* that teaches attachment around a circumference.

Moreover, *Hirsch* fails to teach any "strap" under its plain and ordinary meaning as understood by one having skill in the art having read the *Specification*, let alone the specifically claimed strap that "corresponds to a circumference of the suction connector and configured to removably attach around the circumference of the suction connector" as claimed. A strap attaching to a circumference of a suction connector cannot be taught by grooves receiving pivot pins of a dispersion lens, as purported by the *Office Action*.

Not only are the types of engagement (claimed strap-to-circumference engagement versus *Hirsch*'s grooves-to-pins) wholly distinct, but the portions being engaged (claimed strap-to-

suction connector versus *Hirsch*'s pivot portion-to-dispersion lens) are likewise distinct. *Hirsch*'s dispersion lens is functionally and structurally different from the claimed suction connector. The dispersion lens of *Hirsch* disperses light into a patient's mouth. *See e.g., Hirsch*, [0049]. In contrast, the claimed suction connector portion is recited as having a circumference and extending from the main body portion to connect the pocket interior to a vacuum. *See also Specification*, [0042], [0043]. Thus, *Hirsch* does not disclose Applicant's suction connector portion and a strap corresponding to a circumference of the suction connector.

HIRSCH	APPLICANT
	 FIG. 1B

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

Claims 2-12, 15-18, and 20 depend from independent claim 21 and are allowable for at least the same reasons as claim 21. For at least this reasons, withdrawal of the rejections is requested.

Rejections Under 35 U.S.C. §103

Claim 19 was rejected under 35 U.S.C. 103(a) as being unpatentable over *Hirsch* in view of U.S. Patent No. 5,890,899 by Sclafani ("*Sclafani*"). Applicants respectfully disagree. Because claim 19 depends from independent claim 21, claim 19 is allowable for at least the same reasons as claim 21 from which it depends. Withdrawal of the rejection is 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 the Applicants' invention as defined by the claims is patentable over the references of record. Issuance of a Notice of Allowance is solicited.

Applicant's undersigned representive 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,

December 20, 2017

POLSINELLI *LLP*

/Tam Thanh Pham/

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Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
Tel: (415) 248-2116
IPdocket@polsinelli.com

Electronic Acknowledgement Receipt

EFS ID:	31292056
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	TamThanh Thi Pham/Cheri Houle
Filer Authorized By:	TamThanh Thi Pham
Attorney Docket Number:	INCEP-001COE
Receipt Date:	20-DEC-2017
Filing Date:	27-MAR-2014
Time Stamp:	17:16:10
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-001COE_AFCP_12-20-17.pdf	191864 9f6bf92c371f98ecb27ce11ff568d171cd9a32a1	no	2

Warnings:

Information:					
2		INCEP-001COE_AMENDMENT_12-20-17.pdf	420149 058bfcf8c6a3f1b4423b3a0354a651067886e08b	yes	10

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Response After Final Action	1	1
	Claims	2	4
	Applicant Arguments/Remarks Made in an Amendment	5	10

Warnings:	
Information:	
Total Files Size (in bytes):	612013

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,061	03/27/2014	Thien Nguyen	INCEP-001COE	6191

138718 7590 02/12/2018

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

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3732	

NOTIFICATION DATE	DELIVERY MODE
02/12/2018	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

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	14/228,061	NGUYEN ET AL.	
	Examiner	Art Unit	
	HAO D. MAI	3732	

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

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

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

Date of Interview: *05 February 2018*.

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

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

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

Claim(s) discussed: *21*.

Identification of prior art discussed: *Hirsch et al.*.

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

At preliminary review, the proposed amendment to recite the limitation(s) "wherein an external surface of the strap portion is substantially flush with an external surface of the suction connector portion" does not put claim 21 in condition for allowance because such flushing connection feature as claimed, per se, is not deemed an inventive feature(s). For example, McKelvey (4,083,115) discloses such flushing connection between elements 10 and 11, wherein element 10 comprises a strap portion which is substantially flush with an external surface of element 11.

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

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

☐ Attachment

/HAO D MAI/ Examiner, Art Unit 3732	

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 14/228,061	**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 20 December 2017 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): claims 15-16 under 35 USC 112.

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

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

AFFIDAVIT OR OTHER EVIDENCE

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

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

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

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

REQUEST FOR RECONSIDERATION/OTHER

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

_____.

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

14. ☒ Other: PTO-413B, PTO-2323.

STATUS OF CLAIMS

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

Claim(s) allowed: .
Claim(s) objected to: .
Claim(s) rejected: 3-12, 15-21.
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: The proposed amendment raise new issues that would require further consideration and/or search and do not materially reduce or simplify the issues for appeal (e.g. may necessiate new ground(s) of rejection). At preliminary review, the proposed amendment to recite the limitation(s) "wherein an external surface of the strap portion is substantially flush with an external surface of the suction connector portion" does not put claim 21 in condition for allowance because such flushing connection feature as claimed, per se, is not deemed an inventive feature(s). For example, McKelvey (4,083,115) discloses such flushing connection between elements 10 and 11, wherein element 10 comprises a strap portion which is substantially flush with an external surface of element 11 (Figs. 1-5).

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	14/228,061	NGUYEN ET AL.	
	Examiner	Art Unit	
	HAO D. MAI	3732	

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

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

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

Date of Interview: *05 February 2018*.

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

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

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

Claim(s) discussed: *21*.

Identification of prior art discussed: *Hirsch et al.*.

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

At preliminary review, the proposed amendment to recite the limitation(s) "wherein an external surface of the strap portion is substantially flush with an external surface of the suction connector portion" does not put claim 21 in condition for allowance because such flushing connection feature as claimed, per se, is not deemed an inventive feature(s). For example, McKelvey (4,083,115) discloses such flushing connection between elements 10 and 11, wherein element 10 comprises a strap portion which is substantially flush with an external surface of element 11.

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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	

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,061
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COE

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-				
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FOREIGN PATENT DOCUMENTS

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

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

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

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Substitute for Form 1449/PTO	*Complete if Known*	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,061
	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-001COE

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	

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

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

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

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Ref. 084892-514248

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Thien Nguyen et al.	Examiner:	Hao D. Mai
Serial No.:	14/228,061	Group Art No.:	3732
Filed:	March 27, 2014	Conf. No.:	6191
Title:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP	Dkt. No.:	INCEP-001COE

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

AMENDMENT

In response to the Office Action mailed October 20, 2017 (*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 5 of this paper.

AFCP 2.0 Decision	Application No.	Applicant(s)
	14/228,061	NGUYEN ET AL.
	Examiner	Art Unit
	HAO D. MAI	3732

This is in response to the After Final Consideration Pilot request filed 12/20/2017.

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.

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,061
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COE

Sheet	1	of	2

U.S. PATENT DOCUMENTS

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

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

Examiner Signature		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	14/228,061
	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-001COE

NON PATENT LITERATURE DOCUMENTS

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

Examiner Signature		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.

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

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

(19) World Intellectual Property Organization
International Bureau

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

PCT

(10) International Publication Number
WO 2011/014952 A1

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

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

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

(25) Filing Language: English

(26) Publication Language: English

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

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

(72) Inventors; and

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

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(54) Title: DENTAL APPARATUS

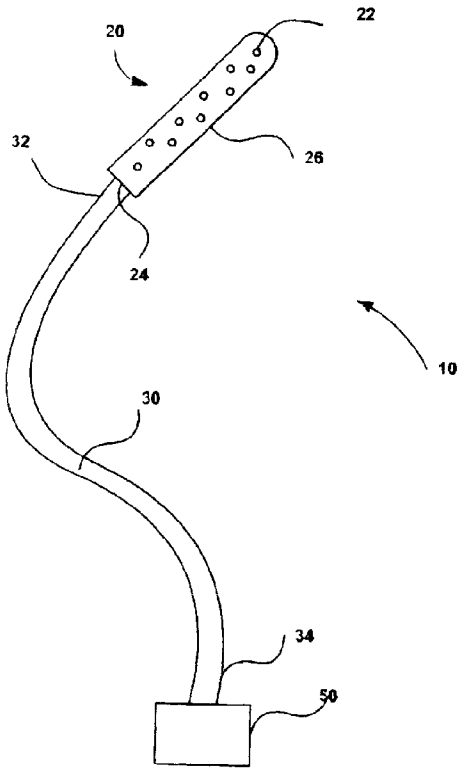


FIG. 1

(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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Published:

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DENTAL APPARATUS

FIELD OF THE INVENTION

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

BACKGROUND OF THE INVENTION

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

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

SUMMARY OF THE INVENTION

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

[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.

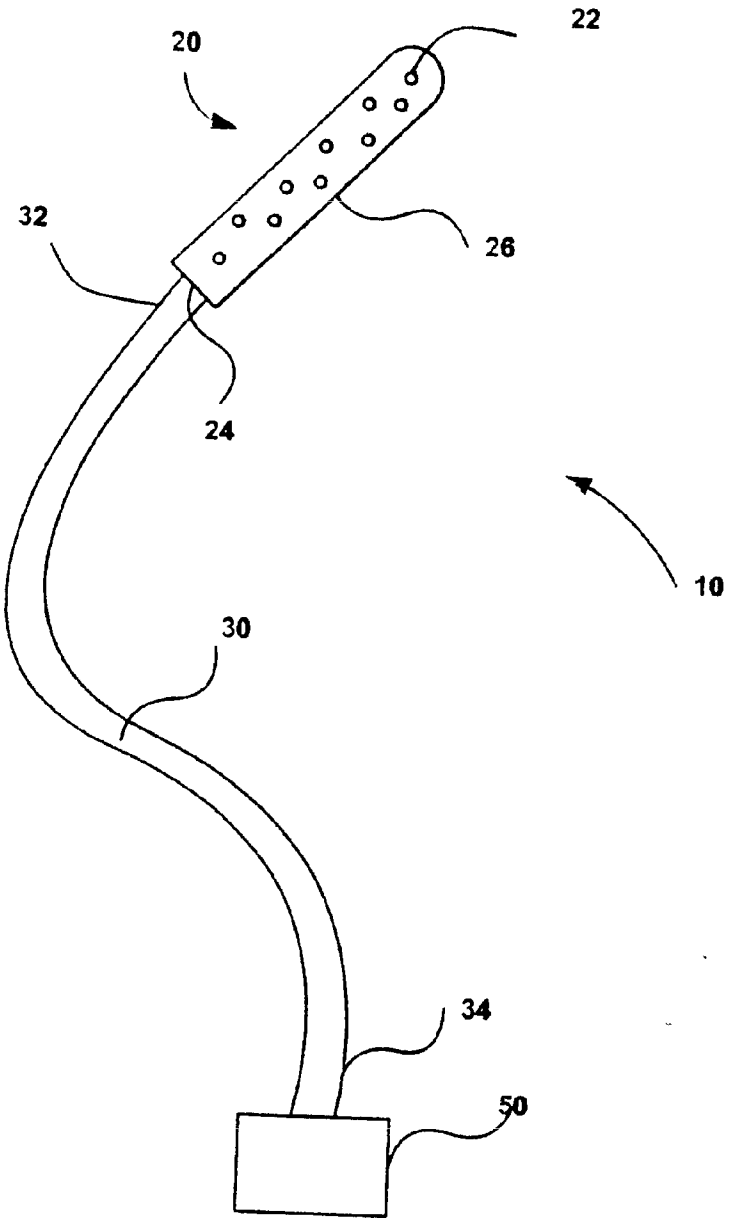


FIG. 1

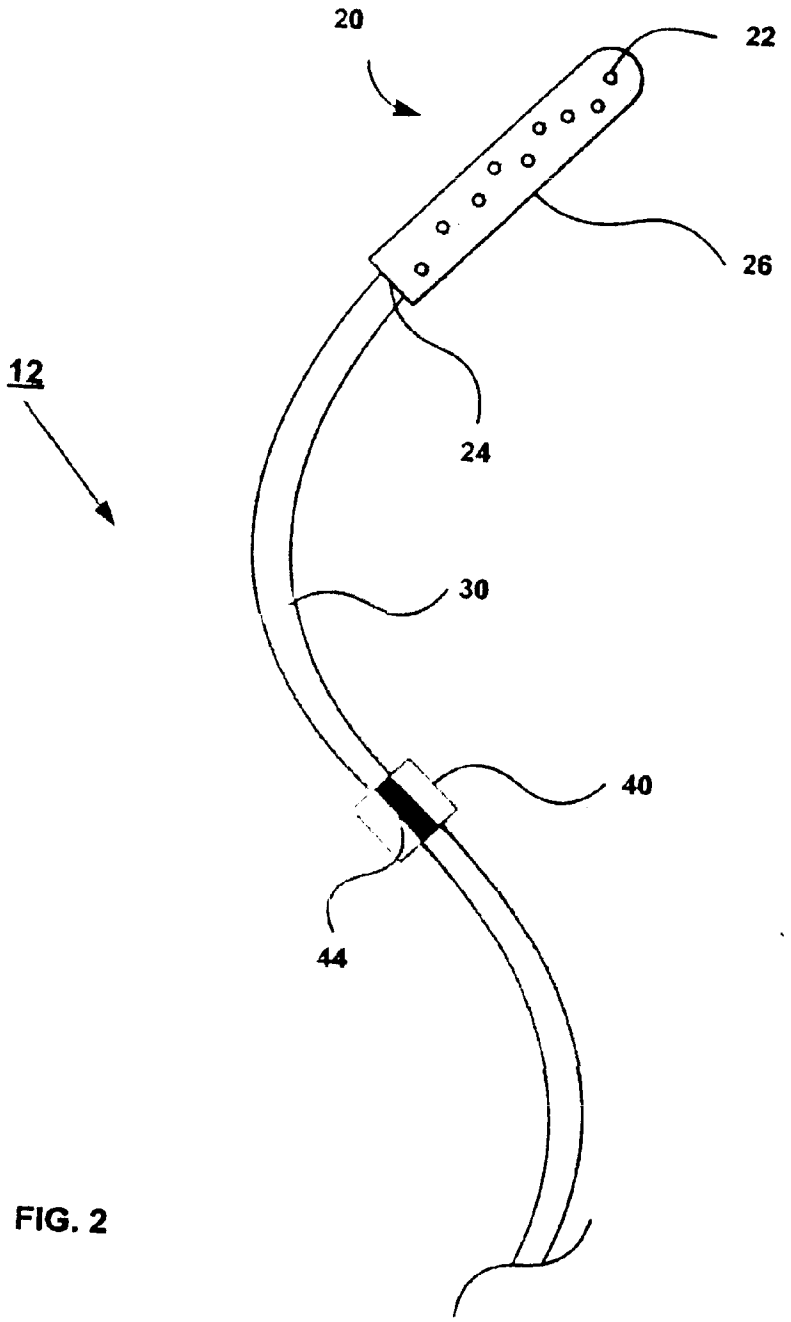


FIG. 2

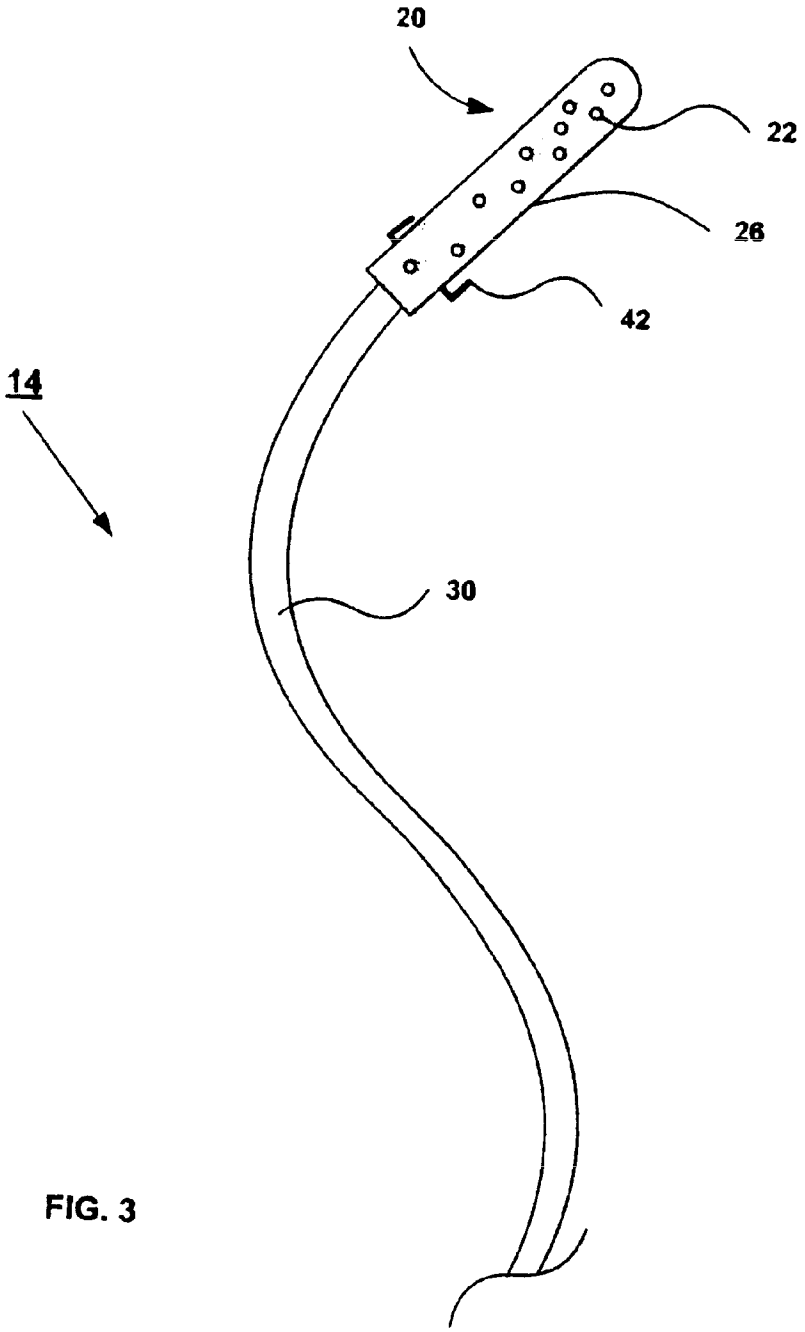


FIG. 3

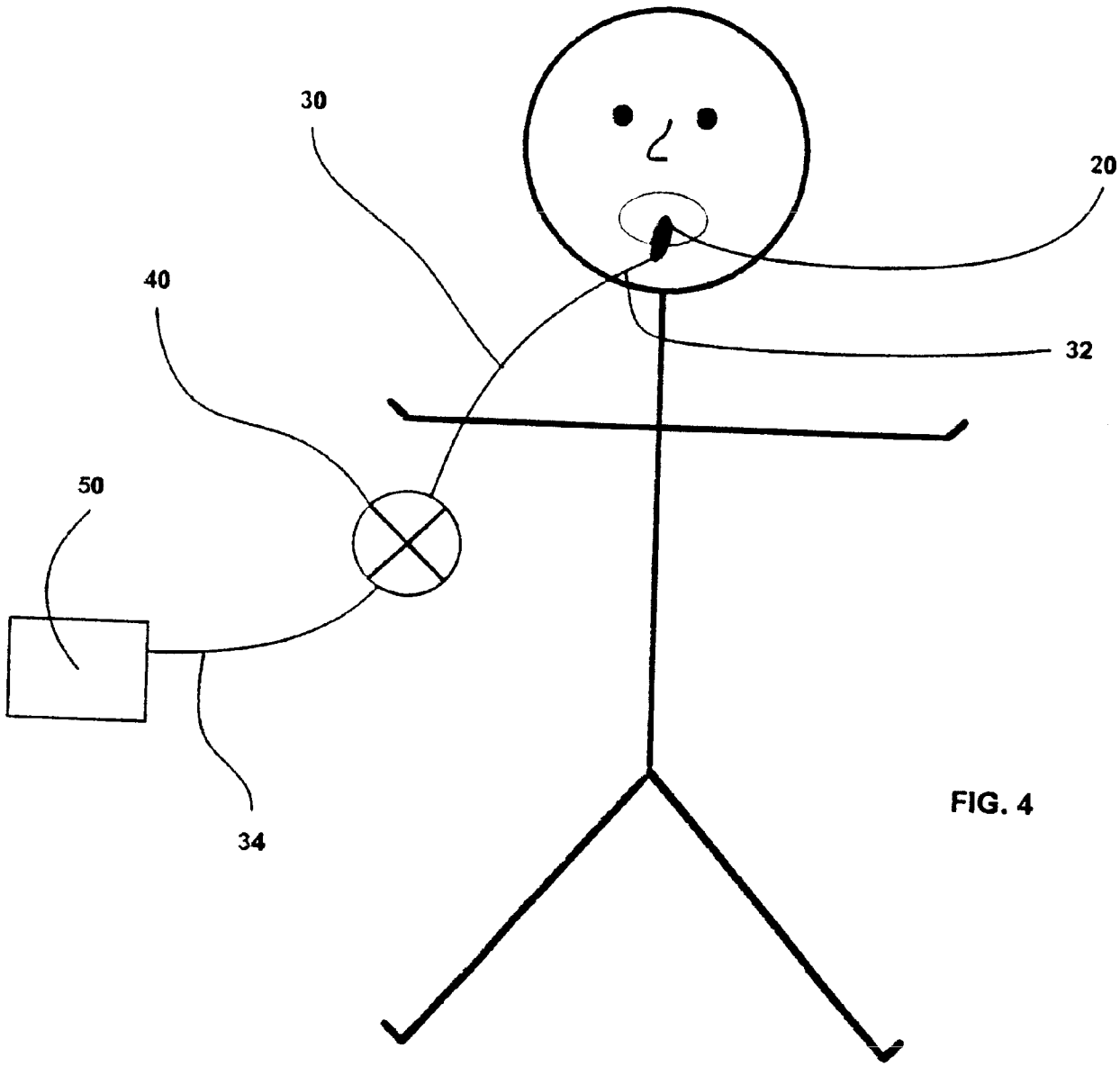


FIG. 4

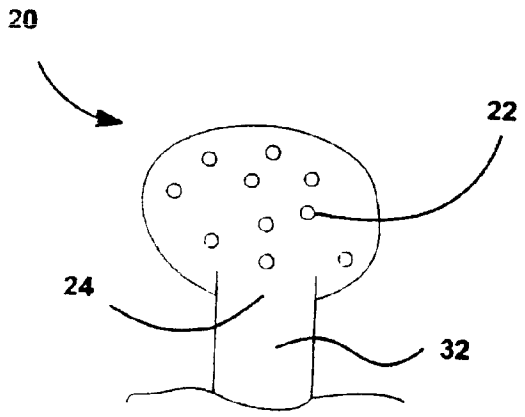


FIG. 5

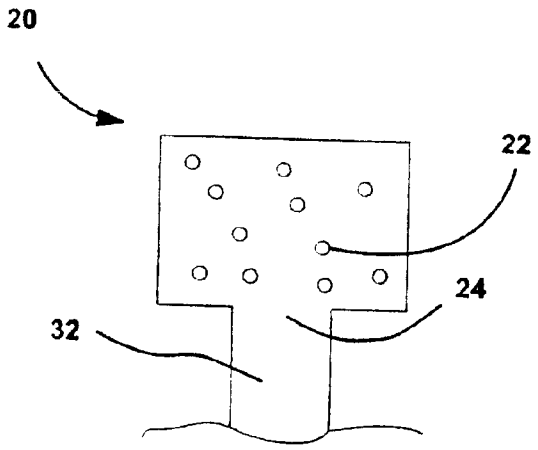


FIG. 6

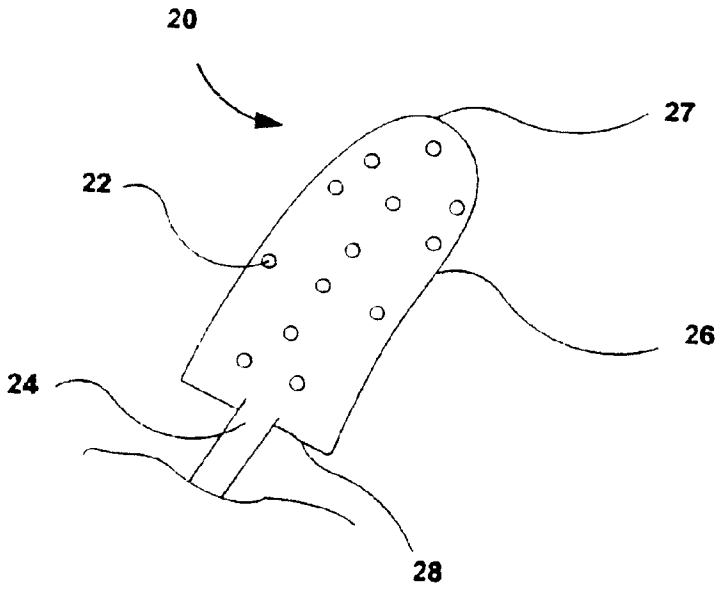


FIG. 7

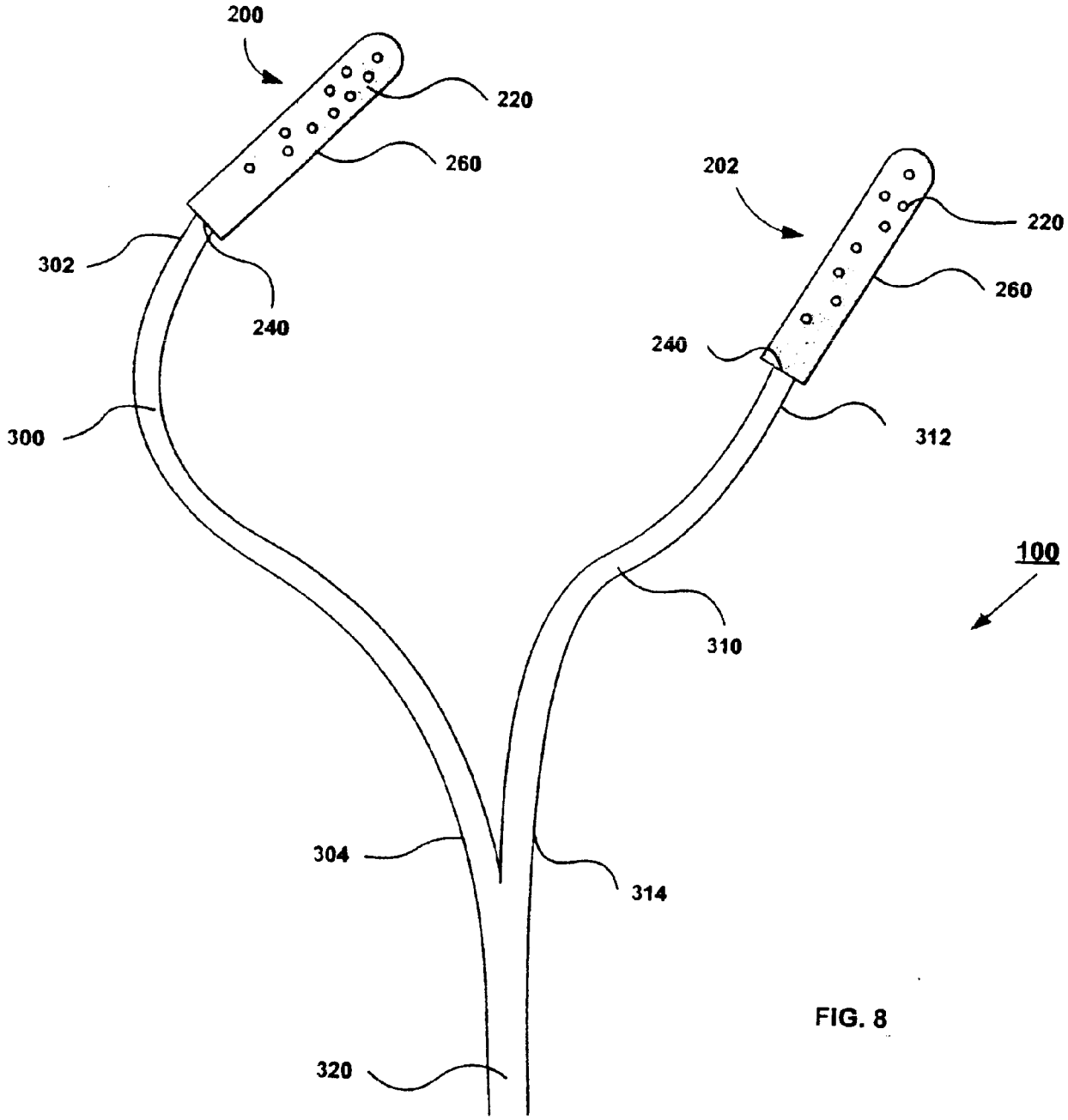


FIG. 8

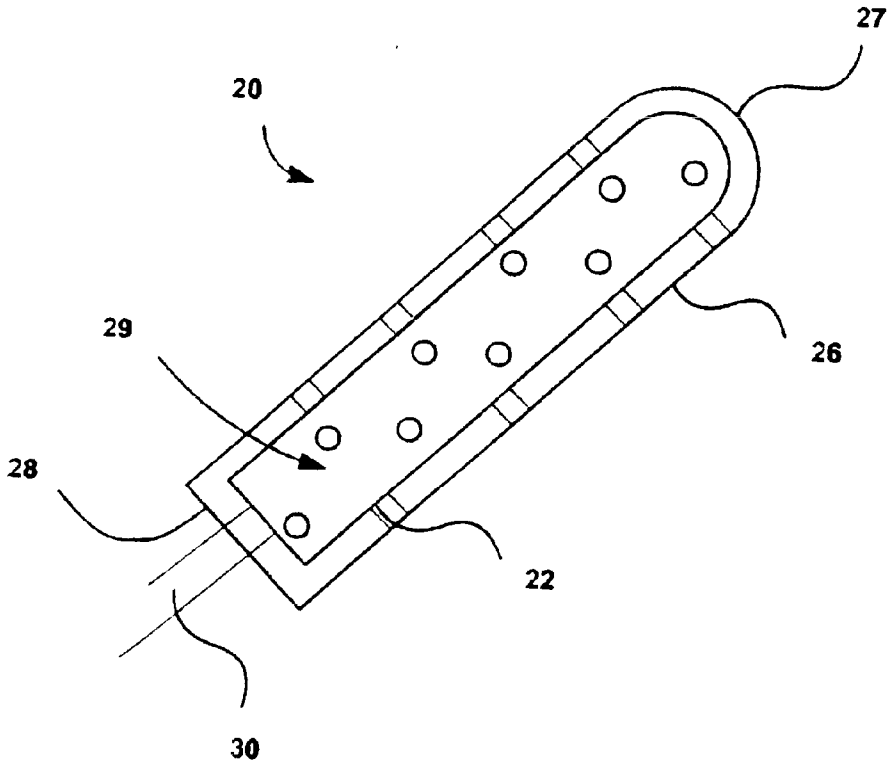


FIG. 9

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

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

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

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

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

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

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

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

"&" document member of the same patent family

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

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

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

Electronic Acknowledgement Receipt

EFS ID:	31783785
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	14-FEB-2018
Filing Date:	27-MAR-2014
Time Stamp:	12:21:14
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	Transmittal Letter	INCEP-001COE_IDS_Statement_2-14-18.pdf	19480 23123fce90b245078e180d5a2a8778072b1a73c8	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COE_IDS_1449_2-14-18.pdf	55179 0d5e33d2a5a5583df81ce89e3e7cfaec6010ef82	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Foreign Reference	WO_2011014952.pdf	1348515 3ae4fe28285fd3a1f9da46b3aa3be9d17f37b410	no	25
Warnings:					
Information:					
			Total Files Size (in bytes):	1423174	

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.: 14/228,061 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191 Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

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)
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PTO/SB/30 (07-14)
Approved for use through 07/31/2016 OMB 0651-0031
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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	14/228,061
Filing Date	March 27, 2014
First Named Inventor	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COE

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, to any international application that does not compy with the requirements of 35 U.S.C 371, 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)

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	2018-03-20
Name (Print/Type)	Stephanie T. Vu	Registration No.	73063

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being 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 U.S. Patent and Trademark Office 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 SEND 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.

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, an international application that does not comply with the requirements of 35 U.S.C. 371, a design application, or a patent under reexamination. See 37 CFR 1.114(e). An international application does not comply with the requirements of 35 U.S.C. 371 until the requirements under 35 U.S.C. 371(c), including the requirement for the inventor's oath or declaration under 35 U.S.C. 371(c)(4), have been complied with.

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 C FR 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:	14228061
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Stephanie Thien Vu/Kristine Goodman
Attorney Docket Number:	INCEP-001COE

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:	32111103
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	20-MAR-2018
Filing Date:	27-MAR-2014
Time Stamp:	18:58:50
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	032118INTEFSW00005989501662
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		Amendment.pdf	313711 72a9e8c46dd5095d9f4d6064dc16c303fe721dde	yes	10

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment Submitted/Entered with Filing of CPA/RCE	1	1
	Claims	2	4
	Applicant Arguments/Remarks Made in an Amendment	5	10

Warnings:

Information:

2	Request for Continued Examination (RCE)	RCE.pdf	134796 4bc96ad64cb864d0af1a714143d77e6733595b41	no	3

Warnings:

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Information:

3	Fee Worksheet (SB06)	fee-info.pdf	32632 c3c96f890c45e59373046a4aac59e13e1d8b3da	no	2

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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

Applicant(s):	Thien Nguyen et al.	Examiner:	Hao D. Mai
Serial No.:	14/228,061	Group Art No.:	3732
Filed:	March 27, 2014	Conf. No.:	6191
Title:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP	Dkt. No.:	INCEP-001COE

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

AMENDMENT

In response to the Office Action mailed October 20, 2017 (*Office Action*), and the Advisory Action dated February 12, 2018, please amend the above-identified application as follows. Applicants make the following remarks.

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

Remarks/Arguments begin on page 5 of this paper.

IN THE CLAIMS

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

1. (cancelled)

2. (cancelled)

3. (previously presented) The mouthpiece of claim 21, wherein the strap portion is injection-molded in a single piece with the bite block portion.

4. (previously presented) The mouthpiece of claim 2, the strap portion is elastic.

5. (currently amended) The mouthpiece of claim 21, wherein an external surface of the suction connector portion comprises a notch region corresponding to the strap portion, the notch region separating the external surface into a first surface and a second surface, and wherein ~~an external surface of the strap portion is substantially flush with a remaining external surface of the suction connector portion when~~ the strap portion sits in the notch region when attached around the circumference of the suction connection portion and is flush with both the first surface and the second surface.

6. (previously presented) The mouthpiece of claim 21, wherein the suction connector portion further comprises an external plug protrusion corresponding to an opening in the bite block portion.

7. (original) The mouthpiece of claim 6, wherein the plug protrusion fits into the opening of the bite block portion to provide additional crush-resistance and decreased compressibility during biting by a patient.

8. (previously presented) The mouthpiece of claim 21, wherein the suction connector portion comprises a cutout corresponding to a protrusion on a vacuum adapter for an interlocking fit.

9. (previously presented) The mouthpiece of claim 21, wherein the suction connector portion connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source provides suction of fluids from the interior of the pocket toward the vacuum source.

10. (previously presented) The mouthpiece of claim 21, wherein the anterior wall, the posterior wall, and/or the side wall comprise a plurality of perforations.

11. (original) The mouthpiece of claim 10, wherein activation of a vacuum source associated with the main body draws fluids from an exterior of the main body through the perforations into the interior of the pocket of the main body.

12. (previously presented) The mouthpiece of claim 21, further comprising a cheek retractor portion connected to the main body portion and having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

13. (cancelled)

14. (cancelled)

15. (currently amended) The mouthpiece of claim 21, ~~wherein the~~ further comprising bridge structure that defines a wave shape, and wherein the bridge structure comprises spaced protrusions [[are]] at crests of the wave shape.

16. (previously presented) The mouthpiece of claim 15, wherein spaces between the spaced protrusions are at troughs of the wave shape.

17. (previously presented) The mouthpiece of claim 21, 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.

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

19. (previously presented) The mouthpiece of claim 21, wherein a material that forms the main body is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

20. (previously presented) The mouthpiece of claim 21, wherein the mouth prop is interchangeable with a second mouth prop that is attachably and detachably associated with the main body portion, the second mouth prop being of a different size.

21. (currently amended) A mouthpiece comprising:

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

an anterior wall,

a posterior wall; and

a side wall connecting the anterior wall to the posterior wall;

a suction connector extending from the main body portion; and

a mouth prop comprising a bite block portion and a strap portion, wherein the strap portion corresponds to a circumference of the suction connector and configured to removably attach [[to]] around the circumference of the suction connector, wherein both sides of an external surface of the strap portion are substantially flush with an external surface of the suction connector portion.

REMARKS

Interview Summary

Applicants thank the Examiner for the interview conducted with the Applicants' representative on February 5, 2018.

Status of the Claims

Independent claim 21 is amended to bring up a limitation from a dependent claim (claim 5), which is also amended to avoid repetition of that limitation. Further, claim 15 is amended to address formalities.

Double Patenting

The Examiner rejects claims 3-12 and 15-21 for non-statutory double patenting over claims 18-35 of U.S. Patent 8,911,232. Because the present claims are currently amended, it is believed that the claims may be considered patentably distinct. As such, the Applicant respectfully requests reconsideration of the current scope of the respective claims and withdrawal of the rejections as appropriate.

Rejections under 35 U.S.C. §112(b)

Claims 15 and 16 are rejected as indefinite due to inconsistencies in antecedent basis. *Office Action*, 3. The present amendments correct the inconsistencies, and Applicant requests that the rejection be withdrawn.

Rejections under 35 U.S.C. §§102-103

Claims 3-12, 15-18, and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Application Publication No. 2003/0134253 to Hirsch et al. ("*Hirsch*") *Office Action*, 4. Applicant respectfully submits that the arguments overcoming *Hirsch* were presented in the Amendment filed December 20, 2017 and presented with the After Final Consideration Program Request and will not be presented here for brevity.

The claimed flushing connection of independent claim 21 was further rejected during the Examiner-Initiated Interview Summary as being disclosed by U.S. Patent 4,083,115 to McKelvey ("McKelvey"). *Examiner-Initiated Interview Summary* dated 02/05/2018. Applicant respectfully submits that *McKelvey* fails to teach the claimed 'a mouth prop comprising a bite block portion and a strap portion, wherein the strap portion corresponds to a circumference of the suction connector and configured to removably attach about the circumference of the suction connector, wherein an **both sides of external surface of the strap portion** is substantially **flush** with an **external surface of the suction connector portion.**'

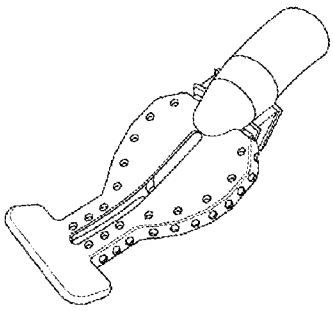


FIG. 1A

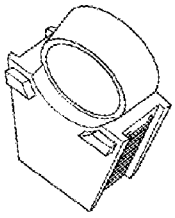


FIG. 3D

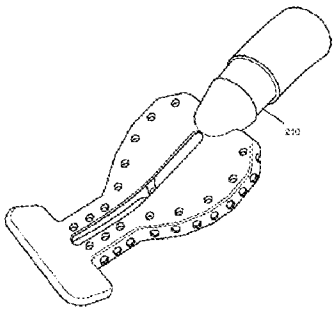


FIG. 2A

As illustrated in the figures provided above, the claimed mouthpiece allows for removable attachment (and detachment) of the bite block portion from the other portions (*e.g.*, main body and suction connector) by way of a strap portion that engages around the circumference of the suction connector. FIG. 1A is a perspective view of the mouthpiece when the mouth prop is attached via the strap portion, while FIG. 3D illustrates the mouth prop (including strap portion) once it has been removed or detached from the other portions of the mouthpiece.

FIG. 2A is a perspective view of the mouthpiece when the mouth prop is removed. As illustrated, the mouth prop has a strap that engages around the circumference of the suction connector, and when so engaged, an external surface of the strap is flush—forms a level or even surface—with the external surface of the suction connector portion on both sides of the external surface of the strap. Such flush engagement is absent from *McKelvey*.

McKelvey does not disclose the claimed mouth prop that includes a bite block portion having a strap portion that engages around the circumference of a suction connector in a way where both sides of the external surface of the strap and the external surface of the suction connection provides a flush surface. The *Interview Summary* points to a flushing connection between elements 10 and 11, wherein the *Interview Summary* alleges that element 10 comprises a strap portion which is substantially flush with an external surface of element 11. *McKelvey* discloses element 24 as an integral flange of the female connector portion 10 and element 13 as an annular groove of the member 9, shown below in FIG. 4. *McKelvey*, cl. 3, lns. 24-33 and 3-9.

McKelvey

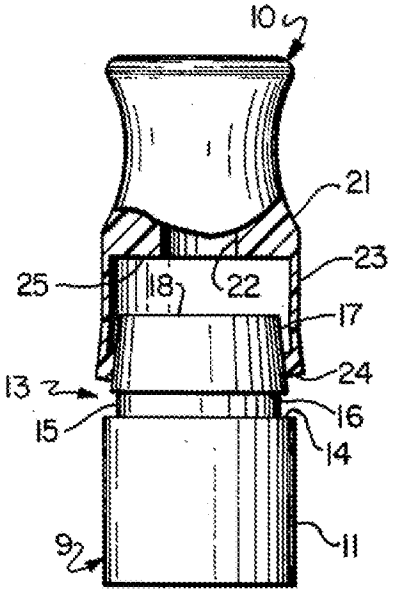
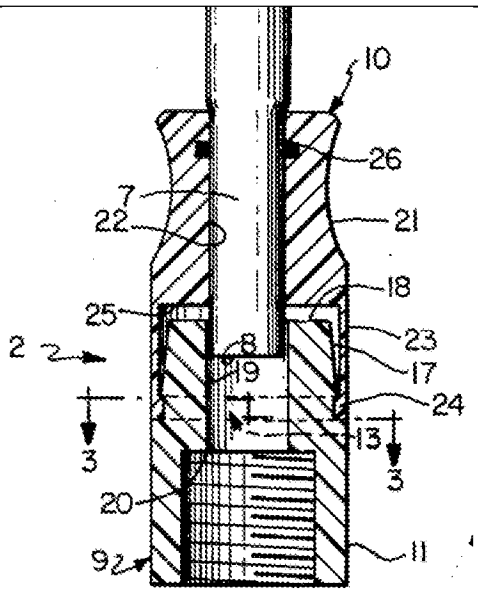
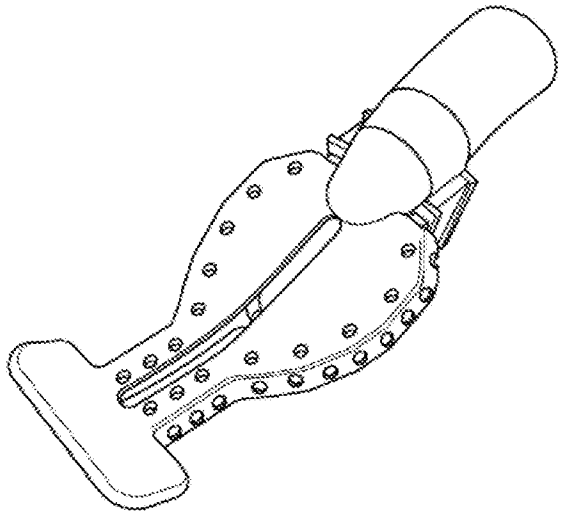


FIG. 4

The flange 24 is dimensioned to engage the groove 13 when the member 9 and the female connector portion 10 are joined together. *Id.* However, due to the difference in dimensions of the surface 17 above the groove 13 and the surface 11 below the groove 13, the flange 24 is not flush on both sides of the flange 24 when the flange 24 is engaged with the groove 13. More specifically, the groove 13 is defined by a first shoulder 14 connected to the surface 11 and a second shoulder 16 connected to the surface 17, wherein the outer diameter of shoulder 16 is smaller than that of shoulder 14. *Id.* at cl. 3, lns. 9-15. When the flange 24 of *McKelvey* is seated in the groove 13, the flange 24 is not flush with the surface 17, as shown below, because the diameter of shoulder 16, which is connected to the surface 17, is smaller than the diameter of the flange, unlike Applicant's strap portion, which is flush on both sides of the strap, also shown below. *Id.*

McKelvey	Applicant
	
FIG. 2	FIG. 1A

Thus, *McKelvey* does not disclose the claimed mouth prop that includes a bite block portion having a strap portion that engages around the circumference of a suction connector in a way

where **both sides of the external surface of the strap and the external surface of the suction connection provides a flush surface**.

Claims 2-12, 15-18, and 20 depend from independent claim 21 and are allowable for at least the same reasons as claim 21. For at least this reasons, withdrawal of the rejections is requested.

Rejections Under 35 U.S.C. §103

Claim 19 was rejected under 35 U.S.C. 103(a) as being unpatentable over *Hirsch* in view of U.S. Patent No. 5,890,899 by Sclafani ("*Sclafani*"). Applicants respectfully disagree. Because claim 19 depends from independent claim 21, claim 19 is allowable for at least the same reasons as claim 21 from which it depends. Withdrawal of the rejection is 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 the 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 submits 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,

March 20, 2018

POLSINELLI *LLP*

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/228,061	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 **03/20/2018**

	(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))	* 17	Minus	** 20	= 0	X $50 =	0
Independent (37 CFR 1.16(h))	* 1	Minus	***3	= 0	X $230 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

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

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

LIE
ANNETTE COWAN

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.
14/228,061	03/27/2014	Thien Nguyen	INCEP-001COE	6191

138718 7590 10/04/2018

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UNITED STATES OF AMERICA

EXAMINER
MAI, HAO D

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
10/04/2018	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. 14/228,061	Applicant(s) NGUYEN ET AL.	
	Examiner HAO D. MAI	Art Unit 3732	AIA (First Inventor to File) Status No

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

Period for Reply

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

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

Status

1)☒ Responsive to communication(s) filed on *03/20/2018*.

☐ 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) *3-12 and 15-21* 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) *3-12 and 15-21* 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 03/20/2018 has been entered.

Double Patenting

3. 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.

4. **Claims 3-12 and 15-21 are rejected on the ground of nonstatutory double patenting over claims 18-35 of U.S. Patent No. 8,911,232 in view of Hirsch et al. (2003/0134253).**

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 claim 21 essentially claims the subject matter of the patent claim 18. The difference between the application claims and the patent claims lies in the fact that application claim 21 newly recites " wherein both sides of an external surface of the strap portion are substantially flush with an external surface of the suction connector portion", which is not recited the patent claim. However, Hirsch et al. shows both sides of the external surface of the strap portion 100 are substantially flush with an external surface of the suction connector portion 74/84/86 when connected thereto (Figs. 2-3). Note that Figure 3 shows that the connector portion 74/84/86 is neither protruding nor recessed from the external surface of the strap portion 100 at both sides, i.e. upper and lower sides, therefore. Instead, Figure 3 clearly shows the strap portion 100 and the connector portion 74/84/86 together form a flushed exterior surface. It would have been obvious to one of ordinary skill in the art to modify the patent claim to specifically claim both sides of an external surface of the strap portion are flush with an external surface of the suction connector portion as taught by Hirsch et al. as suitable alternative flushing connection between the two elements.

Claim Rejections - 35 USC § 112

5. 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.

6. Claims **3-12 and 15-21** are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

- Claim 1 recites “both sides of an external surface of the strap portion" (lines 9-10). It is unclear exactly which structures or elements are such "both sides of an external surface of the strap portion" since "an external surface" has only one surface or side.
- Claim 15 recites “bridge structure" which lacks a defining article "a", rendering the claim indefinite because it is unclear whether such “bridge structure” is a positively claimed element of the invention.

All other dependent claims are rejected herein as indefinite based on dependency.

7. The following is a quotation of 35 U.S.C. 112(d):

> (d) REFERENCE IN DEPENDENT FORMS.—Subject to subsection (e), a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

The following is a quotation of pre-AIA 35 U.S.C. 112, fourth paragraph:

> Subject to the following paragraph [i.e., the fifth paragraph of pre-AIA 35 U.S.C. 112], a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

8. Claim 4 is rejected under 35 U.S.C. 112(d) or pre-AIA 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends. Claim 4 is recited as dependent on claim 2, which has been cancelled. Claim 4 is rejected under the prior art under the assumption that claim 4 is dependent upon claim 21.

Applicant may cancel the claim(s), amend the claim(s) to place the claim(s) in proper dependent form, rewrite the claim(s) in independent form, or present a sufficient showing that the dependent claim(s) complies with the statutory requirements.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 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.

10. **Claim 3-12, 15-18, and 20-21, are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by Hirsch et al. (2003/0134253).**

Regarding claim 21, Hirsch et al. discloses a dental mouthpiece (Fig. 2) comprising a main body portion 50 that is configured as a pocket (i.e. interior of 50) having an interior defined by: an anterior wall (convex face of 50 shown in Fig.4); a posterior wall (concave face 50 shown in Fig. 3), and a side wall (edge 22 or 56) connecting the anterior wall to the posterior wall. There is a suction connector 74/84/86 extending from the main body portion and a mouth prop 26 (Fig. 2). The mouth prop 26 comprising a bite block portion 94 and a strap portion 100; wherein the strap portion 100 corresponds to a circumference of the suction connector 74/84/86

of the suction connector. Note that the claim language “correspond to” is very broad. As such, the strap portion 100 is considered to correspond to a circumference of the suction connector 74/84/86 because the strap portion 100 is shown to receive or mate with the suction connector 74/84/86 (Fig. 2; paragraphs 52-55).

Regarding the newly recited limitation(s), it is maintained that both sides of the external surface of the strap portion 100 are substantially flush with an external surface of the suction connector portion 74/84/86 when connected thereto (Figs. 2-3). Note that Figure 3 shows that the connector portion 74/84/86 is neither protruding nor recessed from the external surface of the strap portion 100 at either upper and lower sides therefore. Instead, Figure 3 clearly shows the strap portion 100 and the connector portion 74/84/86 together form a flushed exterior surface.

As to claim 3, the mouth prop 26 comprises a bite block portion 94 and a strap portion 100 (to receive portion 86/90) which are formed as a single piece (Fig. 2). As to claim 4, Hirsch discloses the device being formed of elastic thermoplastic elastomer (paragraph 74). As to claim 5, Hirsch et al. shows the suction connector portion comprises at least a notch region (i.e. notch between 88 and 90, notch between 86 and 78, etc.); the notch region separating the external surface of into a first surface 88 and second surface 90, and wherein the strap portion 100, at corresponding circumferential surface to notch between 88/90, sits in the notch region when attached around the circumference and is flush with both the first surface 88 and the second surface 90 (Figs. 2-3).

As to claims 6-7, the suction connector portion 74/84/86 comprises an external plug protrusion 88/90/86 corresponding to an opening 100 in the bite block portion, capable of providing additional crush-resistance and decrease compressibility during biting by a patient. As to claim 8, the suction connector portion 74/84/86 has various cutouts, e.g. cutout opening

84, cutout between edges 88 and 90. Note that the vacuum adapter is not actively claimed and therefore not given patentable weight. As to claim 9, the suction connector portion 74/84/86 connects the interior of the pocket (internal channels of 50) to a vacuum source via port 108 (Figs. 2-7). As to claims 10-11, the anterior wall, posterior wall, and/or side wall comprise a plurality of perforations 60, 68 (Figs. 3-4). As to claim 12, note the cheek retractor 52 (Fig. 2, paragraph 46); the cheek retractor 52 is formed of the same resilient/elastic material as the body 50. As to claims 15-16, note the bridge structure 24 having a wave shape defined by spaced protrusions (e.g. side walls of channel 80). As to claim 17, alternatively, element 24 forming a part of the posterior/concave wall, the end portion 24 (with no protruding opposite wall walls) is considered to be equivalent to the claimed stability bar as claimed (Fig. 2).

As to claim 18, the claim language "by injection-molded" is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and defined by the recited process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe,* 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Hirsch discloses the end product and the structures thereof as claimed as detailed above with all the essential portions forming the device as one piece. The burden is shifted to applicant to show an unobvious difference between Hirsch' device and the invention that would have resulted from the injection molding process. As to claim 20, the mouth prop 68 is detachable and therefore is inherently interchangeable with another/second mouth prop. Note that the second mouth prop is not actively claimed and therefore is not given patentable weight.

Claim Rejections - 35 USC § 103

11. 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.

12. **Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirsch et al. in view of Sclafani (5,890,899).** Hirsch discloses the invention substantially as claimed including the material used to form the device being flexible, translucent, high heat-resistant, as evidenced by disclosure of sterilization for reuse (column 5 lines 20-21; column 6 lines 21-27). However, 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 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

13. Applicant's amendments to claim 21 have been fully considered but are not persuasive as having overcome Hirsch et al.

Regarding the Double Patenting ground(s) of rejection, application claim 21 newly recites " wherein both sides of an external surface of the strap portion are substantially flush with an external surface of the suction connector portion", which is not recited the patent claim. However, Hirsch et al. shows both sides of the external surface of the strap portion 100 are substantially flush with an external surface of the suction connector portion 74/84/86 when

connected thereto (Figs. 2-3). Note that Figure 3 shows that the connector portion 74/84/86 is neither protruding nor recessed from the external surface of the strap portion 100 at both sides, i.e. upper and lower sides, therefore. Instead, Figure 3 clearly shows the strap portion 100 and the connector portion 74/84/86 together form a flushed exterior surface. It would have been obvious to one of ordinary skill in the art to modify the patent claim to specifically claim both sides of an external surface of the strap portion are flush with an external surface of the suction connector portion as taught by Hirsch et al. as suitable alternative flushing connection between the two elements.

Regarding the newly recited limitation(s), it is maintained that Hirsch et al. shows both sides of the external surface of the strap portion 100 are substantially flush with an external surface of the suction connector portion 74/84/86 when connected thereto (Figs. 2-3). Note that Figure 3 shows that the connector portion 74/84/86 is neither protruding nor recessed from the external surface of the strap portion 100 at both sides, i.e. upper and lower sides, therefore. Instead, Figure 3 clearly shows the strap portion 100 and the connector portion 74/84/86 together form a flushed exterior surface.

Applicant's arguments regarding McKelvey are irrelevant as McKelvey is not cited in the ground(s) of rejection.

Conclusion

14. 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

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	1	("20030134253").PN.	US-PGPUB; USPAT	OR	OFF	2018/09/30 12:55
L3	1	("8911232").PN.	US-PGPUB; USPAT	OR	OFF	2018/09/30 13:35
L4	89	(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-20070231773-$ or US-20080255498-$ or US-20100297577-$ or US-20110229847-$ or US-20120015317-$ or US-20140322668-$ or US-20150100041-$ or US-20150335409-$ or US-20040033468-$ or US-20140099597-$ or US-20030054317-$ or US-20060199147-$ or US-20030219696-$ or US-20110159457-$ or US-20110217672-$).did. or (US-3090122-$ 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-4695253-$ or US-8870568-$ or US-5762496-$ or US-4906188-$ or US-5438976-$ or US-D734851-$ or US-8911232-$ or US-6743017-$ or US-6193513-$ or US-4992046-$ or US-3758950-$).did. or (US-4261697-$ or US-5975897-$ or US-5114342-$ or US-4083115-$).did. or (US-2937445-$ or US-2250285-$ or US-3324855-$ or US-RE26470-$ or US-1471207-$).did. or (FR-1463351-$).did.	US-PGPUB; USPAT; USOCR; FPRS	ADJ	OFF	2018/09/30 13:47
L5	1	l4 and mckelvey	US-PGPUB;	ADJ	OFF	2018/09/30

			USPAT; USOCR; FPRS			13:48
L6	11	l4 and flush$3	US-PGPUB; USPAT; USOCR; FPRS	ADJ	OFF	2018/09/30 13:48
L7	1	D809660	US-PGPUB; USPAT; USOCR; FPRS	ADJ	OFF	2018/09/30 13:50
L8	1	"20120237894"	US-PGPUB; USPAT; USOCR; FPRS	ADJ	OFF	2018/09/30 13:50
L9	1	(US-20120237894-$).did.	US-PGPUB	ADJ	OFF	2018/09/30 13:50
L10	2	(wo-2011014952-$).did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2018/09/30 13:51

9/30/2018 1:52:11 PM
C:\Users\hmai1\Documents\EAST\Workspaces\14228061.wsp

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14228061	NGUYEN ET AL.
	Examiner	**Art Unit**
	HAO D MAI	3732

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

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

CLAIM		DATE								
Final	Original	11/16/2015	06/20/2016	04/04/2017	10/16/2017	09/30/2018				
	1	✓	✓	✓	-	-				
	2	✓	✓	✓	-	-				
	3	✓	✓	✓	✓	✓				
	4	✓	✓	✓	✓	✓				
	5	✓	✓	O	✓	✓				
	6	✓	✓	✓	✓	✓				
	7	✓	✓	✓	✓	✓				
	8	✓	✓	✓	✓	✓				
	9	✓	✓	✓	✓	✓				
	10	✓	✓	✓	✓	✓				
	11	✓	✓	✓	✓	✓				
	12	✓	✓	✓	✓	✓				
	13	✓	✓	-	-	-				
	14	✓	✓	-	-	-				
	15	✓	✓	O	✓	✓				
	16	✓	✓	O	✓	✓				
	17	✓	✓	✓	✓	✓				
	18	✓	✓	✓	✓	✓				
	19	✓	✓	✓	✓	✓				
	20	✓	✓	✓	✓	✓				
	21				✓	✓				

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14228061	NGUYEN ET AL.
	Examiner	Art Unit
	HAO D MAI	3732

CPC- SEARCHED		
Symbol	Date	Examiner
A61C 17/043, 046	11/16/2015	HDM
A61C 17/04, 0208	06/20/2016	HDM
Update Search	06/20/2016	HDM

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

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

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

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor Search	11/16/2015	HDM
Review searches of parent case 14/100323	11/16/2015	HDM
Update Search	06/20/2016	HDM
Update Search	02/20/2017	HDM
Update Search	10/16/2017	HDM
Update Search	09/30/2018	HDM

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

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,061
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3732
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COE

Sheet	1	of	2

U.S. PATENT DOCUMENTS

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

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

Examiner Signature	/Hao D Mai/	Date Considered	09/30/2018

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

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,061
	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-001COE

NON PATENT LITERATURE DOCUMENTS

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

Examiner Signature	/Hao D Mai/	Date Considered	09/30/2018

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

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

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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	14/228,061
	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-001COE

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Office Action mailed 10/5/18	
		Docket No. INCEP-001COD U.S. Patent Application 14/228,057; Office Action mailed 9/7/18	

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:	34190201
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	05-NOV-2018
Filing Date:	27-MAR-2014
Time Stamp:	10:49:17
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-001COE_IDS_Statement_11-5-18.pdf	19221 1a98eee2d2bd3dc7edd0d52a5f99ed4cc33daa9d	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COE_IDS_1449_11-5-18.pdf	27865 6eb9b4e05399f0a018a7ad979ff1f86f1b42fce3	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	47086	

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.: 14/228,061 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191 Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

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/_____
Stephanie T. Vu (Reg. No. 73,063)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Thien Nguyen et al.	Examiner:	Hao D. Mai
Serial No.:	14/228,061	Group Art No.:	3772
Filed:	March 27, 2014	Conf. No.:	6191
Title:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP	Dkt. No.:	INCEP-001COE

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

AMENDMENT

In response to the Office Action mailed October 4, 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 5 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. (cancelled)

3. (previously presented) The mouthpiece of claim 21, wherein the strap portion is injection-molded in a single piece with the bite block portion.

4. (currently amended) The mouthpiece of claim 21 [[2]], the strap portion is elastic.

5. (currently amended) The mouthpiece of claim 21, wherein an external surface of the suction connector portion comprises a notch region corresponding to the strap portion, the notch region separating the external surface into a first surface and a second surface and defining an interior surface coupled to the first surface by a first side wall and coupled to the second surface by a second side wall~~, and wherein the strap portion sits in the notch region when attached around the circumference of the suction connection portion and is flush with both the first surface and the second surface~~.

6. (previously presented) The mouthpiece of claim 21, wherein the suction connector portion further comprises an external plug protrusion corresponding to an opening in the bite block portion.

7. (original) The mouthpiece of claim 6, wherein the plug protrusion fits into the opening of the bite block portion to provide additional crush-resistance and decreased compressibility during biting by a patient.

8. (previously presented) The mouthpiece of claim 21, wherein the suction connector portion comprises a cutout corresponding to a protrusion on a vacuum adapter for an interlocking fit.

9. (previously presented) The mouthpiece of claim 21, wherein the suction connector portion connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source provides suction of fluids from the interior of the pocket toward the vacuum source.

10. (previously presented) The mouthpiece of claim 21, wherein the anterior wall, the posterior wall, and/or the side wall comprise a plurality of perforations.

11. (original) The mouthpiece of claim 10, wherein activation of a vacuum source associated with the main body draws fluids from an exterior of the main body through the perforations into the interior of the pocket of the main body.

12. (previously presented) The mouthpiece of claim 21, further comprising a cheek retractor portion connected to the main body portion and having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

13. (cancelled)

14. (cancelled)

15. (currently amended) The mouthpiece of claim 21, further comprising a bridge structure that defines a wave shape, and wherein the bridge structure comprises spaced protrusions at crests of the wave shape.

16. (previously presented) The mouthpiece of claim 15, wherein spaces between the spaced protrusions are at troughs of the wave shape.

17. (previously presented) The mouthpiece of claim 21, 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.

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

19. (previously presented) The mouthpiece of claim 21, wherein a material that forms the main body is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

20. (previously presented) The mouthpiece of claim 21, wherein the mouth prop is interchangeable with a second mouth prop that is attachably and detachably associated with the main body portion, the second mouth prop being of a different size.

21. (previously presented) A mouthpiece comprising:

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

an anterior wall,

a posterior wall; and

a side wall connecting the anterior wall to the posterior wall;

a suction connector extending from and integral to the main body portion; and

a mouth prop comprising a bite block portion and a strap portion, wherein the strap portion corresponds to a circumference of the suction connector and configured to removably attach around the circumference of the suction connector, wherein a first edge and a second edge ~~both sides~~ of an external surface of the strap portion are adjacent to ~~substantially flush with~~ an external surface of the suction connector portion, and wherein the first edge is opposite the second edge.

22. (new) The mouthpiece of claim 5, wherein the strap portion sits in the notch region when attached around the circumference of the suction connection portion and the strap portion has a thickness corresponding to a height of the first side wall and the second side wall so that the strap portion is flush with both the first surface and the second surface.

23. (new) The mouthpiece of claim 22, wherein an interior surface of the strap portion is adjacent to the interior notch region interior surface.

REMARKS

Status of the Claims

Claims 21 and 5 are amended for clarity and claims 4 and 15 are amended to correct formalities. Claims 22 and 23 are added as new and support can be found through the *Specification* and, for example, in Figs. 1A, 2A, and 2B. No new matter is added. After entry of the amendments, claims 3-12 and 15-23 will be pending.

Double Patenting

The Examiner rejects claims 3-12 and 15-21 for non-statutory double patenting over claims 18-35 of U.S. Patent 8,911,232 in view of Hirsch et al. (2003/0134253). *Office Action*, 3. Because the present claims are currently amended, it is believed that the claims may be considered patentably distinct. As such, the Applicant respectfully requests reconsideration of the current scope of the respective claims and withdrawal of the rejections as appropriate.

Rejections under 35 U.S.C. §112(b)and (d)

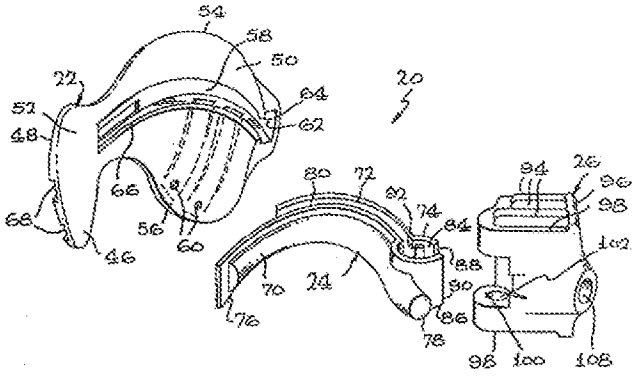
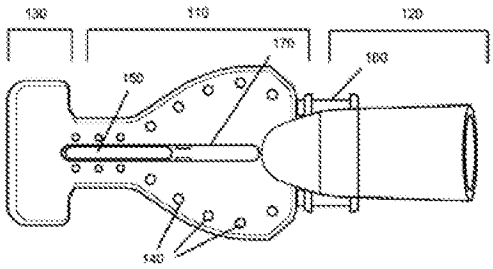
Claims 3-12 and 15-21 are rejected as indefinite for reciting "both sides of an external surface of the strap portion," and claim 5 is further rejected for reciting "bridge structure" without a defining article "a." *Office Action*, 4. Claim 21 has been amended to replace "both sides" with "a first edge and a second edge" and claim 5 has been amended to add a defining article in front of "bridge structure." As such, Applicant requests that the rejections be withdrawn.

Claim 4 is further rejected as being of improper dependent form. *Office Action*, 5. Claim 4 has been amended to recite a proper dependent form. As such, Applicant requests that the rejections be withdrawn.

Rejections under 35 U.S.C. §102

Claims 3-12, 15-18, and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Application Publication No. 2003/0134253 to Hirsch et al. ("*Hirsch*") *Office Action*, 5.

The independent claim recited 'a suction connector extending from and integral to the main body portion.' The cited reference—*Hirsch*—does not disclose a suction connector extending from **and integral to** the main body portion. *Hirsch* discloses a dispersion piece 24 (*e.g.*, 74/84/86 cited by the Examiner as purportedly teaching the suction connector) having a fluid evacuation portion 72 that is *slidably received* by a tongue and cheek retractor 22, as shown in FIG. 2 below.

Hirsch	Applicant
 FIG. 2	 FIG. 1B

In contrast, as shown in Applicant's FIG. 1B above, the suction connector 120 of the Applicant's mouthpiece extends from and is integral to the main body 110. In other words, the suction connector 120 and the main body 110 are constructed as a single piece, whereas *Hirsch*'s dispersion piece 24 and tongue and cheek retractor 22 are separate pieces. As such, *Hirsch* does not disclose the claimed mouthpiece having a suction connector extending from and integral to the main body portion and withdrawal of the rejection is requested.

Claims 3-12, 15-18, and 20 depend from independent claim 21 and are allowable for at least the same reasons as claim 21. For at least this reasons, withdrawal of the rejections is requested.

Further, new claims 22 and 23 depend from independent claim 21 and are allowable for at least the same reasons as claim 21.

Rejections Under 35 U.S.C. §103

Claim 19 was rejected under 35 U.S.C. 103(a) as being unpatentable over *Hirsch* in view of U.S. Patent No. 5,890,899 by Sclafani ("*Sclafani*"). Applicants respectfully disagree. Withdrawal of the rejection is requested. Because claim 19 depends from independent claim 21, claim 19 is allowable for at least the same reasons as claim 21 from which it depends. Withdrawal of the rejection is 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 the Applicants' invention as defined by the claims is patentable over the references of record. Issuance of a Notice of Allowance is solicited.

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

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,

January 4, 2019

POLSINELLI *LLP*

/Stephanie T. Vu/

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Electronic Acknowledgement Receipt

EFS ID:	34769535
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	04-JAN-2019
Filing Date:	27-MAR-2014
Time Stamp:	18:17:18
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		Amendment.pdf	199676 5b5830aeb046e3ef09f444aea6e06a7ba374ef03	yes	9

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	9
Warnings:			
Information:			
	Total Files Size (in bytes):	199676	

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	14/228,061
	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-001COE

NON PATENT LITERATURE DOCUMENTS

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

Examiner Signature		Date Considered	

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

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

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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:	35008735
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	01-FEB-2019
Filing Date:	27-MAR-2014
Time Stamp:	11:05:44
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-001COE_IDS_Statement_2-1-19.pdf	19221 fb385966b58386563f9e97e71874690ce661fa42	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COE_IDS_1449_2-1-19.pdf	27764 673440e39ab5f0b588d1599b59eb3f4377a7a868	no	1

Warnings:
Information:
This is not an USPTO supplied IDS fillable form

Total Files Size (in bytes):	46985

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.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772 Examiner: Hao D. Mai

Serial No.: 14/228,061 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191 Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

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: February 1, 2019

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

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,061
	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-001COE

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.**

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Electronic Acknowledgement Receipt

EFS ID:	36255714
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	11-JUN-2019
Filing Date:	27-MAR-2014
Time Stamp:	19:20:14
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	Transmittal Letter	INCEP-001COE_IDS_Statement_6-11-19.pdf	19286 55101a94c1bd66aa7a252c73d996bc654006e0db	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COE_IDS_1449_6-11-19.pdf	27784 625683cf3721ab2275c8c90a1f879f4c230631d8	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	47070	

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

New Applications Under 35 U.S.C. 111

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New International Application Filed with the USPTO as a Receiving Office

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772 Examiner: Hao D. Mai

Serial No.: 14/228,061 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191 Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

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/_____
Stephanie T. Vu (Reg. No. 73,063)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
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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.
14/228,061	03/27/2014	Thien Nguyen	INCEP-001COE	6191

138718 7590 07/11/2019

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

EXAMINER	
MAI, HAO D	

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
07/11/2019	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. 14/228,061	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) 3-12 and 15-23 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) 3-12 and 15-23 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.

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 3-12 and 15-23 are rejected on the ground of nonstatutory double patenting over claims 18-35 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 claim 21 essentially claims the subject matter of the patent claim 18. The difference between the application claims and the patent claims lies in the fact that application claim 21 newly recites " wherein a first edge and a second edge of an external surface of the strap portion are adjacent to an external surface of the suction connector portion", which is not recited the patent claim. However, Black et al. discloses a mouth prop 10 (Figs. 2, 6A) comprising a bite block portion 14/16, and a strap portion 12 corresponding to and configured to removably attach around a circumference of the suction connector 65 (Figs. 2, 6A; paragraph 106). When assembled, a first edge/side and a second edge/side of an external surface of the strap portion 12 are adjacent to an external surface of the suction connector portion 65 (Figs. 1-2 and 6A), wherein the first edge/side is opposite the second edge/side (Fig. 5B best shows the first edge/side being the left and the second edge/side being the right side of 10). It would have been obvious to one of ordinary skill in the art to modify the patent claim to specifically claim a first edge and a second edge of an external surface of the strap portion are adjacent to an external surface of the suction connector portion as taught by Black et al. as suitable alternative connection between the two elements.

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 5 and 22-23** 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.

- Claim 5 recites "an external surface of the suction connector portion" (lines 1-2). It is unclear whether such external surface is the same or different from "an external surface of the suction connector portion" previously defined in the base claim 21 (line 11).
- Claim 5 recites the limitation "the external surface" (line 3). It is unclear whether such external surface is of the suction connector portion or of the strap portion. Note that the base claim 21 defines two external surfaces - "an external surface of the strap portion" (lines 9-10) and "an external surface of the suction connector portion" (line 11).

All other dependent claims are rejected herein as indefinite based on dependency.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 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.

7. **Claim 3, 6-7, 9-11, 17-18, and 20, are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by Black et al. (2009/0274991).**

Regarding claim 21, Black et al. discloses a dental mouthpiece (Figs. 6A,) comprising a main body portion 60 that is configured as a pocket (i.e. hollow lumen 61) having an interior defined by: an anterior wall and a posterior wall (left convex and right concave face shown in Figs. 6A-6B), and a side wall (62) connecting the anterior wall to the posterior wall (Figs. 6A-6B; paragraph 94). There is a suction connector 65 extending from and integral to the main body 60 (Fig. 6A). Black et al. further discloses a mouth prop 10 (Figs. 2, 6A) comprising a bite block portion 14/16, and a strap portion 12 corresponding to and configured to removably attach

around a circumference of the suction connector 65 (Figs. 2, 6A; paragraph 106). When assembled, a first edge/side and a second edge/side of an external surface of the strap portion 12 are adjacent to an external surface of the suction connector portion 65 (Figs. 1-2 and 6A), wherein the first edge/side is opposite the second edge/side (Fig. 5B best shows the first edge/side being the left and the second edge/side being the right side of 10).

As to claim 3, 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, Black et al. discloses the end product, i.e. the strap portion 12 and the bite block portion 14/16, 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 Hirsch' device and the invention that would have resulted from the injection molding process.

As to claims 6-7, the suction connector portion 65 is shown comprising an external plug protrusion 65 corresponding to an opening 12 in the bite block portion, capable of providing additional crush-resistance and decrease compressibility during biting by a patient (Figs. 2, 6A). As to claim 8, Black et al. shows the suction connector portion 65 having a cutout 66 (Fig. 6A) corresponding to a protrusion 30 on a vacuum adapter 30 (Fig. 2). Note that the vacuum adapter is not actively claimed and therefore not given patentable weight. As to claim 9, the suction connector portion 65 connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source provides suction of fluids from the interior of the pocket toward the vacuum source (Figs. 2, 6A, paragraph 105). As to claims 10-11, the anterior wall, posterior wall, and/or side wall comprise a plurality of perforations (best pointed to by reference numerals

62, 63, and near 61 in Fig. 6C), wherein activation of a vacuum source associated with the main body draws fluids from an exterior of the main body through the perforations into the interior of the pocket of the main body 60.

As to claim 17, the walls (dashed lines defining lumen 61 in Fig. 6C) are equivalent to the claimed stability bar protruding from an interior surface of the posterior wall and along a longitudinal axis of the main body (Fig. 6C). As to claim 18, 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, Black 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 Hirsch' device and the invention that would have resulted from the injection molding process. As to claim 20, the mouth prop 10 is detachable and therefore is inherently interchangeable with another/second mouth prop. Note that the second mouth prop is not actively claimed and therefore is not given patentable weight.

Claim Rejections - 35 USC § 103

8. 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.

9. **Claims 4-5 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Black et al. in view of Schubert (4,167,814), and further in view of Langhans (2,019,612).**

As to claim 4, the strap portion being elastic. **Schubert** discloses a mouth piece 10 and a mouth block 30/32 connected thereo; the mouth block 30-32 comprising an elastic/resilient strap portion 32 and a bite block portion 30 (Fig. 1; column 2 lines 36-46). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to substitute Black et al.'s mouth block with Schubert's bite block 30/32 and Schubert's elastic connection 32 between the bite block and the suction connector 17 as a suitable alternative bite block and connection thereof with reasonable expectation of success.

As to claims 5 and 22-23, Black/Schubert, particularly Schubert fails to disclose the suction connector portion 17 comprising a notch region corresponding to the strap portion 32. Langhans discloses a connection between a strap 34 and a cylindrical-shape connector 24, wherein an external surface of the cylindrical-shape connector portion 24 comprises a notch region (best pointed to by reference numeral 22 in Fig. 2); the notch region separating the external surface into a first surface and a second surface and defining an interior surface (base surface of notch) couple to the first surface by a first side wall (side surface of notch) and coupled to the second surface by a second side wall (other side surface of notch). As to claims 22-23, Langhans shows the strap portion 34 sits in the notch region when attached around the circumference of the cylindrical connection portion 24, and the strap portion 34 has a thickness corresponding to a height of the first side wall and the second side wall so that the strap potion 34 is flush with both the first surface and the second surface of cylindrical connection portion 24, and the strap portion 34 is adjacent to the interior notch region interior surface (Figs. 1-3; page 2 first column lines 31-35). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Black/Schubert by substituting

Schubert's snap-on connection between the strap and the cylindrical shape connector with Langhans' notch-strap connection between the strap and the cylindrical shaped connector in order to obtain a smooth flushing exterior surface at the connection area as taught by Langhans.

10. **Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Black et al. in view of Sclafani (5,890,899).** Black et al. discloses the invention substantially as claimed including the material used to form the device being flexible, translucent, high heat-resistant, as evidenced by disclosure of sterilization for reuse (abstract). However, Hirsch fails to disclose the material being silicone-base. Black et al. 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 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.

11. **Claim 12 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Black et al. in view of Hirsch et al. (2003/0134253).**

As to claim 12, Black et al. fails to disclose the cheek retractor as claimed. Hirsch et al. discloses a mouth piece 50 comprising a cheek retractor 52 (Fig. 2, paragraph 46); the cheek retractor 52 is formed of the same resilient/elastic material as the body 50. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Black et al. by incorporating such cheek retractor as taught by Hirsch et al. in order to effectively retract cheek tissues during an oral procedure.

As to claim 15-16, Hirsch et al. discloses the mouth piece 50 comprising bridge structure 24 having a wave shape defined by spaced protrusions (e.g. side walls of channel 80) at crests of the wave shape. It would have been obvious to one having ordinary skill in the art before the

effective filing date of the claimed invention to modify Black et al. by including such bridge structure as taught by Hirsch et al. in order to provide stability and reinforcement to the interior of the pocket.

Response to Arguments

12. Applicant's arguments regarding the amendment made to the claims have been fully considered but are moot in view of the new ground(s) of rejection in view of Black et al. Applicant's arguments and remarks are held to be responded to in the new ground(s) of rejection as detailed above.

Conclusion

13. 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. 14/228,061	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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,061	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043, 046	11/16/2015	HDM
A61C 17/04, 0208	06/20/2016	HDM
Update Search	06/20/2016	HDM
Update Search	07/08/2019	HDM

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

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

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

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor Search	11/16/2015	HDM
Review searches of parent case 14/100323	11/16/2015	HDM
Update Search	06/20/2016	HDM
Update Search	02/20/2017	HDM
Update Search	10/16/2017	HDM
Update Search	09/30/2018	HDM
Update Search	07/08/2019	HDM

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	14/228,061	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

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

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,061	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	07/08/2019	07/08/2019	07/08/2019	07/08/2019	07/08/2019	07/08/2019			
	1	✓	✓	✓	-	-	-			
	2	✓	✓	✓	-	-	-			
	3	✓	✓	✓	✓	✓	✓			
	4	✓	✓	✓	✓	✓	✓			
	5	✓	✓	O	✓	✓	✓			
	6	✓	✓	✓	✓	✓	✓			
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	9	✓	✓	✓	✓	✓	✓			
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	11	✓	✓	✓	✓	✓	✓			
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	15	✓	✓	O	✓	✓	✓			
	16	✓	✓	O	✓	✓	✓			
	17	✓	✓	✓	✓	✓	✓			
	18	✓	✓	✓	✓	✓	✓			
	19	✓	✓	✓	✓	✓	✓			
	20	✓	✓	✓	✓	✓	✓			
	21				✓	✓	✓			
	22						✓			
	23						✓			

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application Number	14/228,061
(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-001COE

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	07/08/2019

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

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

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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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	14/228,061
	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-001COE

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Office Action mailed 10/5/18	
		Docket No. INCEP-001COD U.S. Patent Application 14/228,057; Office Action mailed 9/7/18	

Examiner Signature	/Hao D Mai/	Date Considered	07/08/2019

*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.

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S106	2	(("20030134253") or ("5890899")).PN.	US-PGPUB; USPAT	OR	OFF	2019/07/08 09:48
S107	2	(("4878900") or ("4083115")).PN.	US-PGPUB; USPAT	OR	OFF	2019/07/08 09:49
S108	33	("2574135" | "3640552" | "3863635").PN. OR ("4083115").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2019/07/08 09:49
S109	89	("1583023" | "2531730" | "2711586" | "3335727" | "3516160" | "3713443" | "3848604" | "4068664" | "4083115" | "4205677" | "4299221").PN. OR ("4878900").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2019/07/08 09:49
S110	0	A61C17/04,0208,043.cpc. and (C$1clip with flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 09:56
S111	1	A61C17/04,0208,043.cpc. and (C$1clip)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 09:57
S112	38	("2246916" | "3126889" | "3512258" | "3526219" | "4061146" | "4111208" | "4176453" | "4253831" | "4428748" | "4634420" | "4676750" | "4692139" | "4692140" | "4816018" | "4917603" | "4921375" | "4964849" | "5052411" | "5122153" | "5123903" | "5192267").PN. OR ("5378150").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2019/07/08 10:01
S113	3	S112 and clip	US-PGPUB; USPAT; USOCR	ADJ	OFF	2019/07/08 10:01
S114	0	A61C17/04,0208,043.cpc. and (clip with flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 10:01
S116	13	(dental or medical) and (suction same (C$1clip))	US-PGPUB; USPAT; USOCR	ADJ	OFF	2019/07/08 10:03
S117	13	(dental or medical) and (flush$3 same (C$1clip))	US-PGPUB; USPAT; USOCR	ADJ	OFF	2019/07/08 10:04
S118	0	(circumference with flush$3 with (C$1clip))	US-PGPUB; USPAT; USOCR	ADJ	OFF	2019/07/08 10:10
S119	0	(circumference same flush$3 same	US-PGPUB;	ADJ	OFF	2019/07/08

		(C$1clip))	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			10:11
S120	68	(flush$3 same (C$1clip))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2019/07/08 10:12
S121	18	(flush$3 with (C$1clip))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2019/07/08 10:12
S122	1	(flush$3 with (C$1clip) with tub$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2019/07/08 11:03
S123	2	(flush$3 with (C$1clip) with (circumference or tub$3 or pipe or connect$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2019/07/08 11:04
S124	1	("6353179").PN.	US-PGPUB; USPAT	OR	OFF	2019/07/08 11:07
S125	12	("4711974" | "4860791" | "4922573" | "4967524" | "5200575" | "5214247" | "5285013" | "5422437" | "5614696" | "5811728").PN. OR ("6353179").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2019/07/08 11:08
S126	0	A61C17/04,0208,043.cpc. and (C$1ring with flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 11:08
S127	0	A61C17/04,0208,043.cpc. and (clip with flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 11:09
S128	19	(clip with flush$3 with circumference)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 11:12
S130	8	A61C17/04,0208,043.cpc. and ((clamp or clip or strap) with flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 11:28

S131	1144	(teeth or mouth or lips) same ((clamp or clip or strap) with flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 11:29
S132	14706	((clamp or clip or strap) with flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 11:29
S133	17	dental and (teeth or mouth or lips) same ((clamp or clip or strap) with flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 11:30
S134	17	dental and ((teeth or mouth or lips) same ((clamp or clip or strap) with flush$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 11:30
S135	3	dental and (((teeth or mouth or lips) with (prop or retractor)) same ((clamp or clip or strap) with flush$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 11:30
S136	108	dental and ((clamp or clip or strap) with flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 11:33
S137	1	("2776488").URPN.	USPAT	ADJ	OFF	2019/07/08 11:58
S138	18	("3562913").URPN.	USPAT	ADJ	OFF	2019/07/08 12:00
S139	38	("3562913" | "3713221" | "3772791" | "3924334" | "3938253" | "3961422" | "3962791" | "4182040" | "4268251" | "4280808" | "4340364" | "4609352" | "4836780" | "4904185" | "5035617" | "5154611" | "5498158" | "5516287").PN. OR ("6213771").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2019/07/08 12:03
S140	0	A61C17/04,0208,043.cpc. and ((band) with flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 12:07
S141	0	(11/821445).APP.	USPAT; USOCR	ADJ	OFF	2019/07/08 12:22
S142	23	("20020095119" | "4167814" | "4270531" | "4425911" | "4975057" | "5441410" | "5588836" | "5924866" | "6241521" | "6890322").PN. OR ("8870568").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2019/07/08 12:36
S143	13	A61C17/04,0208,043.cpc. and ((resilient) same flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 12:40
S144	1	A61C17/04,0208,043.cpc. and ((snap)	US-PGPUB;	ADJ	ON	2019/07/08

		same flush$3)	USPAT; USOCR; FPRS; EPO; JPO			12:40
S147	0	A61C17/04,0208,043.cpc. and ((snap$1on) same flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 12:40
S148	0	A61C17/04,0208,043.cpc. and ((clip or band or clamp) with (surface) with flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 12:44
S149	1	A61C17/04,0208,043.cpc. and ((clip or band or clamp or ring) with (surface) with flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 12:45
S150	26	(band with flush$3 with surface) and dental	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2019/07/08 12:49
S151	3	("2019612").URPN.	USPAT	ADJ	OFF	2019/07/08 12:53
S152	127	(US-20080053434-$ 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-20070231773-$ or US-20080255498-$ or US-20100297577-$ or US-20110229847-$ or US-20120015317-$ or US-20140322668-$ or US-20150100041-$ or US-20150335409-$ or US-20040033468-$ or US-20140099597-$ or US-20030054317-$ or US-20060199147-$ or US-20030219696-$ or US-20110159457-$ or US-20110217672-$).did. or (US-20160296310-$ or US-20170333159-$ or US-20150209535-$ or US-20150182319-$ or US-20080009832-$ or US-20190135365-$ or US-20190105183-$ or US-20100326736-$ or US-20180250103-$ or US-20160184067-$ or US-20140272750-$ or US-20050255422-$).did. or (US-3090122-$ 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-	US-PGPUB; USPAT; USOCR; FPRS; DERWENT	ADJ	OFF	2019/07/08 13:01

		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-4695253-$ or US-8870568-$ or US-5762496-$ or US-4906188-$ or US-5438976-$ or US-D734851-$ or US-8911232-$ or US-6743017-$ or US-6193513-$ or US-4992046-$ or US-3758950-$).did. or (US-4261697-$ or US-5975897-$ or US-5114342-$ or US-4083115-$ or US-4878900-$ or US-5322518-$ or US-5123840-$ or US-8752579-$ or US-6666686-$ or US-3713443-$ or US-2531730-$ or US-1583023-$ or US-4586900-$ or US-5487660-$ or US-10299446-$ or US-7744371-$ or US-5378150-$ or US-10022207-$ or US-8833572-$ or US-4752223-$ or US-6213771-$ or US-3713221-$ or US-7226289-$).did. or (US-2937445-$ or US-2250285-$ or US-3324855-$ or US-RE26470-$ or US-1471207-$ or US-1620773-$ or US-3562913-$ or US-2776488-$ or US-2019612-$).did. or (FR-1463351-$ or WO-2011014952-$).did. or (WO-9804023-$ or US-8833572-$).did.				
S153	57	S152 and (bit$3)	US-PGPUB; USPAT; USOCR; FPRS; DERWENT	ADJ	OFF	2019/07/08 13:02
S154	19	S152 and (prop)	US-PGPUB; USPAT; USOCR; FPRS; DERWENT	ADJ	OFF	2019/07/08 13:02
S155	51	("1053965" | "1155342" | "2701916" | "2823455" | "2873528" | "3456348" | "3802081" | "3924333" | "4024642").PN. OR ("4167814").URPN.	US-PGPUB; USPAT; USOCR	ADJ	OFF	2019/07/08 13:05

7/ 8/ 2019 2:43:27 PM
C:\ Users\ hmai1\ Documents\ EAST\ Workspaces\ 14228061.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	14/228,061
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COE

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	07/08/2019

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

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

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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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	14/228,061
	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-001COE

NON PATENT LITERATURE DOCUMENTS

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

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:	37051319
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	04-SEP-2019
Filing Date:	27-MAR-2014
Time Stamp:	19:41:57
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-001COE_IDS_Statement_9-4-19.pdf	19218 c74a4bdea3ccfbdc4e8a697ab081cd59647dc4c8	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COE_IDS_1449_9-4-19.pdf	27837 b9bc5efa663ca35ecb5876f0fde4b3fc4e812f15	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	47055	

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.: 14/228,061 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191 Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

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)
Polsinelli LLP
Three Embarcadero Center, Suite 2400
San Francisco, CA 94111
415-248-2100 (Main)
patentdocketing@polsinelli.com

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

Application Number	14228061	Filing Date	2014-03-27	Docket Number (if applicable)	INCEP-001COE	Art Unit	3772
First Named Inventor	NGUYEN			Examiner Name	MAI		

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

SUBMISSION REQUIRED UNDER 37 CFR 1.114

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

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

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

☒ Enclosed

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

MISCELLANEOUS

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

☐ Other _____

FEES

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

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

Applicant Signature

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)	2019-10-28
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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Thien Nguyen et al.	Examiner:	Hao D. Mai
Serial No.:	14/228,061	Group Art No.:	3772
Filed:	March 27, 2014	Conf. No.:	6191
Title:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP	Dkt. No.:	INCEP-001COE

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

AMENDMENT

In response to the Office Action mailed July 11, 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 6 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. (cancelled)

3. (previously presented) The mouthpiece of claim 21, wherein the strap portion is injection-molded in a single piece with the bite block portion.

4. (previously presented) The mouthpiece of claim 21, the strap portion is elastic.

5. (currently amended) The mouthpiece of claim 21, wherein [[an]] the external surface of the suction connector portion comprises a notch region corresponding to the strap portion, the notch region separating the external surface of the suction connector portion into a first surface and a second surface and defining an interior surface coupled to the first surface by a first side wall and coupled to the second surface by a second side wall.

6. (previously presented) The mouthpiece of claim 21, wherein the suction connector portion further comprises an external plug protrusion corresponding to an opening in the bite block portion.

7. (original) The mouthpiece of claim 6, wherein the plug protrusion fits into the opening of the bite block portion to provide additional crush-resistance and decreased compressibility during biting by a patient.

8. (previously presented) The mouthpiece of claim 21, wherein the suction connector portion comprises a cutout corresponding to a protrusion on a vacuum adapter for an interlocking fit.

9. (previously presented) The mouthpiece of claim 21, wherein the suction connector portion connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source provides suction of fluids from the interior of the pocket toward the vacuum source.

10. (previously presented) The mouthpiece of claim 21, wherein the anterior wall, the posterior wall, and/or the side wall comprise a plurality of perforations.

11. (original) The mouthpiece of claim 10, wherein activation of a vacuum source associated with the main body draws fluids from an exterior of the main body through the perforations into the interior of the pocket of the main body.

12. (previously presented) The mouthpiece of claim 21, further comprising a cheek retractor portion connected to the main body portion and having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

13. (cancelled)

14. (cancelled)

15. (previously presented) The mouthpiece of claim 21, further comprising a bridge structure that defines a wave shape, and wherein the bridge structure comprises spaced protrusions at crests of the wave shape.

16. (previously presented) The mouthpiece of claim 15, wherein spaces between the spaced protrusions are at troughs of the wave shape.

17. (previously presented) The mouthpiece of claim 21, 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.

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

19. (previously presented) The mouthpiece of claim 21, wherein a material that forms the main body is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

20. (previously presented) The mouthpiece of claim 21, wherein the mouth prop is interchangeable with a second mouth prop that is attachably and detachably associated with the main body portion, the second mouth prop being of a different size.

21. (currently amended) A mouthpiece comprising:

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

an anterior wall,

a posterior wall; and

a side wall connecting the anterior wall to the posterior wall;

a suction connector extending from and integral to the main body portion; and

a mouth prop comprising a bite block portion and a strap portion, wherein the strap portion corresponds to a circumference of the suction connector ~~and configured to removably attach around the circumference of the suction connector~~, wherein a first edge and a second edge of an external surface of the strap portion are adjacent to an external surface of the suction connector portion, and wherein the first edge is opposite the second edge, wherein the suction connector portion extends through and past an opening of the strap portion.

22. (previously presented) The mouthpiece of claim 5, wherein the strap portion sits in the notch region when attached around the circumference of the suction connection portion and the strap portion has a thickness corresponding to a height of the first side wall and the second side wall so that the strap portion is flush with both the first surface and the second surface.

23. (previously presented) The mouthpiece of claim 22, wherein an interior surface of the strap portion is adjacent to the interior notch region interior surface.

REMARKS

Status of the Claims

Claims 5 and 21 have been amended and support can be found through the *Specification* and, for example, in Figs. 1A, 2A, and 2B. No new matter is added. After entry of the amendments, claims 3-12 and 15-23 will be pending.

Double Patenting

The Examiner rejects claims 3-12 and 15-21 for non-statutory double patenting over claims 18-35 of U.S. Patent 8,911,232 in view of Black et al. (2009/0274991). *Office Action*, 2. Because the present claims are currently amended, it is believed that the claims may be considered patentably distinct. As such, the Applicants respectfully request reconsideration of the current scope of the respective claims and withdrawal of the rejections as appropriate.

Rejections under 35 U.S.C. §112(b)

Claims 5 and 22-23 are rejected as indefinite for reciting "an external surface of the suction connector portion" as it is unclear whether such external surface is different from "an external surface of the suction connector portion" previously defined in base claim 21. *Office Action*, 4. Claim 5 has been amended to recite, "the external surface of the suction connector portion".

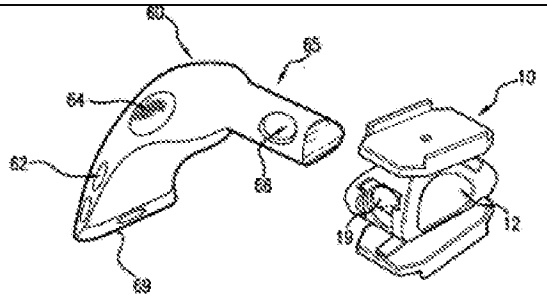
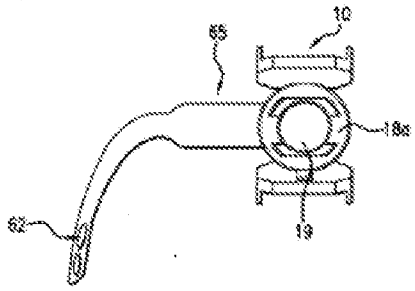
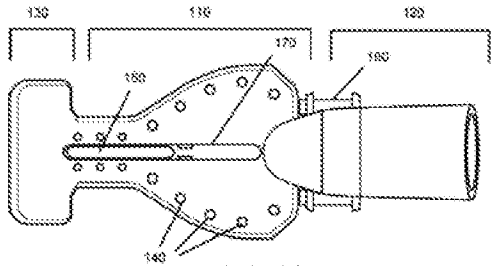
Claims 5 and 22-23 are rejected as indefinite for also reciting "the external surface" as it is unclear whether such external surface is of the suction connector portion or the strap portion. *Id.* Claim 5 has been amended to recite, "separating the external surface of the suction connector portion into a first surface and a second surface".

As such, Applicants request that the rejections be withdrawn.

Rejections under 35 U.S.C. §102

Claims 3, 6-7, 9-11, 17-18, and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Application Publication No. 2009/0274991 to Black et al. ("*Black*"). *Id.*

The independent claim recited 'wherein the suction connector portion extends through and past an opening of the strap portion.' The cited reference—*Black*—does not disclose a suction connector extending **through and past** an opening of the strap portion. *Black* discloses a neck 65 of a tongue shield aspirator 60 having a transverse anterior opening 66, shown in FIG. 6A reproduced below. The neck 65 is received within a lateral orifice 12 of bite member 10, such that the anterior opening 66 is aligned with an opening in an anterior face of the bite member 10. When the neck 65 is assembled in the bite member 10, the neck 65 does not extend through and past the bite member 10, as shown in FIG. 6B.

Hirsch	Applicants
 FIG. 6A  FIG. 6B	 FIG. 1B

In contrast, as shown in Applicants' FIG. 1B above, the suction connector 120 of the Applicants' mouthpiece extends through and past an opening of the strap portion of the mouth prop 160. As such, *Black* does not disclose the claimed mouthpiece having a suction connector extending through and past an opening of the strap portion.

Claims 3, 6-7, 9-11, 17-18, and 20 depend from independent claim 21 and are allowable for at least the same reasons as claim 21. For at least these reasons, withdrawal of the rejections is requested.

Rejections Under 35 U.S.C. §103

Claims 4-5 and 22-23 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Black* in view of U.S. Patent No. 4,167,814 to Schubert and in further view of U.S. Patent No. 2,019,612 to Langhans. Applicants respectfully disagree. Because claims 4-5 and 22-23 depend from independent claim 21, claims 4-5 and 22-23 are allowable for at least the same reasons as claim 21 from which it depends. Withdrawal of the rejection is requested.

Claim 19 was rejected under 35 U.S.C. 103(a) as being unpatentable over *Black* in view of U.S. Patent No. 5,890,899 by Sclafani. Applicants respectfully disagree. Because claim 19 depends from independent claim 21, claim 19 is allowable for at least the same reasons as claim 21 from which it depends. Withdrawal of the rejection is requested.

Claims 12 and 15-16 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Black* in view of U.S. Patent Publication No. 2003/0134253 to Hirsch. Applicants respectfully disagree. Because claims 12 and 15-16 depend from independent claim 21, claims 12 and 15-16 are allowable for at least the same reasons as claim 21 from which it depends. Withdrawal of the rejection is 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 the Applicants' invention as defined by the claims is patentable over the references of record. Issuance of a Notice of Allowance is solicited.

With this amendment, Applicants submit a request for continued examination and a petition for an extension of time of one month, along with the corresponding fees. Applicants believe no other fees or petitions are due with this filing. However, should any such fees or petitions be required, please consider this a request therefor and authorization to charge Deposit Account No. 50-3199 as necessary.

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 28, 2019

POLSINELLI *LLP*

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Electronic Patent Application Fee Transmittal

Application Number:	14228061
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Stephanie Thien Vu/Rita Christensen
Attorney Docket Number:	INCEP-001COE

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 $0 paid	2251	1	100	100
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	2820	1	950	950
		Total in USD ($)		**1050**

Electronic Acknowledgement Receipt

EFS ID:	37583806
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	28-OCT-2019
Filing Date:	27-MAR-2014
Time Stamp:	18:44:21
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$1050
RAM confirmation Number	E20190RI44366656
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	Request for Continued Examination (RCE)	514248-sb0030efs.pdf	1349903 8e1e8a438dc1816f491d33e07e41d291f183f665	no	3
Warnings:					
Information:					
2		514248-AMENDMENT.pdf	165445 a31a860db85f932a60f7dc96579c4c0a804b183a	yes	9

Multipart Description/PDF files in .zip description

Document Description	Start	End
Response After Final Action	1	1
Claims	2	5
Applicant Arguments/Remarks Made in an Amendment	6	9

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	32310 7488186946263e27fe14fd8ad9808f6e318faaf1	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1547658		

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

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

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/228,061	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	10/28/2019	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))	* 1	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/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.

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,061
	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-001COE

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:	38202009
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	06-JAN-2020
Filing Date:	27-MAR-2014
Time Stamp:	15:06:21
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-001COE_IDS_Statement_1-6-20.pdf	18188 647831dec987c6e30be8707032938464b795a152	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COE_IDS_1449_1-6-20.pdf	27780 1703a62661a48aadaee8a3865e1ed9010b663d9a	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	45968	

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.: 14/228,061 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191 Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

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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Three Embarcadero Center, Suite 2400
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patentdocketing@polsinelli.com

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,061	03/27/2014	Thien Nguyen	INCEP-001COE	6191

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. 14/228,061	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 10/28/2019.

☐ 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) 3-12 and 15-23 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) 3-12 and 15-23 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 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 10/28/2019 has been entered.

Double Patenting

3. 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.

4. **Claims 3-12 and 15-23 are rejected on the ground of nonstatutory double patenting over claims 18-35 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 claim 21 essentially claims the subject matter of the patent claim 18. The difference between the application claims and the patent claims lies in the fact that application claim 21 newly recites " wherein a first edge and a second edge of an external surface of the strap portion are adjacent to an external surface of the suction connector portion", which is not recited the patent claim. However, Black et al. discloses a mouth prop 10 (Figs. 2, 6A) comprising a bite block portion 14/16, and a strap portion 12 corresponding to and configured to removably attach around a circumference of the suction connector 65 (Figs. 2, 6A; paragraph 106). When assembled, a first edge and a second edge of the respective openings of the bore 12 the strap portion 12 are adjacent to an external surface of the suction connector portion 65 since the bore 12 form fittingly receives the suction connector portion 65 (see Fig. 3C), wherein the first edge is opposite the second edge of bore 12. Regarding the newly recited recitation(s), note that the suction connector portion 65 extends through and past at least a first opening of the strap portion 12 (Figs. 6A and 8). That is, the strap portion 12 has a bore with two opposite openings; and the suction connector 65 extends through and past at least a first opening of the strap portion 12. It would have been obvious to one of ordinary skill in the art to modify the patent claim to specifically claim a first edge and a second edge of an external surface of the strap portion are adjacent to an external surface of the suction connector portion as taught by Black et al. as suitable alternative connection between the two elements.

Claim Rejections - 35 USC § 112

5. 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.

6. **Claims 3-12 and 15-23** 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.

- Base claim 21 recites "the suction connector portion" (at lines 10-11, and at lines 11-12), which lack sufficient antecedent basis in the claim. Note that the claim recite "a suction connector" (line 6)

All dependent claims are rejected herein as indefinite based on dependency of the base claim 21.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 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.

8. **Claim 3, 6-7, 9-11, 17-18, and 20, are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by Black et al. (2009/0274991).**

Regarding claim 21, Black et al. discloses a dental mouthpiece (Figs. 6A,) comprising a main body portion 60 that is configured as a pocket (i.e. hollow lumen 61) having an interior defined by: an anterior wall and a posterior wall (left convex and right concave face shown in Figs. 6A-6B), and a side wall (62) connecting the anterior wall to the posterior wall (Figs. 6A-6B;

paragraph 94). There is a suction connector 65 extending from and integral to the main body 60 (Fig. 6A). Black et al. further discloses a mouth prop 10 (Figs. 2, 6A) comprising a bite block portion 14/16, and a strap portion 12 corresponding to and configured to removably attach around a circumference of the suction connector 65 (Figs. 2, 6A; paragraph 106). When assembled, a first edge and a second edge of the respective openings of the bore 12 the strap portion 12 are adjacent to an external surface of the suction connector portion 65 since the bore 12 form fittingly receives the suction connector portion 65 (see Fig. 3C), wherein the first edge is opposite the second edge of bore 12.

Regarding the newly recited recitation(s), note that the suction connector portion 65 extends through and past at least a first opening of the strap portion 12 (Figs. 6A and 8). That is, the strap portion 12 has a bore with two opposite openings; and the suction connector 65 extends through and past at least a first opening of the strap portion 12

As to claim 3, 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, Black et al. discloses the end product, i.e. the strap portion 12 and the bite block portion 14/16, 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 Hirsch' device and the invention that would have resulted from the injection molding process.

As to claims 6-7, the suction connector portion 65 is shown comprising an external plug protrusion 65 corresponding to an opening 12 in the bite block portion, capable of providing additional crush-resistance and decrease compressibility during biting by a patient (Figs. 2, 6A).

As to claim 8, Black et al. shows the suction connector portion 65 having a cutout 66 (Fig. 6A) corresponding to a protrusion 30 on a vacuum adapter 30 (Fig. 2). Note that the vacuum adapter is not actively claimed and therefore not given patentable weight. As to claim 9, the suction connector portion 65 connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source provides suction of fluids from the interior of the pocket toward the vacuum source (Figs. 2, 6A, paragraph 105). As to claims 10-11, the anterior wall, posterior wall, and/or side wall comprise a plurality of perforations (best pointed to by reference numerals 62, 63, and near 61 in Fig. 6C), wherein activation of a vacuum source associated with the main body draws fluids from an exterior of the main body through the perforations into the interior of the pocket of the main body 60.

As to claim 17, the walls (dashed lines defining lumen 61 in Fig. 6C) are equivalent to the claimed stability bar protruding from an interior surface of the posterior wall and along a longitudinal axis of the main body (Fig. 6C). As to claim 18, 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, Black 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 Hirsch' device and the invention that would have resulted from the injection molding process. As to claim 20, the mouth prop 10 is detachable and therefore is inherently interchangeable with another/second mouth prop. Note that the second mouth prop is not actively claimed and therefore is not given patentable weight.

Claim Rejections - 35 USC § 103

9. 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.

10. **Claims 4-5 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Black et al. in view of Schubert (4,167,814), and further in view of Langhans (2,019,612).**

As to claim 4, Black et al. fails to disclose the strap portion being elastic. **Schubert** discloses a mouth piece 10 and a mouth block 30/32 connected thereo; the mouth block 30-32 comprising an elastic/resilient strap portion 32 and a bite block portion 30 (Fig. 1; column 2 lines 36-46). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to substitute Black et al.'s mouth block with Schubert's bite block 30/32 and Schubert's elastic connection 32 between the bite block and the suction connector 17 as a suitable alternative bite block and connection thereof with reasonable expectation of success.

As to claims 5 and 22-23, Black/Schubert, particularly Schubert fails to disclose the suction connector portion 17 comprising a notch region corresponding to the strap portion 32. Langhans discloses a connection between a strap 34 and a cylindrical-shape connector 24, wherein an external surface of the cylindrical-shape connector portion 24 comprises a notch region (best pointed to by reference numeral 22 in Fig. 2); the notch region separating the external surface into a first surface and a second surface and defining an interior surface (base surface of notch) couple to the first surface by a first side wall (side surface of notch) and coupled to the second surface by a second side wall (other side surface of notch). As to claims

22-23, Langhans shows the strap portion 34 sits in the notch region when attached around the circumference of the cylindrical connection portion 24, and the strap portion 34 has a thickness corresponding to a height of the first side wall and the second side wall so that the strap potion 34 is flush with both the first surface and the second surface of cylindrical connection portion 24, and the strap portion 34 is adjacent to the interior notch region interior surface (Figs. 1-3; page 2 first column lines 31-35). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Black/Schubert by substituting Schubert's snap-on connection between the strap and the cylindrical shape connector with Langhans' notch-strap connection between the strap and the cylindrical shaped connector in order to obtain a smooth flushing exterior surface at the connection area as taught by Langhans.

11. **Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Black et al. in view of Sclafani (5,890,899).** Black et al. discloses the invention substantially as claimed including the material used to form the device being flexible, translucent, high heat-resistant, as evidenced by disclosure of sterilization for reuse (abstract). However, Hirsch fails to disclose the material being silicone-base. Black et al. 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 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.

12. **Claim 12 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Black et al. in view of Hirsch et al. (2003/0134253).**

As to claim 12, Black et al. fails to disclose the cheek retractor as claimed. Hirsch et al. discloses a mouth piece 50 comprising a cheek retractor 52 (Fig. 2, paragraph 46); the cheek

retractor 52 is formed of the same resilient/elastic material as the body 50. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Black et al. by incorporating such cheek retractor as taught by Hirsch et al. in order to effectively retract cheek tissues during an oral procedure.

As to claim 15-16, Hirsch et al. discloses the mouth piece 50 comprising bridge structure 24 having a wave shape defined by spaced protrusions (e.g. side walls of channel 80) at crests of the wave shape. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Black et al. by including such bridge structure as taught by Hirsch et al. in order to provide stability and reinforcement to the interior of the pocket.

Response to Arguments

13. Applicant's arguments regarding the amendment made to the claims have been fully considered but fail to overcome Black et al.

Regarding the newly recited recitation(s), note that Black et al. discloses the suction connector portion 65 extends through and past at least a first opening 12 of the strap portion 12 (Figs. 6A). That is, the strap portion 12 is an orifice with two opposite openings (best shown in Fig. 8); and the suction connector 65 extends through and past at least a first opening of the strap portion 12

Conclusion

14. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). 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 mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hao D. Mai whose telephone number is (571) 270-3002. The examiner can normally be reached on Monday-Friday 8:00AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Cris Rodriguez, at (571) 272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hao D Mai/
Examiner, Art Unit 3772

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

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,061	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	07/08/2019	07/08/2019	07/08/2019	07/08/2019	07/08/2019	07/08/2019	01/06/2020		
	1	✓	✓	✓	-	-	-	-		
	2	✓	✓	✓	-	-	-	-		
	3	✓	✓	✓	✓	✓	✓	✓		
	4	✓	✓	✓	✓	✓	✓	✓		
	5	✓	✓	O	✓	✓	✓	✓		
	6	✓	✓	✓	✓	✓	✓	✓		
	7	✓	✓	✓	✓	✓	✓	✓		
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	15	✓	✓	O	✓	✓	✓	✓		
	16	✓	✓	O	✓	✓	✓	✓		
	17	✓	✓	✓	✓	✓	✓	✓		
	18	✓	✓	✓	✓	✓	✓	✓		
	19	✓	✓	✓	✓	✓	✓	✓		
	20	✓	✓	✓	✓	✓	✓	✓		
	21				✓	✓	✓	✓		
	22						✓	✓		
	23						✓	✓		

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,061	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043, 046	11/16/2015	HDM
A61C 17/04, 0208	06/20/2016	HDM
Update Search	06/20/2016	HDM
Update Search	07/08/2019	HDM
Update Search	01/06/2020	HDM

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

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

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

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,061	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor Search	11/16/2015	HDM
Review searches of parent case 14/100323	11/16/2015	HDM
Update Search	06/20/2016	HDM
Update Search	02/20/2017	HDM
Update Search	10/16/2017	HDM
Update Search	09/30/2018	HDM
Update Search	07/08/2019	HDM
Update Search	01/06/2020	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
L3	1	A61C17/04,0208,043.cpc. and ((snap) same flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2020/01/06 05:33
L4	9	A61C17/04,0208,043.cpc. and ((strap or bore) with flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2020/01/06 05:33
L5	75	"433".clas. and (flush$3 with (groove or recess or notch)) and (handle or handpiece)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2020/01/06 05:39
L6	6	A61C17/04,0208,043.cpc. and (flush$3 with (groove or recess or notch)) and (handle or handpiece)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2020/01/06 05:39

EAST Search History (Interference)

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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	14/228,061
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COE

NON PATENT LITERATURE DOCUMENTS

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

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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Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COE

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-				
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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	

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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	14/228,061
	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-001COE

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Office Action mailed 1/10/20	
		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Office Action mailed 1/13/20	

Examiner Signature		Date Considered	

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Electronic Acknowledgement Receipt

EFS ID:	38980026
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	27-MAR-2020
Filing Date:	27-MAR-2014
Time Stamp:	23:20:34
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	INCEP-001COE_IDS_Statement_3-27-20.pdf	19180 89374f572de89f226bb70157d7be96321887d382	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COE_IDS_1449_3-27-20.pdf	55015 93d83120746af57d74b73af415cbac337a1428a5	no	2
Warnings:					
Information:					
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			Total Files Size (in bytes):	74195	

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.: 14/228,061 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191 Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

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
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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	14/228,061
	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-001COE

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.

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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Electronic Acknowledgement Receipt

EFS ID:	39026846
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	01-APR-2020
Filing Date:	27-MAR-2014
Time Stamp:	13:40:53
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	INCEP-001COE_IDS_Statement_4-1-20.pdf	18684 c4ea818a04bdb89e91f1bf44afa90c6a1874a94b	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COE_IDS_1449_4-1-20.pdf	27679 e9b6654bab8c74b341f1592f48617ad7353aa48b	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):	348305		

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New Applications Under 35 U.S.C. 111

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New International Application Filed with the USPTO as a Receiving Office

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772 Examiner: Hao D. Mai

Serial No.: 14/228,061 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191 Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

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)
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PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/228,061	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	04/10/2020	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))	* 1	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

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

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

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

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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-001COE	14/228,061	03-27-2014
First Named Inventor:	**Title:**	
Thien Nguyen	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP	

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 L. Chung/	April 10, 2020
Name (Print/Typed) Ruby L. 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 5, 6, 8, 9, and 21 have been currently amended. Support for the amended independent claim 21 can be found in at least paragraphs [0041], [0044], and FIG. 1B, 2A, 3A-3F of the *Specification*. Claims 5, 6, 8, and 9 have been currently amended to address antecedent basis issue. The claims reflect subject matter to which the Applicant believes it is entitled to claim. As such, no new matter has been added.

Double Patenting

Claims 3-12 and 15-23 are rejected on the ground of nonstatutory double patenting over claims 18-35 of U.S. Patent No. 8,911,232 in view of *Black* et al. (2009/0274991). *Office Action*, at 3. The Applicant has amended the independent claim of the present application and contends that the present rejection of record may no longer be appropriate in light of the amendment. Should the Examiner wish to maintain the double patenting rejection and otherwise find the application in condition for allowance, the Examiner is respectfully requested to contact the undersigned to discuss subsequent submission of a disclaimer if appropriate.

Rejections under 35 U.S.C. § 112

Claims 3-12 and 15-23 are rejected under 35 U.S.C. § 112(b) as being indefinite for failing to particularly point out and distinctly claim the subject matter. *Office Action*, at 4. Claims 5, 6, 8, 9, and 21 has been amended by deleting 'portion' from the suction connector portion to recite 'the suction connector' which solves the antecedent basis issue in claims 3-12 and 15-23 in regards to 'the suction connector.' Withdrawal of the rejection and allowance of claims 3-12 and 15-23 are respectfully requested.

Rejections under 35 U.S.C. § 102 and § 103

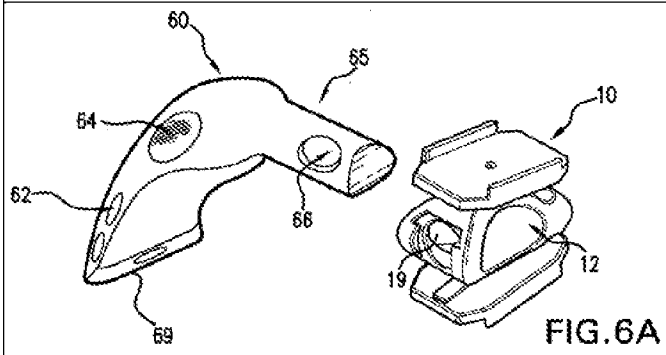
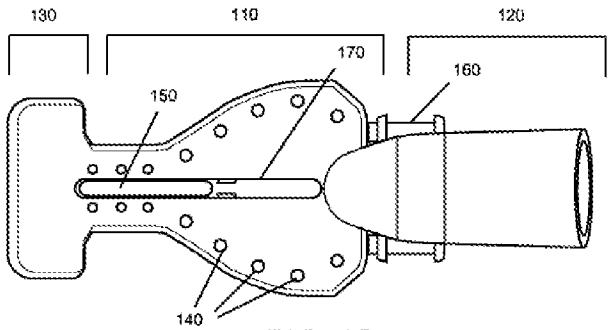
Claims 3, 6-7, 9-11, 17-18 and 20 are rejected under 35 U.S.C. § 102 as being anticipated by *Black* (US Patent Publication 2009/0274991). *Office Action*, at 4. Claims 4-5 and 22-23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Black* in view of *Schubert* (U.S. Patent 4,167,814), and further in view of *Langhans* (U.S. Patent 2,019,612). *Id.*, at 7. Claim 19 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Black* in view of *Sclafani* (U.S. Patent 5,890,899). *Id.*, at 8. Claims 12 and 15-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Black* in view of *Hirsch* (U.S. Patent Publication 2003/0134253). *Id.*, at 8-9. The Applicant respectfully disagrees and presents the following remarks.

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

- a suction connector extending from a base of the main body portion and integral to the main body portion, the suction connector including **a cavity extending from a longitude of the pocket of the main body portion** and **through a length of the suction connector**

The recited limitations find support in the *Specification*, which describes the suction connector portion 120 being "oval-shaped" "attached to the main body portion" and "configured to attach to a high-suction vacuum adapter and assist in transferring water, saliva, and debris from the oral cavity to the external adapter for removal." *Specification*, at [0041]. Such limitations pertain to a suction connector having one opening to the main body portion and having the other "oval-shaped" opening directly opposite from the main body, creating a cavity that is 'longitude of the pocket of the main body portion and through the length of the suction connector.' *Id.* at FIG. 1B.

In contrast, the "neck" of *Black*, Element 65 as seen below, does not have an opening directly opposite from the main body 'longitudinal to the length of the suction connector.' *Black* at [0096] and FIG. 6A. Instead, the element 66 is "a transverse anterior opening" that opens middle of the "neck." *Id.*

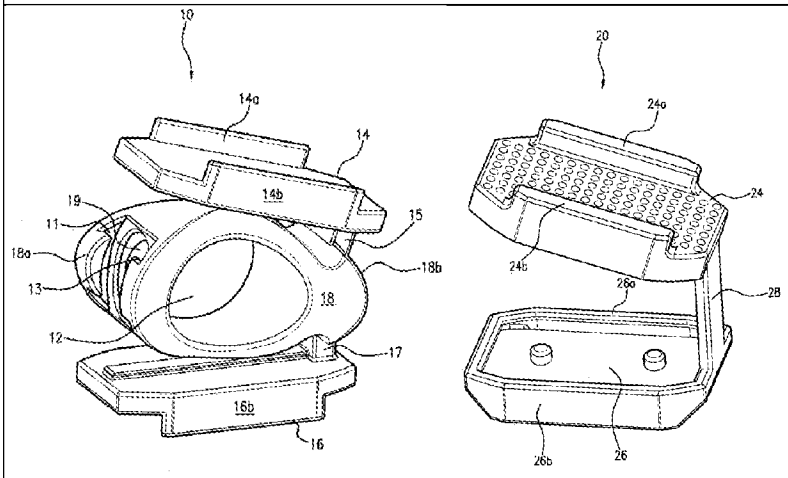
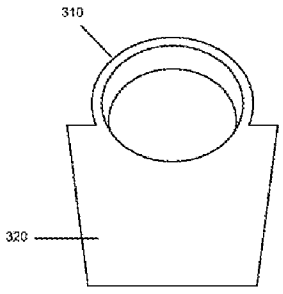
BLACK	APPLICANT
 FIG.6A	 FIG. 1B

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

- a mouth prop comprising a bite block portion and a strap portion, **wherein the mouth prop is injection molded in one piece**

The recited limitations find support in the *Specification*, which describes the mouth prop 160 "made of thickened silicone material injection molded in a single piece with an elastic strap" and can be used "to prop open a patient's mouth and teeth" without a need for a separate grip. *Specification*, at [0044] and FIG. 3A-3F.

In contrast, *Black* discloses a bite block portion consisting of multiple parts that are not injection molded in a single piece. The bite member 10 of *Black* has "an upper member 14 and a lower member 16" that are "connected to an intermediate member 18 via respective connection sections 15, 17, proximate a posterior end 18b of the intermediate member 18." *Black,* at [0102], FIG. 8. The bite grip 20 of *Black* "cushions the patient's teeth from the bite member" and has "an upper member 24 and a lower member 26 that are joined to one another by a vertical spine 28." *Id.* at [0103], FIG 9. Not only are the bite member 10 and bite grip 20 clearly separate parts, but they themselves are non-continuous, consisting of multiple components as seen below.

BLACK	APPLICANT
 FIG.8 FIG.9	 FIG. 3A

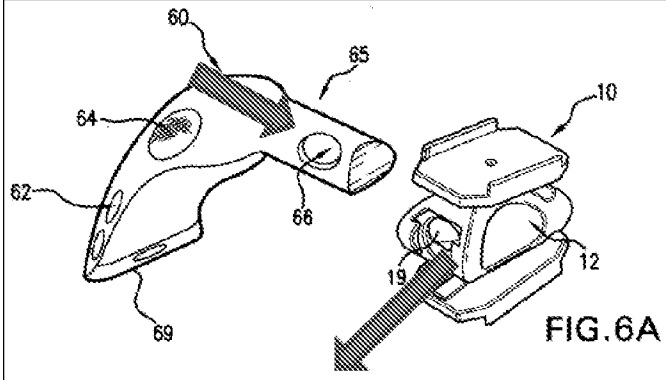
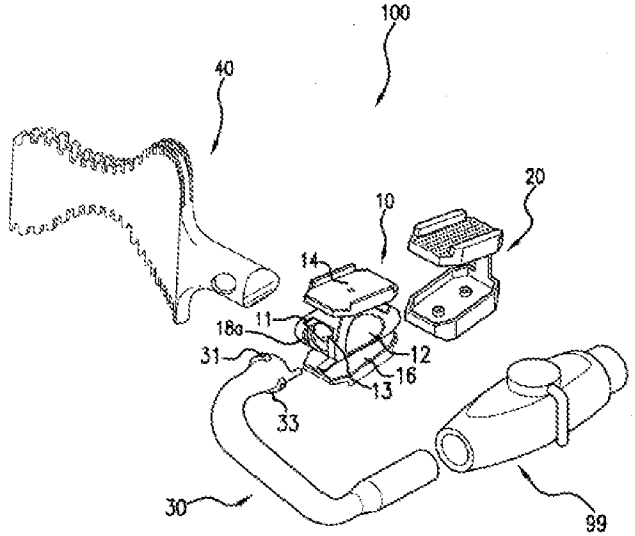
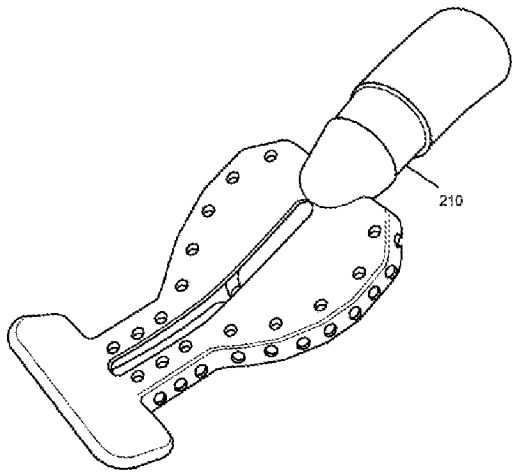
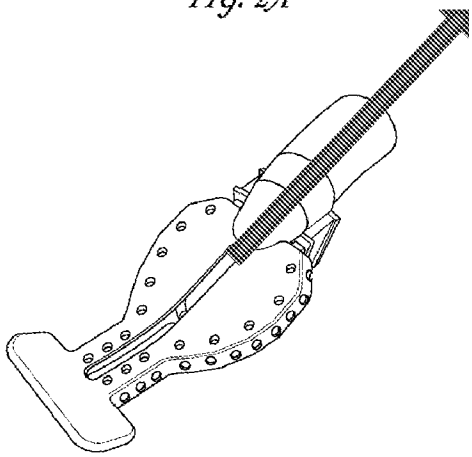
Claim 21 has been currently amended to recite as the follows (emphasis added):

- the strap portion corresponds to a circumference of the suction connector**, wherein an opening of the strap portion is parallel to the longitudinal cavity of the suction connector**, wherein a first edge and a second edge of an external surface of the strap portion are adjacent to an external surface of the suction connector, and wherein the first edge is opposite the second edge, wherein the suction connector extends **through and past the strap portion**.

The recited limitations find support in the *Specification*, which describes the mouth prop 160 having a strap portion "corresponding to the circumference of the suction connector portion" which rests in the "notched region 210" of the suction connector portion such that "when the strap is in place, the external walls of the strap and the rest of the connector portion may be flush." *Specification*, at [0041], [0044] and FIG. 1B, 2A. As seen from FIG 1B and 2A, the opening of the strap portion is 'parallel to the longitudinal cavity of the suction connector' such that the strap portion does not interrupt the suction connector "transferring water, saliva, and debris from the oral cavity to the external adapter for removal." *Id.*

The Office Action argues that the strap portion is analogous to element 12 of *Black*. *Office Action*, at 5 (*Black et al*. further discloses […] a strap portion 12 corresponding to and configured to removably attach around a circumference of the suction connector 65). However, the "lateral orifice 12" of *Black* accommodates the end of "tongue shield aspirators" as the tongue shield

aspirators protrudes out of the bite member and thus is not analogous to the strap portion of the mouth prop. *Black* at [0102], FIG. 2. Element 19 of FIG. 6A (or element 18a in FIG. 2) is "an anterior opening" for "accommodating an end of an evacuation tube 30" which is actually analogous to the strap portion and dictates the direction of the "air, fluid, or debris" as "it travels through the longitudinal hallow lumen and into the evacuation tube" *Id.* at [0102], [0106], and FIG. 2, 6A. As seen in FIG. 2 and 6A of Black, the direction of fluid is changed by 90 degrees as the fluid travels from the "neck 65" through "transverse anterior opening 66" and out of "anterior opening 19" and into "evacuation tube 30". *Id.* at [0096], [0102], [0106] and FIG. 2, 6A.

BLACK	APPLICANT
 FIG.6A  FIG.2	 FIG. 2A  FIG. 1A

Thus, Applicant respectfully submits that *Black* fails to teach each and every limitation of the independent claims and requests that the rejections under 35 U.S.C. § 102 be withdrawn.

Schubert and *Langhans* cited by the *Office Action* only apply to dependent claims 4-5 and 22-23 and cannot cure the deficiencies of *Black* with regards to the independent claim 21. *Office Action*, at 7. Similarly, *Sclafani* cited by the *Office Action* only applies to dependent claim 19 and cannot cure the deficiencies of *Black* with regards to the independent claim 21. *Id.*, at 8. Likewise, *Hirsch* cited by the *Office Action* only applies to dependent claims 12 and 15-16 and cannot cure the deficiencies of *Black* with regards to the independent claim 21. *Id.*, at 8-9.

In view of the above, Applicant respectfully requests that the rejections 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.

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

Respectfully submitted,
Dryshield, LLC

April 10, 2020

By: / Ruby Chung /

Ruby Chung (76,809)
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San Francisco, CA 94111
Phone: (415) 248-2121
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IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (cancelled)

2. (cancelled)

3. (previously presented) The mouthpiece of claim 21, wherein the strap portion is injection-molded in a single piece with the bite block portion.

4. (previously presented) The mouthpiece of claim 21, the strap portion is elastic.

5. (currently amended) The mouthpiece of claim 21, wherein an external surface of the suction connector ~~portion~~ comprises a notch region corresponding to the strap portion, the notch region separating the external surface into a first surface and a second surface and defining an interior surface coupled to the first surface by a first side wall and coupled to the second surface by a second side wall.

6. (currently amended) The mouthpiece of claim 21, wherein the suction connector ~~portion~~ further comprises an external plug protrusion corresponding to an opening in the bite block portion.

7. (original) The mouthpiece of claim 6, wherein the plug protrusion fits into the opening of the bite block portion to provide additional crush-resistance and decreased compressibility during biting by a patient.

8. (currently amended) The mouthpiece of claim 21, wherein the suction connector ~~portion~~ comprises a cutout corresponding to a protrusion on a vacuum adapter for an interlocking fit.

9. (currently amended) The mouthpiece of claim 21, wherein the suction connector ~~portion~~ connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source provides suction of fluids from the interior of the pocket toward the vacuum source.

10. (previously presented) The mouthpiece of claim 21, wherein the anterior wall, the posterior wall, and/or the side wall comprise a plurality of perforations.

11. (original) The mouthpiece of claim 10, wherein activation of a vacuum source associated with the main body draws fluids from an exterior of the main body through the perforations into the interior of the pocket of the main body.

12. (previously presented) The mouthpiece of claim 21, further comprising a cheek retractor portion connected to the main body portion and having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

13. (cancelled)

14. (cancelled)

15. (previously presented) The mouthpiece of claim 21, further comprising a bridge structure that defines a wave shape, and wherein the bridge structure comprises spaced protrusions at crests of the wave shape.

16. (previously presented) The mouthpiece of claim 15, wherein spaces between the spaced protrusions are at troughs of the wave shape.

17. (previously presented) The mouthpiece of claim 21, 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.

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

19. (previously presented) The mouthpiece of claim 21, wherein a material that forms the main body is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

20. (previously presented) The mouthpiece of claim 21, wherein the mouth prop is interchangeable with a second mouth prop that is attachably and detachably associated with the main body portion, the second mouth prop being of a different size.

21. (currently amended) A mouthpiece comprising:

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

an anterior wall,

a posterior wall; and

a side wall connecting the anterior wall to the posterior wall;

a suction connector extending from a base of the main body portion and integral to the main body portion, the suction connector including a cavity extending from a longitude of the pocket of the main body portion and through a length of the suction connector; and

a mouth prop comprising a bite block portion and a strap portion, wherein the mouth prop is injection molded in one piece, wherein the strap portion corresponds to a circumference of the suction connector, wherein an opening of the strap portion is parallel to the longitudinal cavity of the suction connector, wherein a first edge and a second edge of an external surface of the strap portion are adjacent to an external surface of the suction connector ~~portion~~, and wherein the first edge is opposite the second edge, wherein the suction connector ~~portion~~ extends through and past ~~an opening of~~ the strap portion.

21. (previously presented) The mouthpiece of claim 5, wherein the strap portion sits in the notch region when attached around the circumference of the suction connection portion and the strap portion has a thickness corresponding to a height of the first side wall and the second side wall so that the strap portion is flush with both the first surface and the second surface.

22. (previously presented) The mouthpiece of claim 22, wherein an interior surface of the strap portion is adjacent to the interior notch region interior surface.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Dryshield, LLC
INVENTOR(S):	Thien Nguyen, et al.
APPLICATION NO.:	14/228,061
FILED:	March 27, 2014
TITLE:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
EXAMINER:	Hao D. Mai
ART UNIT:	3772
CONF. NO.:	6191
ATTY.DKT.NO.:	INCEP-001COE

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

RESPONSE K

Examiner Mai:

In response to the office action mailed January 10, 2020 (*Office Action*), the Applicant provides the following **amendments to the claims**, beginning on page **two**. The **remarks** and **conclusion** begin on pages **six** and **twelve**, respectively.

Electronic Acknowledgement Receipt

EFS ID:	39124061
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	10-APR-2020
Filing Date:	27-MAR-2014
Time Stamp:	15:31:28
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	After Final Consideration Program Request	INCEP-001COE_AFCP_4-10-20.pdf	175401 56337dc09850d1f7118aaf57be2f88299888457f	no	2

Warnings:

Information:					
2		INCEP-001COE_RESP_K_4-10-20.pdf	360675 03e6ecb793b6029ab39270531275166c33231115	yes	12

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Applicant Arguments/Remarks Made in an Amendment	6	12
	Claims	2	5
	Response After Final Action	1	1

Warnings:	
Information:	
Total Files Size (in bytes):	536076

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 DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,061	03/27/2014	Thien Nguyen	INCEP-001COE	6191

138718 7590 06/12/2020

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

EXAMINER	
MAI, HAO D	

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
06/12/2020	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

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 14/228,061	**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 --

THE REPLY FILED 10 April 2020 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 3 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 APPLICANTS 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 37CFR 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 37CFR 1.116 and 41.33(a)).
4. ☑ The amendments are not in compliance with 37CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☑ Applicants reply has overcome the following rejection(s): 35 USC 112
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: See Continuation Sheet.
13. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
14. ☑ Other: PTO2323, PTOL324.

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:3-12 and 15-23.
    Claim(s) withdrawn from consideration:_____.

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

Continuation of 3. NOTE: The proposed amendment raises new issues that would require further consideration and/or search, and does not materially reduces or simplify the issues for appeal.

Continuation of REQUEST FOR RECONSIDERATION/OTHER 12. The request for reconsideration has been considered but does NOT place the application in condition for allowance because:

At preliminary review, the proposed amendment appears to have not overcome the double patenting and 102 ground of rejection under Black et al. Note that Black et al. discloses the strap portion 12 has an opening/bore which is parallel to the longitudinal cavity of the suction connector (neck connector of 40). The proposed amendment raises new issues that would require further consideration and/or search, which could not be made within the guidelines of the after-final pre-pilot guideline.

Notice of Non-Compliant Amendment (37 CFR 1.121)	Application No. 14/228,061	Applicant(s) Nguyen, Thien	
	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 --

The amendment document filed on 04/10/2020 is considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121 or 1.4. In order for the amendment document to be compliant, correction of the following item(s) is required.

THE FOLLOWING MARKED (X) ITEM(S) CAUSE THE AMENDMENT DOCUMENT TO BE NON-COMPLIANT:

- ☐ 1. Amendments to the specification:
  - ☐ A. Amended paragraph(s) do not include markings.
  - ☐ B. New paragraph(s) should not be underlined.
  - ☐ C. Other _____ .
- ☐ 2. Abstract:
  - ☐ A.Not presented on a separate sheet. 37 CFR 1.72.
  - ☐ B.Other _____ .
- ☐ 3. Amendments to the drawings:
  - ☐ A. The drawings are not properly identified in the top margin as "Replacement Sheet", "New Sheet", or "Annotated Sheet" as required by 37 CFR 1.121(d).
  - ☐ B. The practice of submitting proposed drawing correction has been eliminated. Replacement drawings showing amended figures, without markings, in compliance with 37 CFR 1.84 are required.
  - ☐ C. Other _____ .
- ☑ 4. Amendments to the claims:
  - ☐ A. A complete listing of all of the claims is not present.
  - ☐ B. The listing of claims does not include the text of all pending claims (including withdrawn claims)
  - ☐ C. Each claim has not been provided with the proper status identifier, and as such, the individual status of each claim cannot be identified. Note: the status of every claim must be indicated after its claim number by using one of the following status identifiers: (Original), (Currently amended), (Canceled), (Previously presented), (New), (Not entered), (Withdrawn) and (Withdrawn-currently amended).
  - ☐ D. The claims of this amendment paper have not been presented in ascending numerical order.
  - ☑ E. Other: See Continuation Sheet .
- ☐ 5. Other (e.g., the amendment is unsigned or not signed in accordance with 37 CFR 1.4):

_____

For further explanation of the amendment format required by 37 CFR 1.121, see MPEP § 714.

TIME PERIODS FOR FILING A REPLY TO THIS NOTICE:

1. Applicant is given **no new time period if the non-compliant amendment is an** after-final amendment or an amendment filed after allowance. If applicant wishes to resubmit the non-compliant after-final amendment with corrections, the **entire corrected amendment** must be resubmitted.

2. Applicant is given **two months** from the mail date of this notice to supply the correction, if the non-compliant amendment is one of the following: a preliminary amendment, a non-final amendment (including a submission for a request for continued examination (RCE) under 37 CFR 1.114), a supplemental amendment filed within a suspension period under 37 CFR 1.103(a) or (c), and an amendment filed in response to a *Quayle* action. If any of above boxes 1. to 4. are checked, the correction required is only the **corrected section** of the non-compliant amendment in compliance with 37 CFR 1.121.

   Extensions of time are available under 37 CFR 1.136(a) only if the non-compliant amendment is a non-final amendment or an amendment filed in response to a *Quayle* action.

   Failure to timely respond to this notice will result in:
   Abandonment of the application if the non-compliant amendment is a non-final amendment or an amendment filed in response to a *Quayle* action; or
   Non-entry of the amendment if the non-compliant amendment is a preliminary amendment or supplemental amendment.

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

Continuation of 4(e) Other: The claims are misnumbered. There are TWO claims 21 (page 5). The claims are required to be renumbered accordingly.

AFCP 2.0 Decision

Application No.	Applicant(s)	
14/228,061	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 10 April 2020.

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.

DO NOT ENTER: /HDM/ 06/08/2020

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT:	Dryshield, LLC
INVENTOR(S):	Thien Nguyen, et al.
APPLICATION NO.:	14/228,061
FILED:	March 27, 2014
TITLE:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
EXAMINER:	Hao D. Mai
ART UNIT:	3772
CONF. NO.:	6191
ATTY.DKT.NO.:	INCEP-001COE

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RESPONSE K

Examiner Mai:

In response to the office action mailed January 10, 2020 (*Office Action*), the Applicant provides the following **amendments to the claims**, beginning on page **two**. The **remarks** and **conclusion** begin on pages **six** and **twelve**, respectively.

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 14/228,061	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	06/26/2020	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))	* 1	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	SLIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/KIMBERLY R WHITE/
*** 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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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
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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	14/228,061	Filing Date	2014-03-27	Docket Number (if applicable)	INCEP-001COE	Art Unit	3772
First Named Inventor	Thien Nguyen			Examiner Name	Hao D. Mai		

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

SUBMISSION REQUIRED UNDER 37 CFR 1.114

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

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

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

☒ Enclosed

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

MISCELLANEOUS

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

☐ Other _____

FEES

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

☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 501662

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (02-18)
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Signature of Registered U.S. Patent Practitioner			
Signature	/Ruby Chung/	Date (YYYY-MM-DD)	2020-06-26
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.

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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

APPLICANT:	Dryshield, LLC
INVENTOR(S):	Thien Nguyen, et al.
APPLICATION NO.:	14/228,061
FILED:	March 27, 2014
TITLE:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
EXAMINER:	Hao D. Mai
ART UNIT:	3772
CONF. NO.:	6191
ATTY.DKT.NO.:	INCEP-001COE

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P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

RESPONSE K

Examiner Mai:

In response to the office action mailed January 10, 2020 (*Office Action*), the Applicant provides the following **amendments to the claims**, beginning on page **two**. **Applicant's summary of examiner interview** begins on **page six**. The **remarks** and **conclusion** begin on pages **seven** and **fourteen**, respectively.

IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (cancelled)

2. (cancelled)

3. (previously presented) The mouthpiece of claim 21, wherein the strap portion is injection-molded in a single piece with the bite block portion.

4. (previously presented) The mouthpiece of claim 21, the strap portion is elastic.

5. (currently amended) The mouthpiece of claim 21, wherein an external surface of the suction connector ~~portion~~ comprises a notch region corresponding to the strap portion, the notch region separating the external surface into a first surface and a second surface and defining an interior surface coupled to the first surface by a first side wall and coupled to the second surface by a second side wall.

6. (currently amended) The mouthpiece of claim 21, wherein the suction connector ~~portion~~ further comprises an external plug protrusion corresponding to an opening in the bite block portion.

7. (original) The mouthpiece of claim 6, wherein the plug protrusion fits into the opening of the bite block portion to provide additional crush-resistance and decreased compressibility during biting by a patient.

8. (currently amended) The mouthpiece of claim 21, wherein the suction connector ~~portion~~ comprises a cutout corresponding to a protrusion on a vacuum adapter for an interlocking fit.

9. (currently amended) The mouthpiece of claim 21, wherein the suction connector ~~portion~~ connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source provides suction of fluids from the interior of the pocket toward the vacuum source.

10. (previously presented) The mouthpiece of claim 21, wherein the anterior wall, the posterior wall, and/or the side wall comprise a plurality of perforations.

11. (original) The mouthpiece of claim 10, wherein activation of a vacuum source associated with the main body draws fluids from an exterior of the main body through the perforations into the interior of the pocket of the main body.

12. (previously presented) The mouthpiece of claim 21, further comprising a cheek retractor portion connected to the main body portion and having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

13. (cancelled)

14. (cancelled)

15. (previously presented) The mouthpiece of claim 21, further comprising a bridge structure that defines a wave shape, and wherein the bridge structure comprises spaced protrusions at crests of the wave shape.

16. (previously presented) The mouthpiece of claim 15, wherein spaces between the spaced protrusions are at troughs of the wave shape.

17. (previously presented) The mouthpiece of claim 21, 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.

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

19. (previously presented) The mouthpiece of claim 21, wherein a material that forms the main body is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

20. (previously presented) The mouthpiece of claim 21, wherein the mouth prop is interchangeable with a second mouth prop that is attachably and detachably associated with the main body portion, the second mouth prop being of a different size.

21. (currently amended) A mouthpiece comprising:

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

an anterior wall,

a posterior wall; and

a side wall connecting the anterior wall to the posterior wall;

a suction connector extending from a base of the main body portion and integral to the main body portion, the suction connector including a cavity extending from a longitude of the pocket of the main body portion having a first opening of the suction connector at the base of the main body portion and through a length of the suction connector towards a suction port opening directly opposite from the main body portion, wherein a cross section of the first opening of the suction connector is parallel to a cross section of the suction port opening; and

a mouth prop comprising a bite block portion and a strap portion, wherein the mouth prop is injection molded in one piece, wherein the strap portion corresponds to a circumference of the suction connector, wherein a cross section of an opening of the strap portion is parallel to the cross section of the first opening of the suction connector and parallel to the cross section of the suction port opening, wherein a first edge and a second edge of an external surface of the strap portion are adjacent to an external surface of the suction connector ~~portion~~, and wherein the first edge is opposite the second edge, wherein the suction connector ~~portion~~ extends through and past ~~an opening of~~ the strap portion.

22. (previously presented) The mouthpiece of claim 5, wherein the strap portion sits in the notch region when attached around the circumference of the suction connection portion and the strap portion has a thickness corresponding to a height of the first side wall and the second side wall so that the strap portion is flush with both the first surface and the second surface.

23. (previously presented) The mouthpiece of claim 22, wherein an interior surface of the strap portion is adjacent to the interior notch region interior surface.

APPLICANT'S SUMMARY OF EXAMINER INTERVIEW

The Applicant's representative spoke with the Examiner on May 28, 2020 ("*Examiner Interview*") regarding the 35 U.S.C. 102 and 103 rejections of the *Office Action*.

During the Examiner Interview, the Applicant's representative noted that the 102 and 103 reference, *Black*, fails to disclose 'the suction connector extend[ing] through and past the strap portion' because *Black* only discloses the suction connector portion that does not extend through and past "bite member 10". *Black*, at [0102]. Further, *Black* fails to disclose the cross section of the opening of the strap portion being parallel to the cross section of the two openings of the suction connector, resulting maintaining the same fluid direction into the suction connector and out of the suction connector. The Examiner agreed with the Applicant that the *Black* reference did not disclose either of these distinctions and suggested adding the terms "cross section" and "suction port" to the independent claim.

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 5, 6, 8, 9, and 21 have been currently amended. Support for the amended independent claim 21 can be found in at least paragraphs [0041], [0044], and FIG. 1A, 1B, 1E, 2A, 2E, 3A-3F of the *Specification*. Claims 5, 6, 8, and 9 have been currently amended to address antecedent basis issue. The claims reflect subject matter to which the Applicant believes it is entitled to claim. As such, no new matter has been added.

Double Patenting

Claims 3-12 and 15-23 are rejected on the ground of nonstatutory double patenting over claims 18-35 of U.S. Patent No. 8,911,232 in view of *Black* et al. (2009/0274991). *Office Action*, at 3. The Applicant has amended the independent claim of the present application and contends that the present rejection of record may no longer be appropriate in light of the amendment. Should the Examiner wish to maintain the double patenting rejection and otherwise find the application in condition for allowance, the Examiner is respectfully requested to contact the undersigned to discuss subsequent submission of a disclaimer if appropriate.

Rejections under 35 U.S.C. § 112

Claims 3-12 and 15-23 are rejected under 35 U.S.C. § 112(b) as being indefinite for failing to particularly point out and distinctly claim the subject matter. *Office Action*, at 4. Claims 5, 6, 8, 9, and 21 has been amended by deleting 'portion' from the suction connector portion to recite 'the suction connector' which solves the antecedent basis issue in claims 3-12 and 15-23 in regards to 'the suction connector.' Withdrawal of the rejection and allowance of claims 3-12 and 15-23 are respectfully requested.

Rejections under 35 U.S.C. § 102 and § 103

Claims 3, 6-7, 9-11, 17-18 and 20 are rejected under 35 U.S.C. § 102 as being anticipated by *Black* (US Patent Publication 2009/0274991). *Office Action*, at 4. Claims 4-5 and 22-23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Black* in view of *Schubert* (U.S. Patent 4,167,814), and further in view of *Langhans* (U.S. Patent 2,019,612). *Id.* at 7. Claim 19 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Black* in view of *Sclafani* (U.S. Patent 5,890,899). *Id.* at 8. Claims 12 and 15-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Black* in view of *Hirsch* (U.S. Patent Publication 2003/0134253). *Id.* at 8-9. The Applicant respectfully disagrees and presents the following remarks.

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

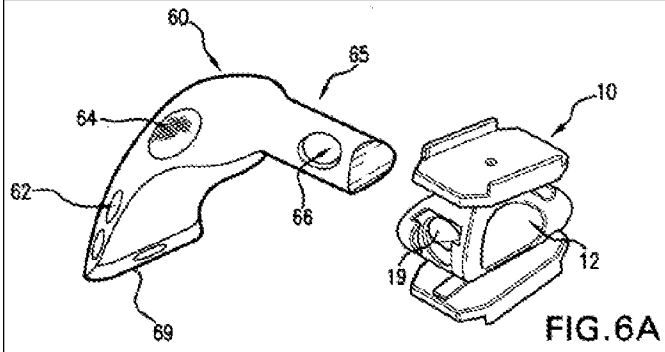
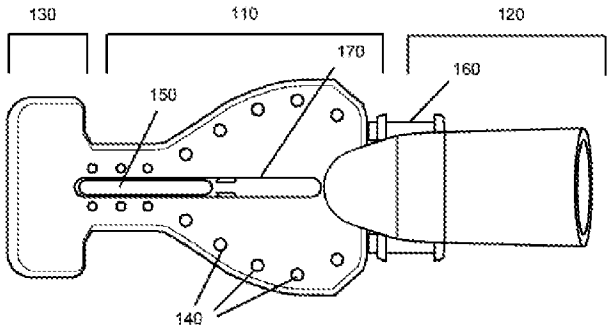
- a suction connector extending from a base of the main body portion and integral to the main body portion, the suction connector including a cavity extending from a **longitude of the pocket of the main body portion** having **a first opening of the suction connector at the base of the main body portion** and through a length of the suction connector towards **a suction port opening directly opposite from the main body portion,** wherein **a cross section of the first opening of the suction connector is parallel to a cross section of the suction port opening;**

The recited limitations find support in the *Specification*, which describes the suction connector portion 120 being "oval-shaped" "attached to the main body portion" and "configured to attach to a high-suction vacuum adapter and assist in transferring water, saliva, and debris from the oral cavity to the external adapter for removal." *Specification*, at [0041]. Such limitations pertain to a suction connector having one opening at 'a suction port of the main body' portion and having the other "oval-shaped" opening to the "high suction vacuum adapter" directly opposite from the main body, creating a cavity that is 'longitude of the pocket of the main body portion and through the length of the suction connector.' *Id.* at [0041], FIG. 1B.

Moreover, the cross section of such 'suction port' towards the suction connector portion of the main body is parallel to the cross section of the 'opening of the strap portion,' which is also

parallel to the cross section of the 'opening of the suction connector' which connects to the "high-suction vacuum adapter." *Id.* at [0041], FIGS 1A, 1E, 2E, 3D.

In contrast, the "neck" of *Black*, Element 65 as seen below, does not have a suction port opening 'directly opposite from the main body' through the 'longitude of the pocket of the main body portion' where 'a cross section of the first opening of the suction connector is parallel to a cross section of the suction port opening.' *Black,* [0096], FIG. 6A. Instead, the element 66 is "a transverse anterior opening" that opens middle of the "neck." *Id.*

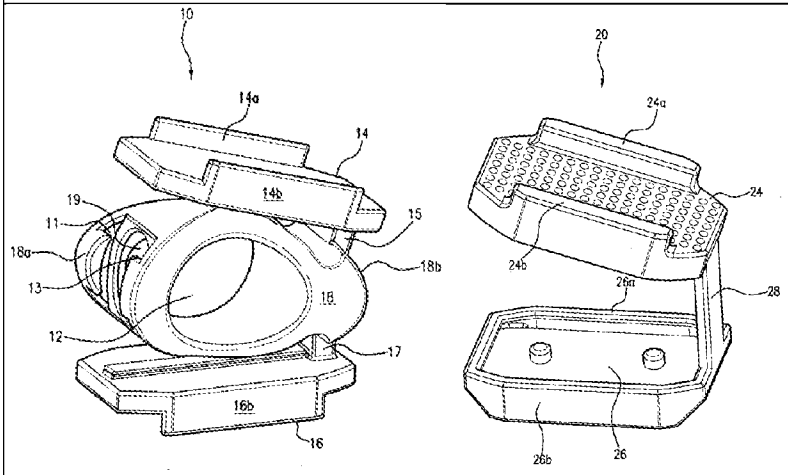
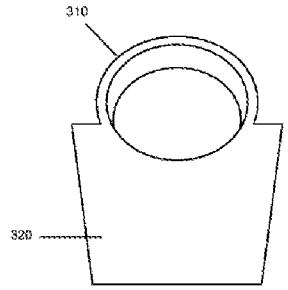
BLACK	APPLICANT
 FIG.6A	 FIG. 1B

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

- a mouth prop comprising a bite block portion and a strap portion, wherein **the mouth prop is injection molded in one piece**

The recited limitations find support in the *Specification*, which describes the mouth prop 160 "made of thickened silicone material injection molded in a single piece with an elastic strap" and can be used "to prop open a patient's mouth and teeth" without a need for a separate grip. *Specification* at [0044], FIG. 3A-3F.

In contrast, *Black* discloses a bite block portion consisting of multiple parts that are not injection molded in a single piece. The "bite member 10" of *Black* has "an upper member 14 and a lower member 16" that are "connected to an intermediate member 18 via respective connection sections 15, 17, proximate a posterior end 18b of the intermediate member 18." *Black* at [0102], FIG. 8. The bite grip 20 of *Black* "cushions the patient's teeth from the bite member" and has "an upper member 24 and a lower member 26 that are joined to one another by a vertical spine 28." *Id.* at [0103], FIG 9. Not only are the bite member 10 and bite grip 20 clearly separate parts, but also the bite member 10 and bite grip 20 each are non-continuous, further consisting of multiple components as seen below.

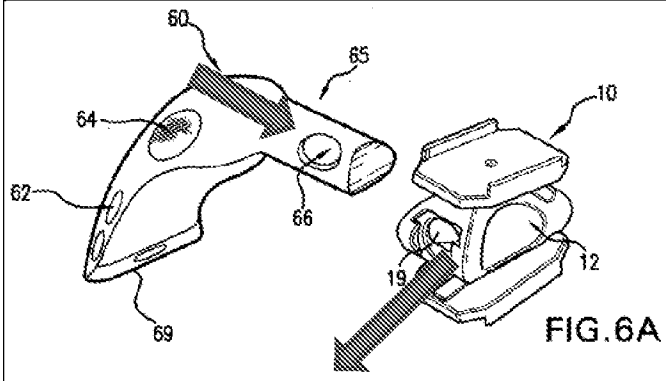
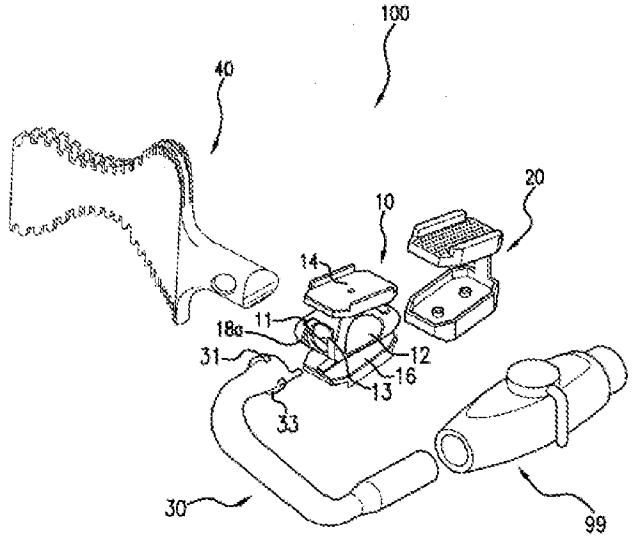
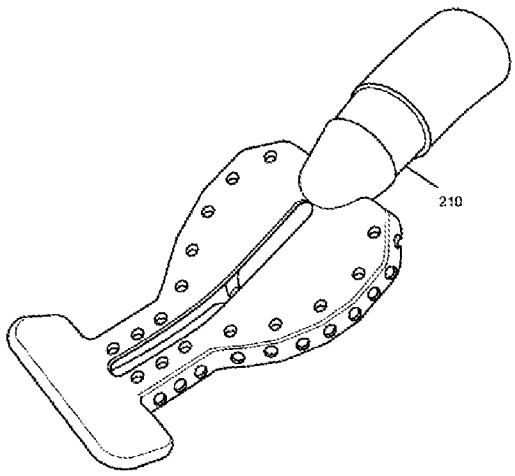
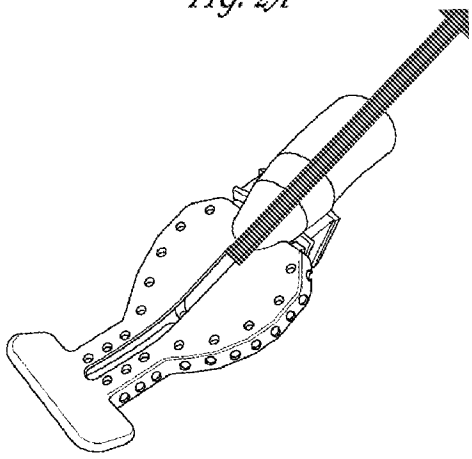
BLACK	APPLICANT
 FIG.8 FIG.9	 FIG. 3A

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

- the strap portion corresponds to a circumference of the suction connector, wherein **a cross section of an opening of the strap portion is parallel to the cross section of the first opening of the suction connector and parallel to the cross section of the suction port opening,** wherein a first edge and a second edge of an external surface of the strap portion are adjacent to an external surface of the suction connector, and wherein the first edge is opposite the second edge, wherein the suction connector extends **through and past the strap portion.**

The recited limitations find support in the *Specification*, which describes the mouth prop 160 having a strap portion "corresponding to the circumference of the suction connector portion" which rests in the "notched region 210" of the suction connector portion such that "when the strap is in place, the external walls of the strap and the rest of the connector portion may be flush." *Specification* at [0041], [0044], FIGS. 1B, 2A. As seen from FIG 1B and 2A, the cross section of the opening of the strap portion is 'parallel to the cross section of the first opening of the suction connector and parallel to the cross section of the suction port opening' such that the strap portion does not interrupt the suction connector "transferring water, saliva, and debris from the oral cavity to the external adapter for removal." *Id.*

The Office Action argues that "lateral orifice 12" of *Black* discloses 'a strap portion.' *Office Action* at 5 ("*Black et al*. further discloses […] a strap portion 12 corresponding to and configured to removably attach around a circumference of the suction connector 65"). However, the "lateral orifice 12" of *Black* accommodates the end of "tongue shield aspirators" as the tongue shield aspirators protrudes out of the bite member and thus is not analogous to the strap portion of the mouth prop. *Black* at [0102], FIG. 2. Element 19 of FIG. 6A (or element 18a in FIG. 2) is "an anterior opening" for "accommodating an end of an evacuation tube 30" which is actually analogous to the strap portion and dictates the direction of the "air, fluid, or debris" as "it travels through the longitudinal hallow lumen and into the evacuation tube." *Id.* at [0102], [0106], FIG. 2, 6A. As seen in FIG. 2 and 6A of Black, the direction of fluid is changed by 90 degrees as the fluid travels from the "neck 65" through "transverse anterior opening 66" and out of "anterior opening 19" and into "evacuation tube 30." *Id.* at [0096], [0102], [0106], FIG. 2, 6A.

BLACK	APPLICANT
 FIG.6A  FIG.2	 FIG. 2A  FIG. 1A

Moreover, *Black* fails to disclose 'the suction connector extend[ing] through and past the strap portion' because *Black* only discloses "neck 65" that does not extend through and past "bite member 10" as seen in FIG. 6A. *Black* at [0096], [0102], FIG. 6A. In contrast, the suction connector 120 'extends through and past' "the removable strap 310" situated at the "notched region 210" along the length of the suction connector. *Specification* at [0042], [0043].

Thus, Applicant respectfully submits that *Black* fails to teach each and every limitation of the independent claims and requests that the rejections under 35 U.S.C. § 102 be withdrawn.

Schubert and *Langhans* cited by the *Office Action* only apply to dependent claims 4-5 and 22-23 and cannot cure the deficiencies of *Black* with regards to the independent claim 21. *Office Action* at 7. Similarly, *Sclafani* cited by the *Office Action* only applies to dependent claim 19 and cannot cure the deficiencies of *Black* with regards to the independent claim 21. *Id.* at 8. Likewise, *Hirsch* cited by the *Office Action* only applies to dependent claims 12 and 15-16 and cannot cure the deficiencies of *Black* with regards to the independent claim 21. *Id.* at 8-9.

In view of the above, Applicant respectfully requests that the rejections 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.

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 26, 2020

By: / Ruby Chung /

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San Francisco, CA 94111
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Electronic Patent Application Fee Transmittal

Application Number:	14228061
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Ruby Lim Chung/Cheri Houle
Attorney Docket Number:	INCEP-001COE

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:	39838101
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	26-JUN-2020
Filing Date:	27-MAR-2014
Time Stamp:	16:21:23
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	E20206PG21520921
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	Request for extension under COVID-19	INCEP-001COE_COVID_STMT_6-26-20.pdf	105013 de33e311c33859d6e3d6ce6176b54ad879868ab1	no	2
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	INCEP-001COE_RCE_6-26-20.pdf	82748 34812c87f851445c2a6044ca487827ae08a388b1	no	3
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
3		INCEP-001COE_RESP_K_6-26-20.pdf	442612 4764ef5544060c259541df2d32c00fde879de8b9	yes	14

Multipart Description/PDF files in .zip description

Document Description	Start	End
Amendment Submitted/Entered with Filing of CPA/RCE	1	1
Claims	2	5
Applicant summary of interview with examiner	6	6
Applicant Arguments/Remarks Made in an Amendment	7	14

Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	30514 05986bf929db29ea3a4e86421dca480ca7419e36	no	2
Warnings:					
Information:					
			Total File Size (in bytes):	660887	

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: 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.	14/228,061	Filing Date or Issue Date	03/27/2014
Title of Invention	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP		

This statement accompanies a filing or payment that was delayed due to the COVID-19 outbreak.

A practitioner, applicant, patent owner, petitioner, third-party requester, inventor, or other person associated with the filing or fee was personally affected by the COVID-19 outbreak, including, without limitation, through office closures, cash flow interruptions, inaccessibility of files or other materials, travel delays, personal or family illness, or similar circumstances, such that the outbreak materially interfered with timely filing or payment.

Signature	/Ruby Chung/	Date	June 26, 2020
Name (Print or Type)	Ruby Chung	Practitioner Registration Number	76809

Note: *This form must be signed in accordance with 37 CFR 1.33. Please see 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required and indicate below the total number of forms submitted.**

☐ *Total of _____ forms are submitted.

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 United States Patent and Trademark Office (USPTO or Agency) is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the USPTO 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 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.

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 that became abandoned or in which the proceedings were terminated and that 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.

Substitute for Form 1449/PTO	*Complete if Known*	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,061
	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-001COE

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.

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:	40308313
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	18-AUG-2020
Filing Date:	27-MAR-2014
Time Stamp:	18:15:56
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-001COE_IDS_Statement_8-18-20.pdf	96957 e9b1146f7fc680ebec6e52781d95d697d4000152	no	2

Warnings:

Information:					
2	Transmittal Letter	INCEP-001COE_List_of_Copending_Apps_8-18-20.pdf	100627 ccd7bc9f9526da149d3fbbfc2eca9f2012958971	no	1
Warnings:					
Information:					
3	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COE_IDS_1449_8-18-20.pdf	185867 e4474da5495b29f0b79a6a23894f7b4b5e43cc73	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
			Total Files Size (in bytes):	383451	

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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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.: 14/228,061 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191 Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

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: August 18, 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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772

Examiner: Hao D. Mai

Serial No.: 14/228,061

Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191

Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

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
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	14/228,061
				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-001COE

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-				
		US-				
		US-				
		US-				
		US-				
		US-				
		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	14/228,061
	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-001COE

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		PCT Application No. PCT/US2014/032892 International Preliminary Report on Patentability dated 6/14/6	
		PCT Application No. PCT/US2020/032228 International Search Report and Written Opinion dated 8/12/20	

Examiner Signature		Date Considered	

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

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

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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

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

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:	41076378
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	10-NOV-2020
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Application Type:	Utility under 35 USC 111(a)

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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-001COE_IDS_Statement_11-10-20.pdf	96974 f73f6a2e71d0fc6131c49a3aa75e3650fdcd7b42	no	2

Warnings:

Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COE_IDS_1449_11-10-20.pdf	223579 802dc3449a3fb4edbd403111d2b62fb41cc9fb7b	no	2
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Non Patent Literature	PCTUS2014032892_InternationalPreliminaryReportOnPatentability_6-14-16.pdf	334202 7b192fb9ea41dea74c303a365c828775974a5c96	no	6
Warnings:					
Information:					
4	Non Patent Literature	PCTUS2020032228_SearchReport_and_WrittenOpinion_8-12-20.pdf	214171 deb3ae7e4c08b757cb43ee6a74d841aba69b704c	no	8
Warnings:					
Information:					
		Total Files Size (in bytes):	868926		

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.: 14/228,061 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191 Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

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: November 10, 2020

By: _____/Ruby L. Chung/_____
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,061	03/27/2014	Thien Nguyen	INCEP-001COE	6191

138718 7590 11/27/2020

Polsinelli LLP
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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. 14/228,061	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 06/26/2020.

☐ 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) 3-12 and 15-23 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) 3-12 and 15-23 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 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 06/26/2020 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 6-7** 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 6-7 recite “an opening in the bite block”. It is unclear whether such opening is the same or different from “an opening of the strap portion” in base claim 21.

Claim Rejections - 35 USC § 103

5. 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.

6. **Claims 3-4, 21 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirsch et al. (2003/0134253) in view of Schubert (4,167,814),**

Regarding claim 21, Hirsch et al. discloses a mouthpiece 122 (Fig. 12) comprising: a main body portion 122 configured as a pocket having an interior (hollow interior) defined by an anterior wall, a posterior wall, and a side wall connecting the anterior wall to the posterior wall (Fig. 12). Hirsch et al. further shows the mouthpiece comprising a suction connector 138 extending from a base 136 of and integral with the main body 122 (Fig. 12). The suction connector 138 includes a cavity 144 (Fig. 14) extending from a longitude of the pocket of the main body portion having a first opening of the suction connector at the base of the main body portion (open into the pocket at area toward 136) and through a length 138 of the suction connector 138 towards a suction port opening (at 144) directly opposite from the main body portion (Figs. 12, 14). The cross section of the first opening (at area toward 136) of the suction connector 138 is parallel to a cross section of the suction port opening (at area 142/144).

Hirsch fails to disclose the mouth prop as claimed. **Schubert** discloses a mouth piece 10 and a mouth block 30/32 connected thereo; the mouth block 30-32 comprising an elastic/resilient strap portion 32 and a bite block portion 30 molded into one piece (Fig. 1; column 2 lines 36-46). The strap portion 32 corresponds to a circumference of the suction connector 17/18 of, wherein a cross section of an opening of the stracp portion is parallel to the cross section of the first opening and suction portion opening of the suction connector 17/18. A

first edge/side and a second edge/side of an external surface of the strap portion 32 are adjacent to an external surface of the suction connector 17/18, and wherein the first edge/side is opposite the second edge/side, wherein the suction connector 17/18 extends through and past the strap portion 32 (Figs. 1-3). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to substitute Hirsch's mouth prop with incorporate into Hirsch the mouth prop as taught by Shubert with the bite block and strap as a suitable alternative bite block and connection thereof with reasonable expectation of success.

As to claim 3, the incorporated Schubert's mouth prop has the strap portion being a single piece with the bite block portion (Figs. 2-3). 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, Shubert discloses the end product, i.e. the strap portion 32 and the bite block portion 30, 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 Shubert's device and the invention that would have resulted from the injection molding process.

As to claim 4, the incorporated Schubert discloses a mouth piece 10 and a mouth block 30/32 connected thereo; the mouth block 30-32 comprising an elastic/resilient strap portion 32 and a bite block portion 30 (Fig. 1; column 2 lines 36-46).

As to claims 6-7, Hirsch shows the suction connector 138 comprises an external plug protrusion 138 (Figs. 12,14). Likewise, Schubert shows the suction connector 17/18 comprises an external plug protrusion 18 corresponding to an opening (of strap 32) in the bite block portion 30/32 providing additional crush-resistance and decreased compressibility during biting by a

patient. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Hirsch by incorporate Shubert's bite prop with the connection of the plug protrusion fits into the opening of the bite block portion as a suitable alternative connection of such mouth prop and mouthpiece.

As to claim 8, Hirsch shows the vacuum adapter 140 having a cutout corresponding to a protrusion 142 on the suction connector for an interlocking fit (Fig. 12). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Hirsch to have the suction connector having a cutout interlocking with a protrusion on the vacuum adapter since it has been held such modification is mere reversal of parts well within the skill of an artisan with reasonable expectation of success.

As to claim 9, Hirsch shows the suction connector 138 connects the interior of the pocket to a vacuum source 140, wherein activation of the vacuum source provides suction of fluids from the interior of the pocket toward the vacuum source (Fig. 12). As to claims 10-11, the anterior wall, posterior wall, and/or side wall comprise a plurality of perforations 60b, wherein activation of a vacuum source associated with the main body draws fluids from an exterior of the main body through the perforations into the interior of the pocket of the main body 122 (Fig. 12). As to claim 12, note the cheek retractor portion 52b. As to claim 15-16, Hirsch et al. discloses the a bridge structure 136 having a wave shape defined by spaced protrusions at crests and troughs of the wave shape (Fig. 12). As to claim 17, note the stability bar 134 extending from the posterior wall (Fig. 12).

As to claim 18, the claim language "by injection-molded" is a product-by-process recitation in a product claim. Even though product-by-process recitation is limited by and defined by the recited process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe,* 777

F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). In this case, Hirsch shows the main body 122 being one piece as claimed (Fig. 12. The burden is shifted to applicant to show an unobvious difference between Hirsch' device and the invention that would have resulted from the injection molding process.

As to claim 19, Hirsch discloses the device is formed of a flexible, translucent, high heat-resistant, autoclavable silicone-based material of Pebax (paragraph 49). As to claim 20, the incorporated Shubert's mouth prop is detachable and therefore is interchangeable with another/second mouth prop. Note that the second mouth prop is not actively claimed and therefore is not given patentable weight.

7. **Claims 5 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirsch et al. in view of Schubert, as applied to claim 21 as detailed above, and further in view of Langhans (2,019,612).**

As to claims 5 and 22-23, Hirsch/Schubert, particularly Schubert fails to disclose the suction connector portion 1718 comprising a notch region corresponding to the strap portion 32. **Langhans** discloses a connection between a strap 34 and a cylindrical-shape connector 24, wherein an external surface of the cylindrical-shape connector portion 24 comprises a notch region (best pointed to by reference numeral 22 in Fig. 2); the notch region separating the external surface into a first surface and a second surface and defining an interior surface (base surface of notch) couple to the first surface by a first side wall (side surface of notch) and coupled to the second surface by a second side wall (other side surface of notch). As to claims 22-23, **Langhans** shows the strap portion 34 sits in the notch region when attached around the circumference of the cylindrical connection portion 24, and the strap portion 34 has a thickness corresponding to a height of the first side wall and the second side wall so that the strap potion 34 is flush with both the first surface and the second surface of cylindrical connection portion 24,

and the strap portion 34 is adjacent to the interior notch region interior surface (Figs. 1-3; page 2 first column lines 31-35). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Hirsch/Schubert by substituting Schubert's snap-on connection between the strap and the cylindrical shape connector with Langhans' notch-strap connection between the strap and the cylindrical shaped connector in order to obtain a smooth flushing exterior surface at the connection area as taught by Langhans.

Double Patenting

8. 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.

9. **Claims 3-12 and 15-23, are rejected on the ground of nonstatutory double patenting over claims 18-35 of U.S. Patent No. 8,911,232 in view of the ground(s) of rejection of Hirsch and Shubert as detailed above.**

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 claim 21 essentially claims the subject matter of the patent claim 18. The difference between the application claims and the patent claims lies in the fact that application claim 21 newly recites " wherein a first edge and a second edge of an external surface of the strap portion are adjacent to an external surface of the suction connector portion…", which is not recited the patent claim. However, Hirsch et al. in view of Shubert discloses such newly recited limitations as detailed in the above ground(s) of rejection. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the patent claims to include the features of the mouth prop and its connection thereto the mouth piece as disclosed by Hirsch et al. and Shubert, deeming the same or suitable alternative connection mechanism to the patent claims.

Response to Arguments

10. Applicant's arguments regarding the amendment made to the claims have been fully considered but are moot in view of the new ground(s) of rejection under Hirsch, Shubert, and Langhans as detailed above.

Regarding the newly recited recitation(s), Hirsch et al. shows the mouthpiece comprising a suction connector 138 extending from a base 136 of and integral with the main body 122 (Fig. 12). The suction connector 138 includes a cavity 144 (Fig. 14) extending from a longitude of the pocket of the main body portion having a first opening of the suction connector at the base of the main body portion (open into the pocket at area toward 136) and through a length 138 of the suction connector 138 towards a suction port opening (at 144) directly opposite from the main

body portion (Figs. 12, 14). The cross section of the first opening (at area toward 136) of the suction connector 138 is parallel to a cross section of the suction port opening (at area 142/144).

Hirsch fails to disclose the mouth prop as claimed. **Schubert** discloses a mouth piece 10 and a mouth block 30/32 connected thereo; the mouth block 30-32 comprising an elastic/resilient strap portion 32 and a bite block portion 30 molded into one piece (Fig. 1; column 2 lines 36-46). The strap portion 32 corresponds to a circumference of the suction connector 17/18 of, wherein a cross section of an opening of the stracp portion is parallel to the cross section of the first opening and suction portion opening of the suction connector 17/18. A first edge/side and a second edge/side of an external surface of the strap portion 32 are adjacent to an external surface of the suction connector 17/18, and wherein the first edge/side is opposite the second edge/side, wherein the suction connector 17/18 extends through and past the strap portion 32 (Figs. 1-3). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to substitute Hirsch's mouth prop with incorporate into Hirsch the mouth prop as taught by Shubert with the bite block and strap as a suitable alternative bite block and connection thereof with reasonable expectation of success.

Conclusion

11. 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
	14/228,061	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	07/08/2019	07/08/2019	07/08/2019	07/08/2019	07/08/2019	07/08/2019	01/06/2020	11/21/2020	
	1	✓	✓	✓	-	-	-	-	-	
	2	✓	✓	✓	-	-	-	-	-	
	3	✓	✓	✓	✓	✓	✓	✓	✓	
	4	✓	✓	✓	✓	✓	✓	✓	✓	
	5	✓	✓	O	✓	✓	✓	✓	✓	
	6	✓	✓	✓	✓	✓	✓	✓	✓	
	7	✓	✓	✓	✓	✓	✓	✓	✓	
	8	✓	✓	✓	✓	✓	✓	✓	✓	
	9	✓	✓	✓	✓	✓	✓	✓	✓	
	10	✓	✓	✓	✓	✓	✓	✓	✓	
	11	✓	✓	✓	✓	✓	✓	✓	✓	
	12	✓	✓	✓	✓	✓	✓	✓	✓	
	13	✓	✓	-	-	-	-	-	-	
	14	✓	✓	-	-	-	-	-	-	
	15	✓	✓	O	✓	✓	✓	✓	✓	
	16	✓	✓	O	✓	✓	✓	✓	✓	
	17	✓	✓	✓	✓	✓	✓	✓	✓	
	18	✓	✓	✓	✓	✓	✓	✓	✓	
	19	✓	✓	✓	✓	✓	✓	✓	✓	
	20	✓	✓	✓	✓	✓	✓	✓	✓	
	21				✓	✓	✓	✓	✓	
	22						✓	✓	✓	
	23						✓	✓	✓	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,061	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043, 046	11/16/2015	HDM
A61C 17/04, 0208	06/20/2016	HDM
Update Search	06/20/2016	HDM
Update Search	07/08/2019	HDM
Update Search	01/06/2020	HDM

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

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

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

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,061	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor Search	11/16/2015	HDM
Review searches of parent case 14/100323	11/16/2015	HDM
Update Search	06/20/2016	HDM
Update Search	02/20/2017	HDM
Update Search	10/16/2017	HDM
Update Search	09/30/2018	HDM
Update Search	07/08/2019	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**

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	14/228,061
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COE

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

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

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

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,061
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COE

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-				
		US-				
		US-				
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		US-				
		US-				
		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	/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.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SENT FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

Substitute for Form 1449/PTO	Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT *(use as many sheets as necessary)*	Application Number	14/228,061
	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-001COE

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T[2]
		PCT Application No. PCT/US2014/032892 International Preliminary Report on Patentability dated 6/14/6	
		PCT Application No. PCT/US2020/032228 International Search Report and Written Opinion dated 8/12/20	

Examiner Signature	/Hao D Mai/	Date Considered	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). '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.

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
L1	14	A61C17/04,0208,043.cpc. and ((resilient) same flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2020/11/21 20:58
L2	67	A61C17/04,0208,043.cpc. and (clip or strap)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2020/11/21 20:58
S156	1	A61C17/04,0208,043.cpc. and ((snap) same flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2020/01/06 05:33
S157	9	A61C17/04,0208,043.cpc. and ((strap or bore) with flush$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	ADJ	ON	2020/01/06 05:33
S158	75	"433".clas. and (flush$3 with (groove or recess or notch)) and (handle or handpiece)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2020/01/06 05:39
S159	6	A61C17/04,0208,043.cpc. and (flush$3 with (groove or recess or notch)) and (handle or handpiece)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2020/01/06 05:39
S160	5	(("20090274991") or ("4167814") or ("2019612") or ("5890899") or ("20030134253")).PN.	US-PGPUB; USPAT	OR	OFF	2020/11/21 19:09
S164	2	(("20060063129") or ("1731322")).PN.	US-PGPUB; USPAT	OR	OFF	2020/11/21 19:41
S165	3	(("6213772") or ("3090122") or ("3768477")).PN.	US-PGPUB; USPAT	OR	OFF	2020/11/21 19:42

EAST Search History (Interference)

<This search history is empty>

11/21/2020 8:58:51 PM
C:\Users\hmai1\Documents\EAST\Workspaces\14228061.wsp

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.
14/228,061	03/27/2014	Thien Nguyen	INCEP-001COE	6191

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.** 14/228,061	**Applicant(s)** Nguyen et al.		
	Examiner HAO D MAI	**Art Unit** 3772	**AIA (First Inventor to File) Status** No	**Page** 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	**Title**	**Type**
HAO D MAI	Examiner	Telephonic
Ruby Chung	Attorney	
Tam Pham	Inventor	

Date of Interview: 11 January 2021

Issues Discussed:

Proposed Amendment(s)

Proposed amendments to recite "a bridge structure that includes a plurality of protrusions integral with and protruding from an interior surface of 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 Hirsch in view of Schubert.

/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 14/228,061	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	01/22/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 2	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".	/ERNEST A MARFO/
*** 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:	Dryshield, LLC
INVENTOR(S):	Thien Nguyen, et al.
APPLICATION NO.:	14/228,061
FILED:	March 27, 2014
TITLE:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
EXAMINER:	Hao D. Mai
ART UNIT:	3772
CONF. NO.:	6191
ATTY.DKT.NO.:	INCEP-001COE

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

RESPONSE L

Examiner Mai:

In response to the *Office Action* mailed November 27, 2020 (*Office Action*), the Applicant provides the following **amendments to the claims**, beginning on page **two**. **Applicant's summary of examiner interview** begins on **page six**. The **remarks** and **conclusion** begin on pages **seven** and **twelve**, respectively.

Electronic Acknowledgement Receipt

EFS ID:	41724002
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	22-JAN-2021
Filing Date:	27-MAR-2014
Time Stamp:	18:58:13
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		INCEP-001COE_RESP_L_1-22-21.pdf	414826 140331a173c9532d1ef0091bf94b9111c60de719	yes	12

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Applicant Arguments/Remarks Made in an Amendment	8	12
	Applicant summary of interview with examiner	7	7
	Claims	2	6
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Warnings:			
Information:			
	Total Files Size (in bytes):	414826	

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

Amendments to the Claims

Claims 3-12 and 15-23 are currently pending. Claims 3-7, 10, 15, 17, and 21-23 have been currently amended. New claim 24 is newly added. Support for the amended and new claims can be found in at least paragraph [0040] and FIGs. 1E and 5 of the *Specification*. The amended claims reflect subject matter to which the Applicant believes it is entitled to claim. As such, no new matter has been added.

Double Patenting

Claims 3-12 and 15-23 are rejected on the ground of nonstatutory double patenting over claims 18-35 of U.S. Patent No. 8,911,232 in view of *Hirsch* and *Shubert*. *Office Action*, 8. The Applicant has amended the independent claim of the present application and contends that the present rejection of record may no longer be appropriate in light of the amendment. Should the Examiner wish to maintain the double patenting rejection and otherwise find the application in condition for allowance, the Examiner is respectfully requested to contact the undersigned to discuss subsequent submission of a disclaimer if appropriate.

Rejections under 35 U.S.C. § 112

Claims 6-7 are rejected under 35 U.S.C. § 112(b) as being indefinite for failing to particularly point out and distinctly claim the subject matter. *Id.* at 2. Claims 6 and 7 have been amended to recite 'an opening through the bite block portion' which is different from 'an opening of the strap portion.' Withdrawal of the rejections under 35 U.S.C. § 112(b) is respectfully requested.

Rejections under 35 U.S.C. § 103

Claims 3-4, 21, and 22-23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hirsch* (U.S. Patent Publication 2003/0134253) in view of *Schubert* (U.S. Patent 4,167,814). *Id.* at 3. Claims 5 and 22-23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Hirsch* in view of *Schubert,* and further in view of *Langhans* (U.S. Patent 2,019,612). *Id.* at 6. The Applicant respectfully disagrees and presents the following remarks.

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

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

The recited limitations find support in the *Specification*, which describes "a bridge structure 180 on an interior surface" that includes a "wave-like protrusion that generally corresponds to the distance between the anterior and posterior walls extending substantially (within 1 mm) the full distance at its crest and substantially flush to the surface at its trough." *Specification* at [0040]. In addition, FIGs. 1E and 5 (provided below) illustrate views of such a 'bridge structure' as follows:

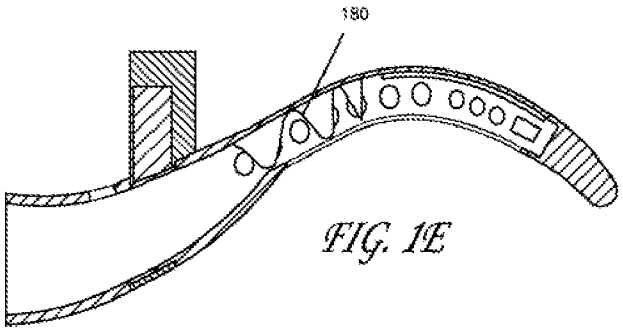


FIG. 1E

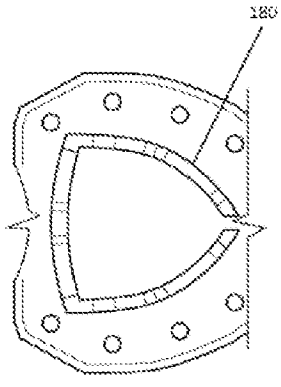


FIG. 5

Hirsch 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*, [0078], 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.

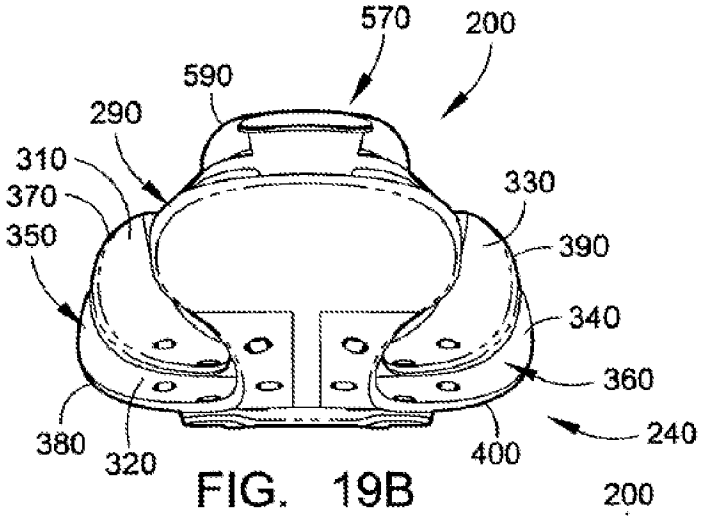
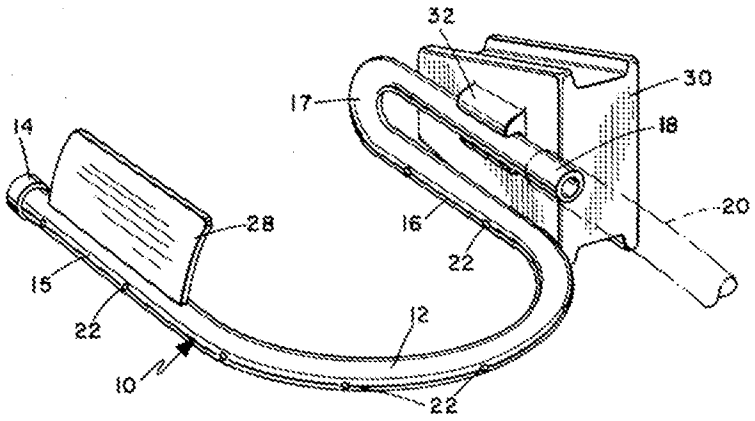


FIG. 19B

Schubert similarly fails to disclose the claimed 'bridge structure.' *Schubert* is simply cited to purportedly disclose the claimed 'mouth piece,' 'mouth block,' and 'strap portion.' *Office Action* at 3. *Schubert* merely discusses "a plurality of fluid collecting perforations 22 communicating with the interior of the tube" in FIG. 1 (provided below), which are not protrusions into the interior surface. *Schubert*, [2:15-18]. *Schubert* 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.'



Thus, *Hirsch* and *Schubert* – 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.

Langhans cited by the *Office Action* in relation to dependent claims cannot cure the deficiencies of *Hirsch* and *Schubert* with regards to the independent claim 21. *Office Action* at 6.

In view of the above remarks, the independent claim is patentable over the cited references. Furthermore, because each of the dependent claims incorporates by reference all the limitations of the independent claim from which it depends, the dependent claims are allowable for at least the same reasons. The Applicant therefore respectfully requests that the rejections of the claims under 35 U.S.C. § 103 be withdrawn.

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 22, 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. (cancelled)

3. (currently amended) The mouthpiece of claim 21, wherein the mouth prop comprises a bite block portion and a strap portion, wherein the strap portion corresponds to a circumference of the suction connector, wherein a cross section of an opening of the strap portion is parallel to the cross section of the first opening of the suction connector and parallel to the cross section of the suction port opening, wherein a first edge and a second edge of an external surface of the strap portion are adjacent to an external surface of the suction connector, wherein the first edge is opposite the second edge, and wherein the strap portion is injection-molded in a single piece with the bite block portion.

4. (currently amended) The mouthpiece of claim [[21]] 3, wherein the strap portion is elastic.

5. (currently amended) The mouthpiece of claim [[21]] 3, wherein an external surface of the suction connector comprises a notch region corresponding to the strap portion, the notch region separating the external surface into a first surface and a second surface and defining an interior surface coupled to the first surface by a first side wall and coupled to the second surface by a second side wall.

6. (currently amended) The mouthpiece of claim [[21]] 3, wherein the suction connector further comprises an external plug protrusion corresponding to an opening [[in]] through the bite block portion.

7. (currently amended) The mouthpiece of claim 6, wherein the plug protrusion fits into the opening [[of]] through the bite block portion to provide additional crush-resistance and decreased compressibility during biting by a patient.

8. (previously presented) The mouthpiece of claim 21, wherein the suction connector comprises a cutout corresponding to a protrusion on a vacuum adapter for an interlocking fit.

9. (previously presented) The mouthpiece of claim 21, wherein the suction connector connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source provides suction of fluids from the interior of the pocket toward the vacuum source.

10. (currently amended) The mouthpiece of claim 21, wherein the ~~anterior~~ first wall, the ~~posterior~~ second wall, and/or [[the]] a side wall comprise a plurality of perforations, wherein the side wall connects the first wall and the second wall.

11. (original) The mouthpiece of claim 10, wherein activation of a vacuum source associated with the main body draws fluids from an exterior of the main body through the perforations into the interior of the pocket of the main body.

12. (previously presented) The mouthpiece of claim 21, further comprising a cheek retractor portion connected to the main body portion and having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

13. (cancelled)

14. (cancelled)

15. (currently amended) The mouthpiece of claim 21, ~~further comprising a bridge structure that defines a wave shape, and~~ wherein the bridge structure comprises spaced protrusions at crests of the wave shape.

16. (previously presented) The mouthpiece of claim 15, wherein spaces between the spaced protrusions are at troughs of the wave shape.

17. (currently amended) The mouthpiece of claim 21, wherein the ~~posterior~~ second wall further includes a stability bar protruding from an interior surface of the ~~posterior~~ second wall and along a longitudinal axis of the main body.

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

19. (previously presented) The mouthpiece of claim 21, wherein a material that forms the main body is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

20. (previously presented) The mouthpiece of claim 21, wherein the mouth prop is interchangeable with a second mouth prop that is attachably and detachably associated with the main body portion, the second mouth prop being of a different size.

21. (currently amended) A mouthpiece comprising:

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

~~an anterior~~ a first wall,

a ~~posterior~~ 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 distance 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 ~~a side wall connecting the anterior wall to the posterior wall;~~

a suction connector extending from a [[base]] first end of the main body portion and integral to the main body portion, the suction connector including a cavity extending ~~from a longitude of the pocket of~~ longitudinally from the main body portion, the cavity in communication with the interior space of the pocket and extending from ~~having~~ a first opening of the suction connector at the ~~base~~ first end of the main body portion and through a length of the suction connector towards a suction port opening ~~directly~~ opposite from the main body portion~~, wherein a cross section of the first opening of the suction connector is parallel to a cross section of the suction port opening~~; and

a mouth prop ~~comprising a bite block portion and a strap portion, wherein the mouth prop is injection~~ molded in one piece, ~~wherein the strap portion corresponds to a circumference of the suction connector, wherein a cross section of an opening of the strap portion is parallel to the cross section of the first opening of the suction connector and parallel to the cross section of the suction port opening, wherein a first edge and a second edge of an external surface of the strap portion are adjacent to an external surface of the suction connector, and wherein the first edge is opposite the second edge,~~ and wherein the suction connector extends through and past the ~~strap portion~~ mouth prop.

22. (currently amended) The mouthpiece of claim 5, wherein the strap portion sits in the notch region when attached around the circumference of the suction ~~connection portion~~ connector and the strap portion has a thickness corresponding to a height of the first side wall and the second side wall so that the strap portion is flush with both the first surface and the second surface.

23. (currently amended) The mouthpiece of claim 22, wherein an interior surface of the strap portion is adjacent to the ~~interior notch region~~ interior surface of the suction connector defined by the notch region.

24. (new) A mouthpiece comprising:

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

a first wall having an interior surface facing the interior space of the pocket, and

a second wall having an interior surface facing the interior surface of the first, wall, the second wall comprising a bridge structure that includes a plurality of protrusions integral with and protruding from the interior surface of the second wall and substantially extending a distance 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;

a mouth prop molded in one piece and located at a first end of the main body portion; and

a suction connector integral with the main body portion and extending from the first end of the main body portion past the mouth prop, wherein the suction connector includes a cavity in communication with the interior space of the pocket.

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	14228061
Filing Date	27-Mar-2014
First Named Inventor	Thien Nguyen
Attorney Docket Number	INCEP-001COE
Title of Invention	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

☒ 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 L. Chung/
Name	Ruby L. Chung

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	14228061
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Ruby Lim Chung/Cheri Houle
Attorney Docket Number:	INCEP-001COE

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.: 14228061

Filing Date: 27-Mar-2014

Applicant/Patent under Reexamination: Nguyen

Electronic Terminal Disclaimer filed on January 27, 2021

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt

EFS ID:	41764480
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	27-JAN-2021
Filing Date:	27-MAR-2014
Time Stamp:	19:48:43
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	E20211QJ48399316
Deposit Account	501662
Authorized User	Cheri Houle

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

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

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	33429 a82ad926690245495 1e45465cc509f6b490 74b47	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30202 caf5f6612e878fa21184f2754490f11d3af11 138	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	63631		

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/228,061	03/27/2014	Thien Nguyen	INCEP-001COE	6191

138718 7590 04/29/2021

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

EXAMINER	
MAI, HAO D	

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
04/29/2021	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. 14/228,061	Applicant(s) Nguyen et al.	
	Examiner HAO D MAI	Art Unit 3772	AIA (FITF) Status No

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

Period for Reply

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

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

Status

1)☑ Responsive to communication(s) filed on 01/27/2021.

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

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

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

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

Disposition of Claims*

5) ☑ Claim(s) 3-12 and 15-24 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) 3-12 and 15-24 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.

Terminal Disclaimer

2. The terminal disclaimer filed on 01/27/2021 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 9,788,924 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 112

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

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

4. **Claims 3-12 and 15-24,** 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 24 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being incomplete for omitting essential elements, such

omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: a side wall connecting the first/anterior wall and the second/superior wall as disclosed in the Application Figs. 1A, 2A

Claims 21 and 24 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being incomplete for omitting essential 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: positional relationship between the first wall and second wall.

Claims 11, 17, and 19, each recites the limitation "the main body", which lacks sufficient antecedent basis in the claims. Note that the base claim 21 defines antecedent basis for "a main body portion".

Claims 15-16 each recites "spaced protrusions" (line 2). It is unclear whether such limitations are the same, different from, or part of the "protrusions" previously recited in base claim 21.

All dependent claims are rejected herein based on dependency.

Claim Rejections - 35 USC § 103

5. 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.

6. **Claims 3-12, 15-18, and 20-24, are rejected under 35 U.S.C. 103(a) as being unpatentable over Krouzian (3,758,950) in view of Schubert (4,167,814),**

Regarding claim 24, Krouzian discloses mouthpiece (Figs. 4-6) comprising: a main body portion 27/21 configured as a pocket 29 having an interior space 29, the pocket defined by: a first wall (outer envelope 27) having an interior surface facing the interior space 29 of the pocket, and a second wall (core 21 and/or ring 22) having an interior surface facing the interior surface of the first wall 27 (Figs. 5-6).

The second wall 21/22 comprising a bridge structure 21 that includes a plurality of protrusions 24 integral with and protruding from the interior surface of the second wall 21 and substantially extending a distance between the first wall 27 and the second wall 21/22. The bridge structure 24 is not attached to the first/outer wall 27, wherein the protrusions 24 of the bridge structure protrude from the interior surface of the second wall in a wave shape comprising one or more crests (bars 24) and one or more troughs (between bars 24). See Figs. 5-6; column 4 lines 3-14.

Krouzian further discloses a suction connector (neck portion best pointed to by reference number 17 in Fig. 1) that is integral with the main body portion 27/21 and extending from a first end of the main body portion. The suction connector (neck portion of outer member 27) includes a cavity (that receives suction tube 23); the cavity/bore is in communication with the interior space of the pocket 29 (Figs. 4-6).

Krouzian fails to disclose a mouth prop as claimed. **Schubert** discloses a mouthpiece 10 and a mouth prop 30/32. The mouthpiece 10 has a main body portion

(tube 12) and a suction connector 18 integral with the main body portion 12 and extending from a first end 17 of the main body portion 12 past the mouth prop 30/32. The mouth prop 30-32 is shown as one piece and located at a first end the main body portion. The suction connector 18 is shown being integral with the main body portion (tube 12) and extending from the first end of the main body portion past the mouth prop 30/32. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include such mouth prop as taught by Schubert into Krouzian's suction mouth piece device in order to keep the mouth open.

Regarding claim 21, Krouzian/Schubert discloses the invention substantially as claimed as detailed above with respect to claim 24. Particularly, Krouzian discloses the suction connector (neck portion 17 shown in Fig. 1) includes a cavity (bore) extending longitudinally from the main body portion, in communication with the interior space of the pocket 29 and extending from a first opening (opening into the pocket 29) through a length of the suction connector toward a suction port opening (opening that receives 23) opposite from the main body portion. **Schubert** discloses a mouthpiece 10 and a mouth prop 30/32. The mouthpiece 10 has a main body portion (tube 12) and a suction connector 18 integral with the main body portion 12 and extending from a first end 17 of the main body portion 12 past the mouth prop 30/32. The mouth prop 30-32 is shown as one piece and located at a first end the main body portion. The suction connector 18 is shown being integral with the main body portion (tube 12) and extending from the first end of the main body portion past the mouth prop 30/32. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed

invention to include such mouth prop as taught by Schubert into Krouzian's suction mouth piece device in order to keep the mouth open.

As to claims 3-4, Schubert's incorporated mouth prop comprises an elastic/resilient strap portion 32 and a bite block portion 30 molded into one piece (Fig. 1; column 2 lines 36-46). The strap portion 32 corresponds to a circumference of the suction connector 17/18 of, wherein a cross section of an opening of the stracp portion is parallel to the cross section of the first opening and suction portion opening of the suction connector 17/18. A first edge/side and a second edge/side of an external surface of the strap portion 32 are adjacent to an external surface of the suction connector 17/18, and wherein the first edge/side is opposite the second edge/side, wherein the suction connector 17/18 extends through and past the strap portion 32 (Figs. 1-3). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to connect such mouth prop to a a mouth piece device utilizing the strap elastic/resilient strap portion corresponding to the circumference of the suction connector as a suitable connection as explicitly taught by Schubert with reasonable expectation of success.

As to claims 6-7, Krouzian shows the suction connector 17 comprises an external plug protrusion 17 (Figs. 1 and 4). Likewise, Schubert shows the suction connector 17/18 comprises an external plug protrusion 18 corresponding to an opening (of strap 32) in the bite block portion 30/32 providing additional crush-resistance and decreased compressibility during biting by a patient. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Krouzian by incorporate Shubert's bite prop with the connection of the plug protrusion

fits into the opening of the bite block portion as a suitable alternative connection of such mouth prop and mouthpiece.

As to claim 8, Krouzian shows the suction connector 17 having a cutout (opening bore thereof) corresponding to a protrusion 13 on a vacuum adapter for an interlocking fit. Note that the vacuum adapter and the any limitation (e.g. protrusion) thereof are not positively claimed as an element of the invention and therefore is not given patenable weight. As to claim 9, Krouzian shows the suction connector 17 connects the interior of the pocket 29 to a vacuum source 13/23, wherein activation of the vacuum source provides suction of fluids from the interior of the pocket toward the vacuum source (Figs. 1 and 4). As to claims 10-11, Krouzian shows at the least the wall 27 comprising a plurality of perforations 28, wherein activation of a vacuum source associated with the main body draws fluids from an exterior of the main body through the perforations into the interior of the pocket 29 of the main body. As to claim 12, Krouzian fails to disclose a cheek retractor portion. Schubert discloss a cheek retractor portion 28 (Fig. 1). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Krouzian by including such cheek retractor as taught by Schubert in order to effectively retract the cheek.

As to claim 15-16, Krouzian's bridge structure 21/24 comprise spaced protrusions 24 at crests of the wave shape, and spaces therebetween are at troughs of the waveshape. As to claim 17, one of the bars 24 is a stability bar protruding from the second wall 21/22 and along a longitudinal axis of the main body. As to claim 18, 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, Krouzian shows at least the wall 21/22 is of molded plastic (column 4 lines 3-14); and the mouthpiece is one piece as a whole. The burden is shifted to applicant to show an unobvious difference between Krouzian' device and the invention that would have resulted from the injection molding process.

As to claim 20, the incorporated Shubert's mouth prop is detachable and therefore is interchangeable with another/second mouth prop. Note that the second mouth prop is not actively claimed and therefore is not given patentable weight.

7. **Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krouzian in view of Schubert and further in view of Hirsch et al. (2003/0134253).**

Regarding claim 19, Krouzian/Krouzian fails to disclose the material forming the device being autoclavable silicone-based material. Hirsch discloses a mouthpiece device that is formed of a flexible, translucent, high heat-resistant, autoclavable silicone-based material of Pebax (paragraph 49). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Krouzian/Schubert by forming the mouthpiece device from flexible, translucent, high heat-resistant, autoclavable silicone-based material of Pebax as taught by Hirsch et al. to be a suitable alternative thermoplastic material for such mouth piece devices.

8. **Claims 5 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krouzian et al. in view of Schubert, as applied to claim 21 as detailed above, and further in view of Langhans (2,019,612).**

As to claims 5 and 22-23, Krouzian/Schubert, particularly Schubert fails to disclose the suction connector portion 1718 comprising a notch region corresponding to the strap portion 32. **Langhans** discloses a connection between a strap 34 and a cylindrical-shape connector 24, wherein an external surface of the cylindrical-shape connector portion 24 comprises a notch region (best pointed to by reference numeral 22 in Fig. 2); the notch region separating the external surface into a first surface and a second surface and defining an interior surface (base surface of notch) couple to the first surface by a first side wall (side surface of notch) and coupled to the second surface by a second side wall (other side surface of notch). As to claims 22-23, **Langhans** shows the strap portion 34 sits in the notch region when attached around the circumference of the cylindrical connection portion 24, and the strap portion 34 has a thickness corresponding to a height of the first side wall and the second side wall so that the strap potion 34 is flush with both the first surface and the second surface of cylindrical connection portion 24, and the strap portion 34 is adjacent to the interior notch region interior surface (Figs. 1-3; page 2 first column lines 31-35). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Krouzian/Schubert by substituting Schubert's snap-on connection between the strap and the cylindrical shape connector with Langhans' notch-strap connection between the strap and the cylindrical shaped connector in order

to obtain a smooth flushing exterior surface at the connection area as taught by Langhans.

Response to Arguments

9. Applicant's arguments regarding the amendment made to the claims have been fully considered but are moot in view of the new ground(s) of rejection under Krouzian et al. as detailed above. Applicant's remarks regarding the amendments made to the claims are held to be responded in the above ground(s) of rejection.

Note that the omission of the side wall and structural or positional relationship between the first wall and the second wall amount to a gap between the elements. See 35 U.S.C. 112 ground(s) of rejection above.

Conclusion

10. **THIS ACTION IS MADE FINAL.** 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 mailing 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

Notice of References Cited	Application/Control No. 14/228,061	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-3758950-A	09-1973	Krouzian; Kersam K.	A61C17/08	433/91
	B					
	C					
	D					
	E					
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	I					
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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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,061	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043, 046	11/16/2015	HDM
A61C 17/04, 0208	06/20/2016	HDM
Update Search	06/20/2016	HDM
Update Search	07/08/2019	HDM
Update Search	01/06/2020	HDM

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

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

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

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,061	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor Search	11/16/2015	HDM
Review searches of parent case 14/100323	11/16/2015	HDM
Update Search	06/20/2016	HDM
Update Search	02/20/2017	HDM
Update Search	10/16/2017	HDM
Update Search	09/30/2018	HDM
Update Search	07/08/2019	HDM
Update Search	01/06/2020	HDM
Update Search	11/21/2020	HDM
Update Search	04/24/2021	HDM

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

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,061	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	07/08/2019	07/08/2019	07/08/2019	07/08/2019	07/08/2019	07/08/2019	01/06/2020	11/21/2020	04/24/2021
	1	✓	✓	✓	-	-	-	-	-	-
	2	✓	✓	✓	-	-	-	-	-	-
	3	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5	✓	✓	O	✓	✓	✓	✓	✓	✓
	6	✓	✓	✓	✓	✓	✓	✓	✓	✓
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	22						✓	✓	✓	✓
	23						✓	✓	✓	✓
	24									✓

Substitute for Form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known	
Application Number	14/228,061
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COE

Sheet	1	of	2

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2](If known)		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	D876,627	2/25/2020	Nguyen	
		US-				
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Codes (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T6

Examiner Signature	/Hao D Mai/	Date Considered	04/24/2021

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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	14/228,061
	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-001COE

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T[2]
		Docket No. INCEP-001COA U.S. Patent Application 14/228,046; Office Action mailed 1/10/20	
		Docket No. INCEP-001COC U.S. Patent Application 14/228,054; Office Action mailed 1/13/20	

Examiner Signature	/Hao D Mai/	Date Considered	04/24/2021

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S168	1	("4167814").PN.	US-PGPUB; USPAT	OR	OFF	2021/01/11 14:25
S169	1	("8911232").PN.	US-PGPUB; USPAT	OR	OFF	2021/01/11 14:31
S170	2	(("20030134253") or ("4167814")).PN.	US-PGPUB; USPAT	OR	OFF	2021/04/24 08:19
S171	127	(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-20070231773-$ or US-20080255498-$ or US-20100297577-$ or US-20110229847-$ or US-20120015317-$ or US-20140322668-$ or US-20150100041-$ or US-20150335409-$ or US-20040033468-$ or US-20140099597-$ or US-20030054317-$ or US-20060199147-$ or US-20030219696-$ or US-20110159457-$ or US-20110217672-$).did. or (US-20160296310-$ or US-20170333159-$ or US-20150209535-$ or US-20150182319-$ or US-20080009832-$ or US-20190135365-$ or US-20190105183-$ or US-20100326736-$ or US-20180250103-$ or US-20160184067-$ or US-20140272750-$ or US-20050255422-$).did. or (US-3090122-$ 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-	US-PGPUB; USPAT; USOCR; FPRS; DERWENT	ADJ	OFF	2021/04/24 09:18

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S176	2	(("4167814") or ("3758950")).PN.	US-PGPUB; USPAT	OR	OFF	2021/04/24 11:51
S177	4	(("3768477") or ("20060063129") or ("20030134253") or ("2019612")).PN.	US-PGPUB; USPAT	OR	OFF	2021/04/24 12:44
S178	49	dental and (suction or aspiration or evacuation) and (translucent and flexible, and autoclavable and silicone)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2021/04/24 12:46
S184	127	(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-20070231773-$ or US-20080255498-$ or US-20100297577-$ or US-20110229847-$ or US-20120015317-$ or US-20140322668-$ or US-20150100041-$ or US-20150335409-$ or US-20040033468-$ or US-20140099597-$ or US-20030054317-$ or US-20060199147-$ or US-20030219696-$ or US-20110159457-$ or US-20110217672-$).did. or (US-20160296310-$ or US-20170333159-$ or US-20150209535-$ or US-20150182319-$ or US-20080009832-$ or US-20190135365-$ or US-20190105183-$ or US-20100326736-$ or US-20180250103-$ or US-20160184067-$ or US-20140272750-$ or US-20050255422-$).did. or (US-3090122-$ 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-	US-PGPUB; USPAT; USOCR; FPRS; DERWENT	ADJ	OFF	2021/04/24 12:50

		4718662-$ or US-6213772-$ or US-3396468-$ or US-2111859-$ or US-2937445-$ or US-4024642-$ or US-4425911-$ or US-6652276-$ or US-4695253-$ or US-8870568-$ or US-5762496-$ or US-4906188-$ or US-5438976-$ or US-D734851-$ or US-8911232-$ or US-6743017-$ or US-6193513-$ or US-4992046-$ or US-3758950-$).did. or (US-4261697-$ or US-5975897-$ or US-5114342-$ or US-4083115-$ or US-4878900-$ or US-5322518-$ or US-5123840-$ or US-8752579-$ or US-6666686-$ or US-3713443-$ or US-2531730-$ or US-1583023-$ or US-4586900-$ or US-5487660-$ or US-10299446-$ or US-7744371-$ or US-5378150-$ or US-10022207-$ or US-8833572-$ or US-4752223-$ or US-6213771-$ or US-3713221-$ or US-7226289-$).did. or (US-2937445-$ or US-2250285-$ or US-3324855-$ or US-RE26470-$ or US-1471207-$ or US-1620773-$ or US-3562913-$ or US-2776488-$ or US-2019612-$).did. or (FR-1463351-$ or WO-2011014952-$).did. or (WO-9804023-$ or US-8833572-$).did.				

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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	14/228,061
Filing Date	March 27, 2014
First Named Inventor:	Thien Nguyen
Art Unit	3772
Examiner Name	Hao D. Mai
Attorney Docket Number	INCEP-001COE

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No'	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T^2
		Brazilian Patent Application No. BR1120140116377 Preliminary Office Action 1/7/20	

Examiner Signature	/Hao D Mai/	Date Considered	04/24/2021

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Sheet 1 **of** 1	Attorney Docket Number	INCEP-001COE

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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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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	
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		US-	2020/0352680	11/12/2020	Nguyen	

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		WO 2020/231864	11/19/2020	Dryshield, LLC		

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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	14/228,061
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		Docket No. INCEP-001COD U.S. Patent Application 14/228,057; Office Action mailed 5/5/21	
		Docket No. INCEP-004DCOA U.S. Patent Application 29/477,888 Office Action mailed 3/21/17	

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(54) Title: DENTAL MOUTHPIECE

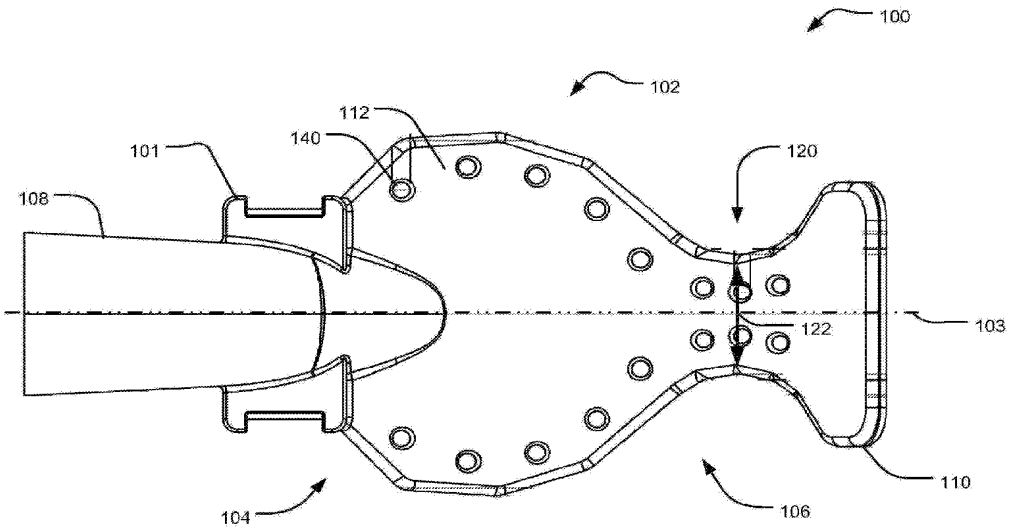


FIG. 1

(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]

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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.

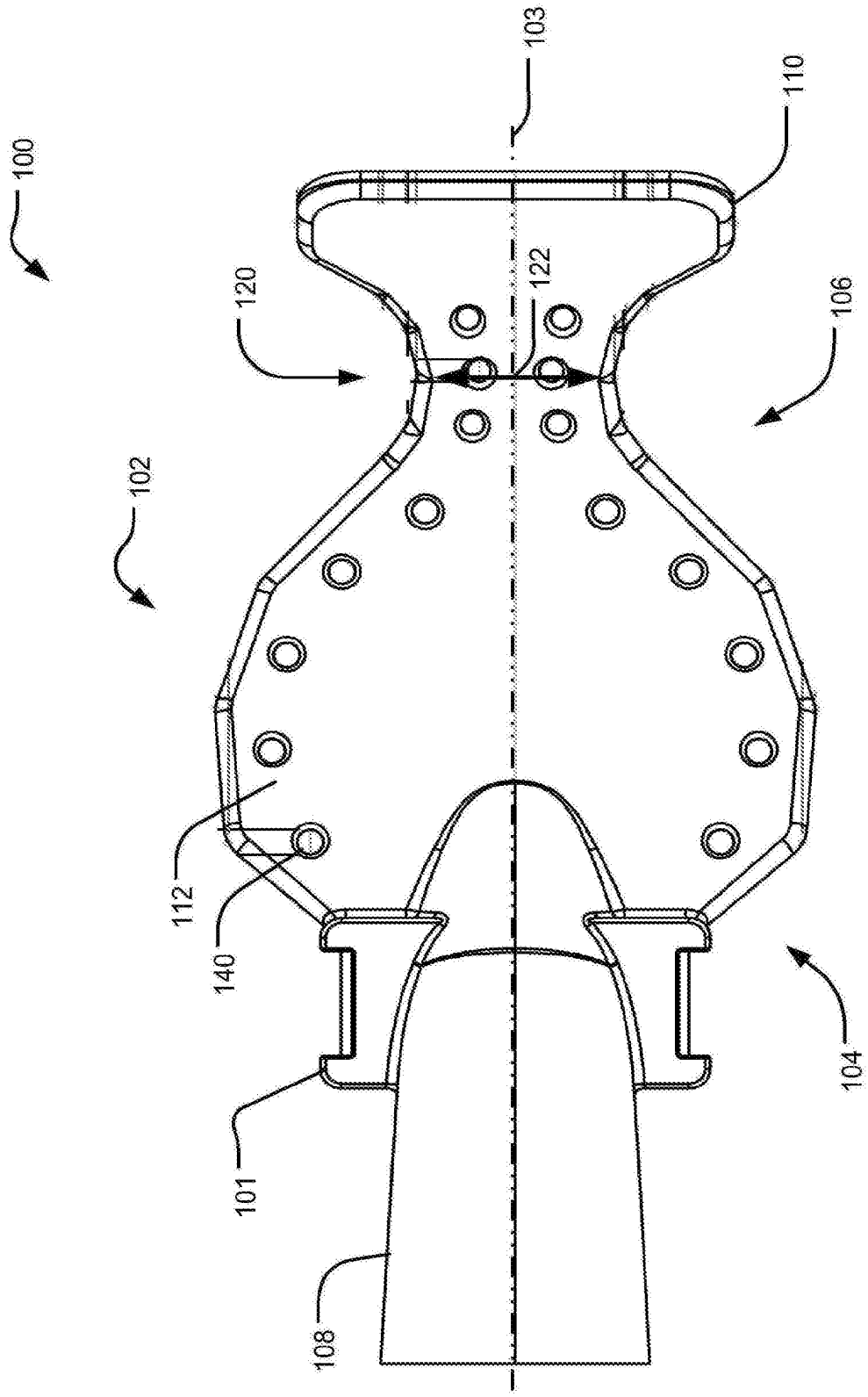


FIG. 1

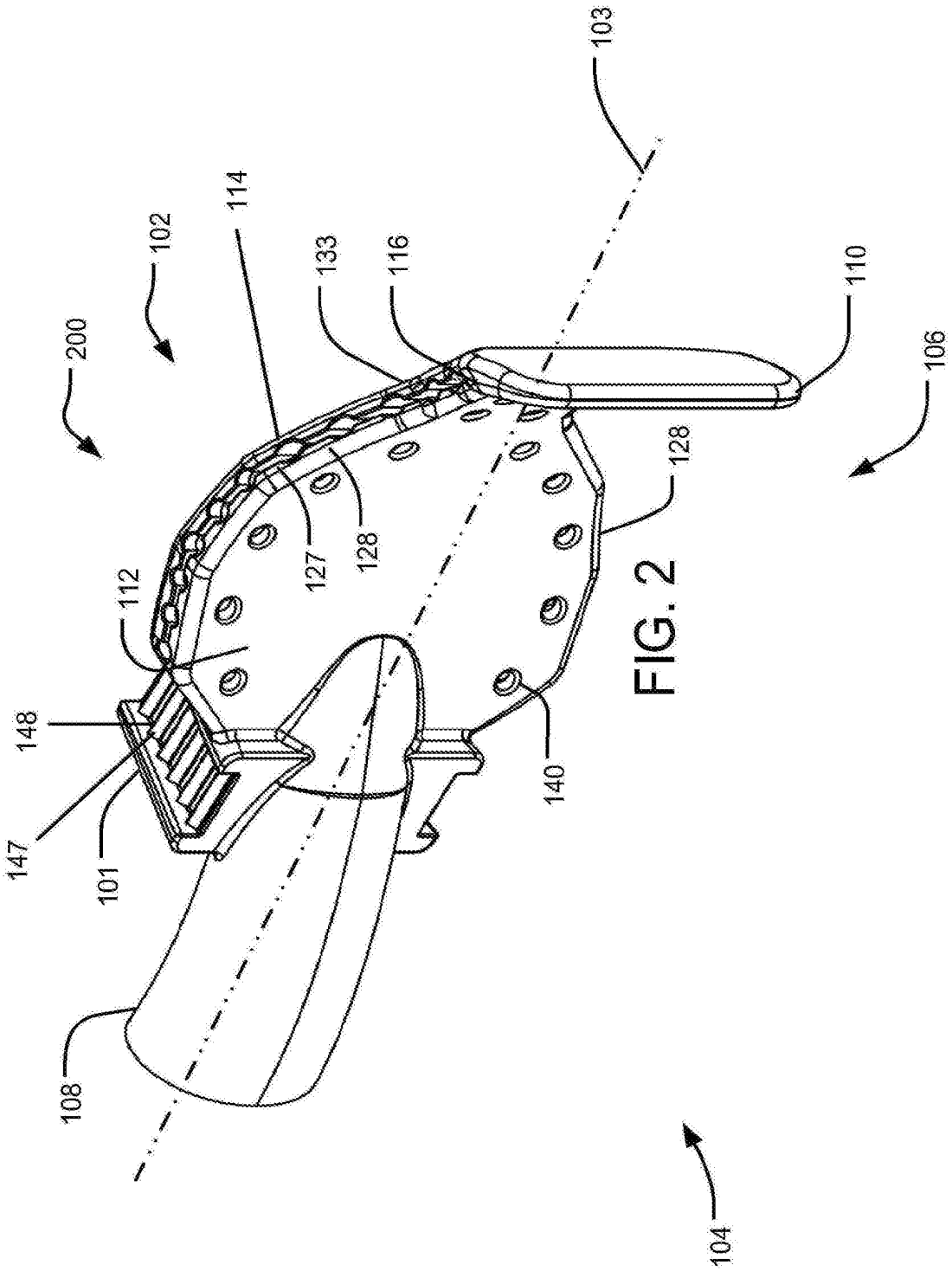

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FIG. 2

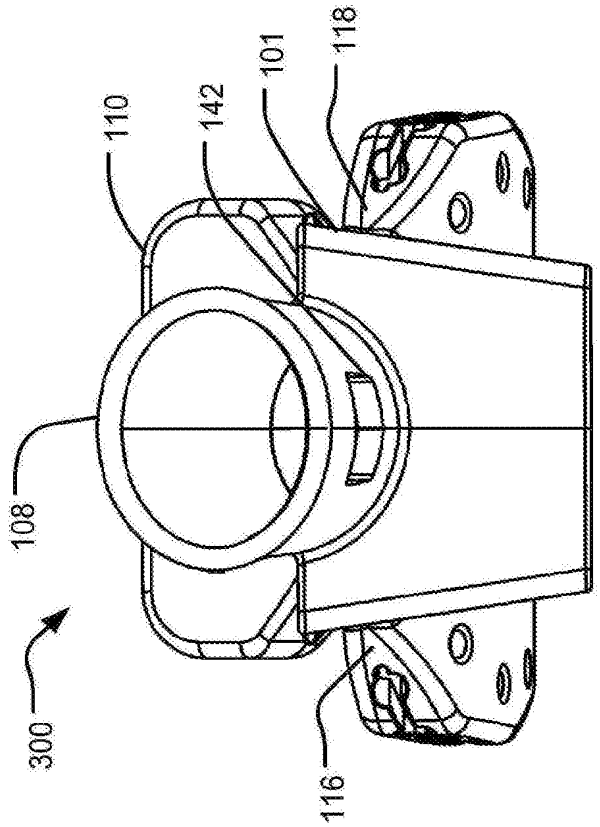


FIG. 3

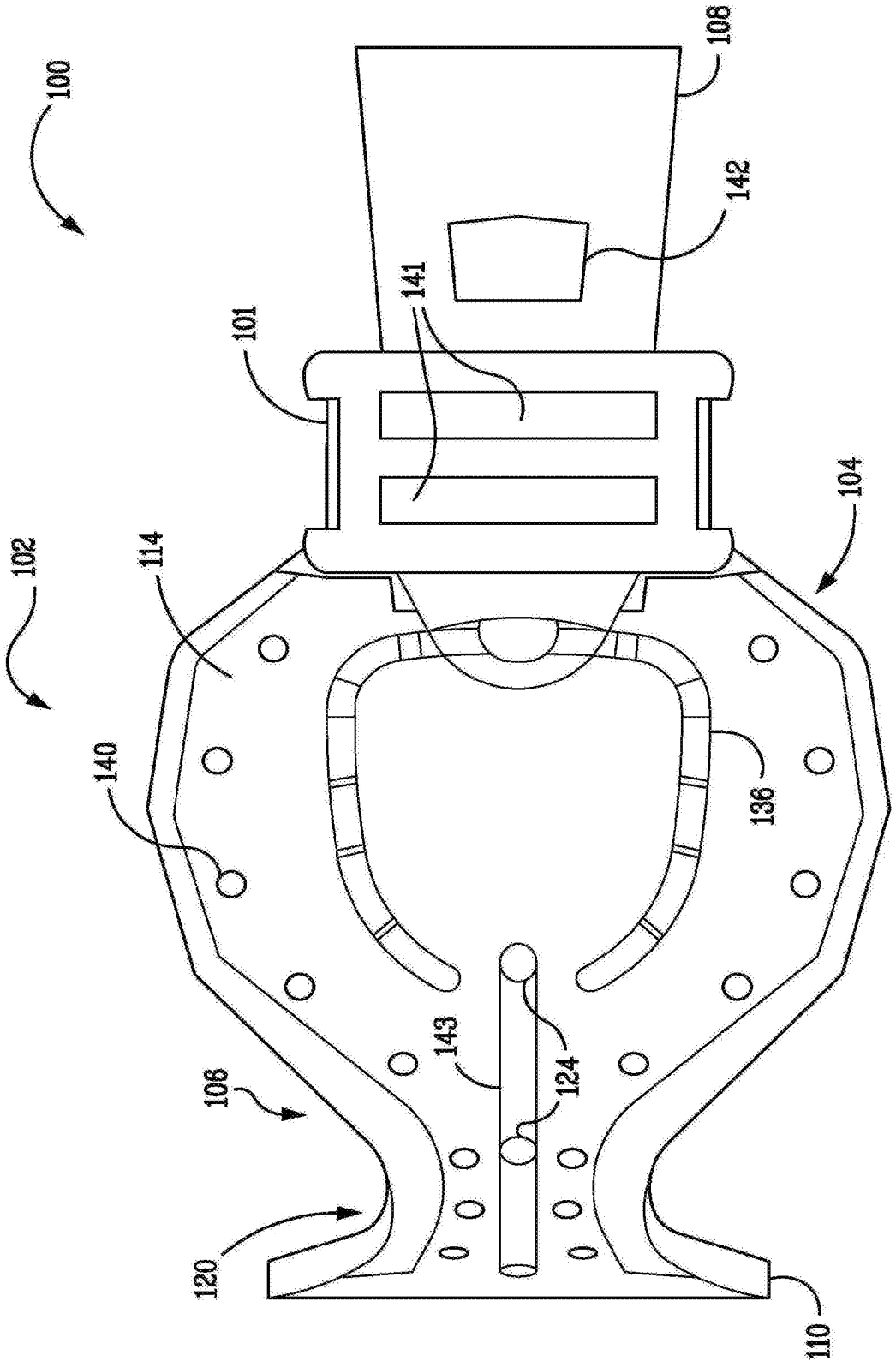


FIG. 4

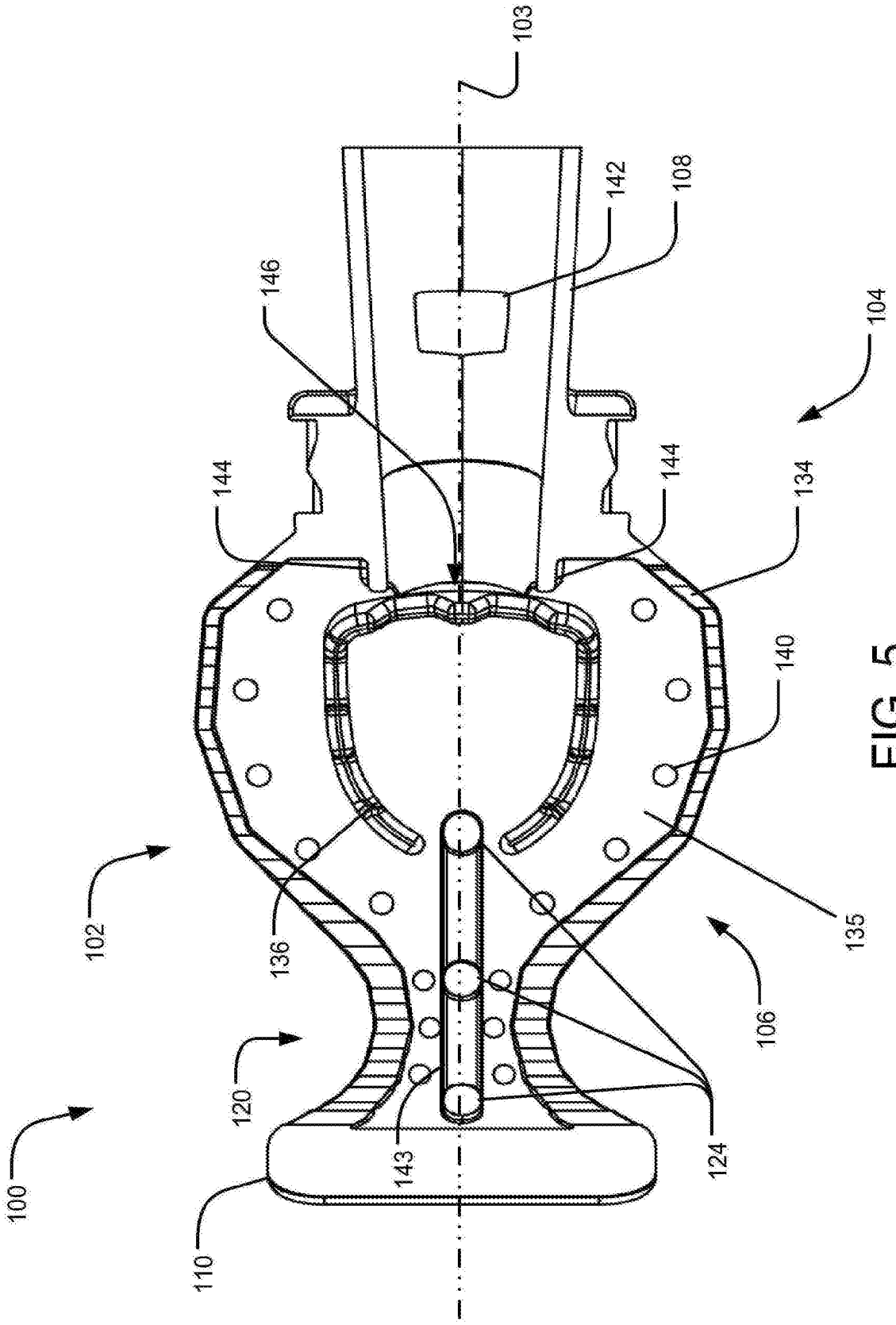

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FIG. 5

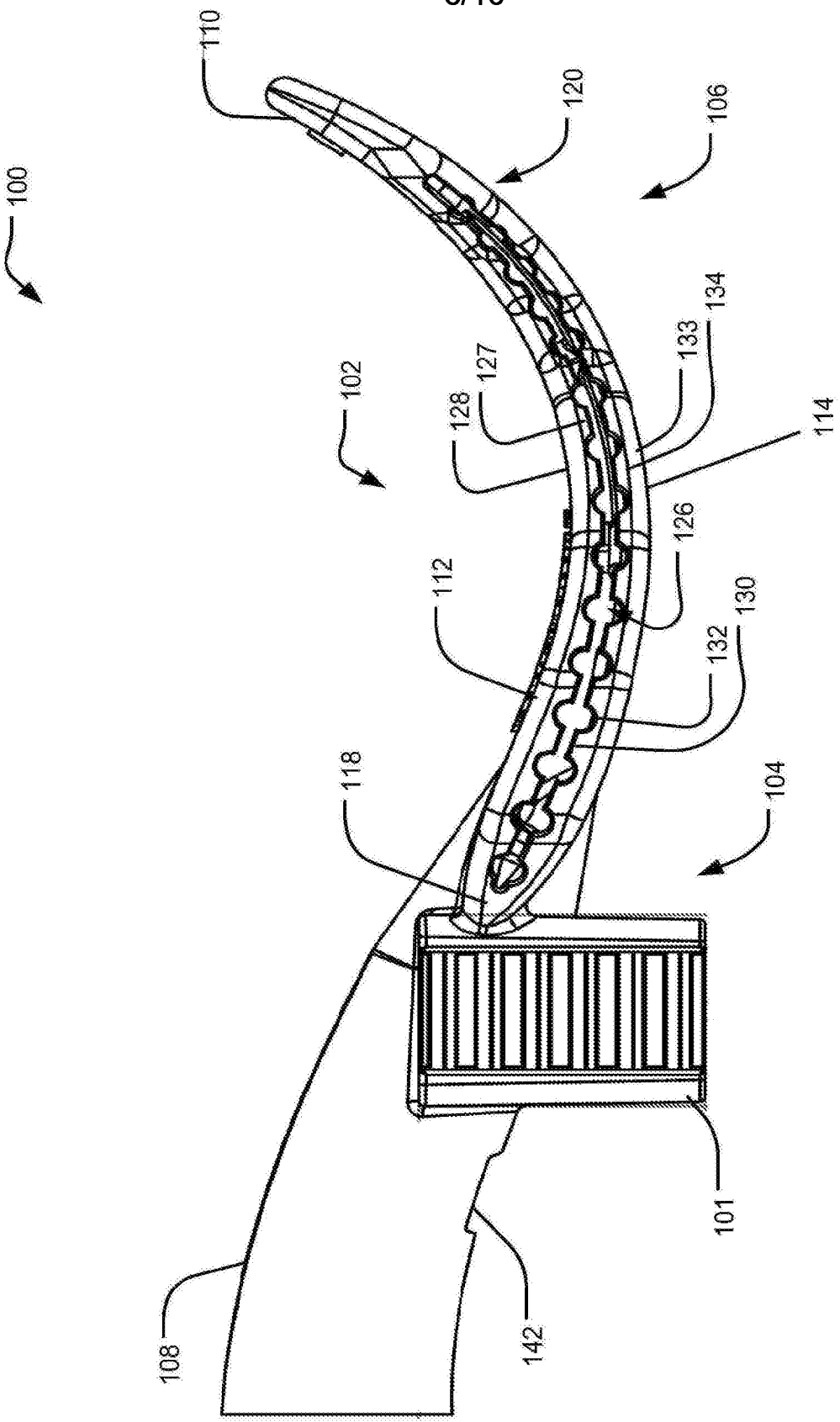

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FIG. 6

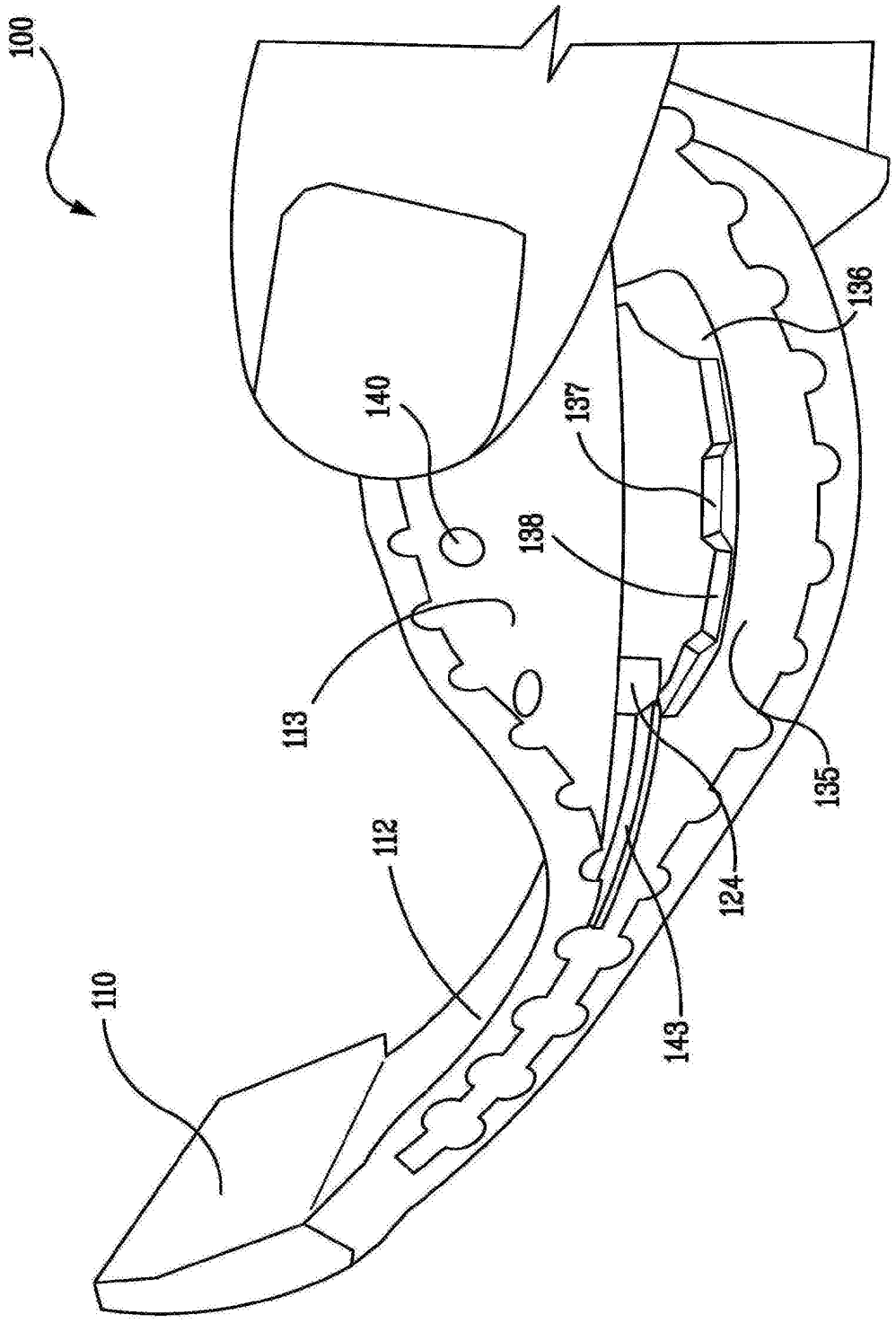


FIG. 7

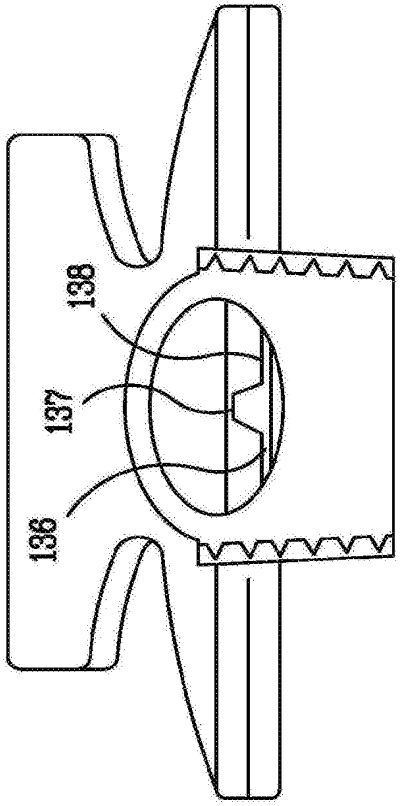


FIG. 8

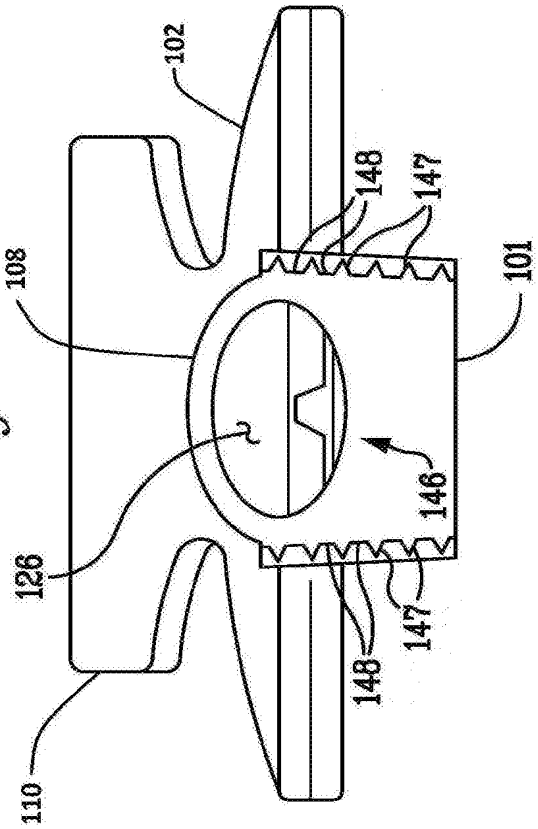


FIG. 9

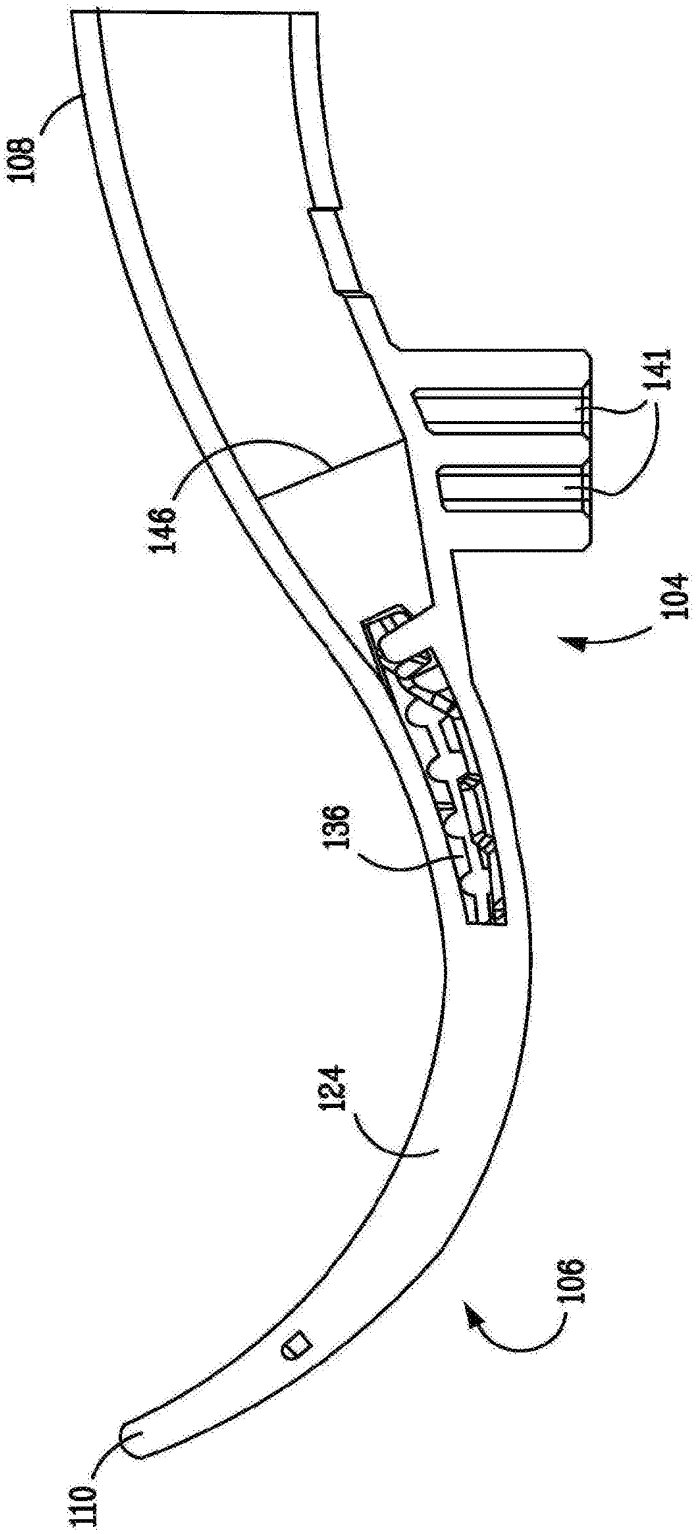


FIG. 10

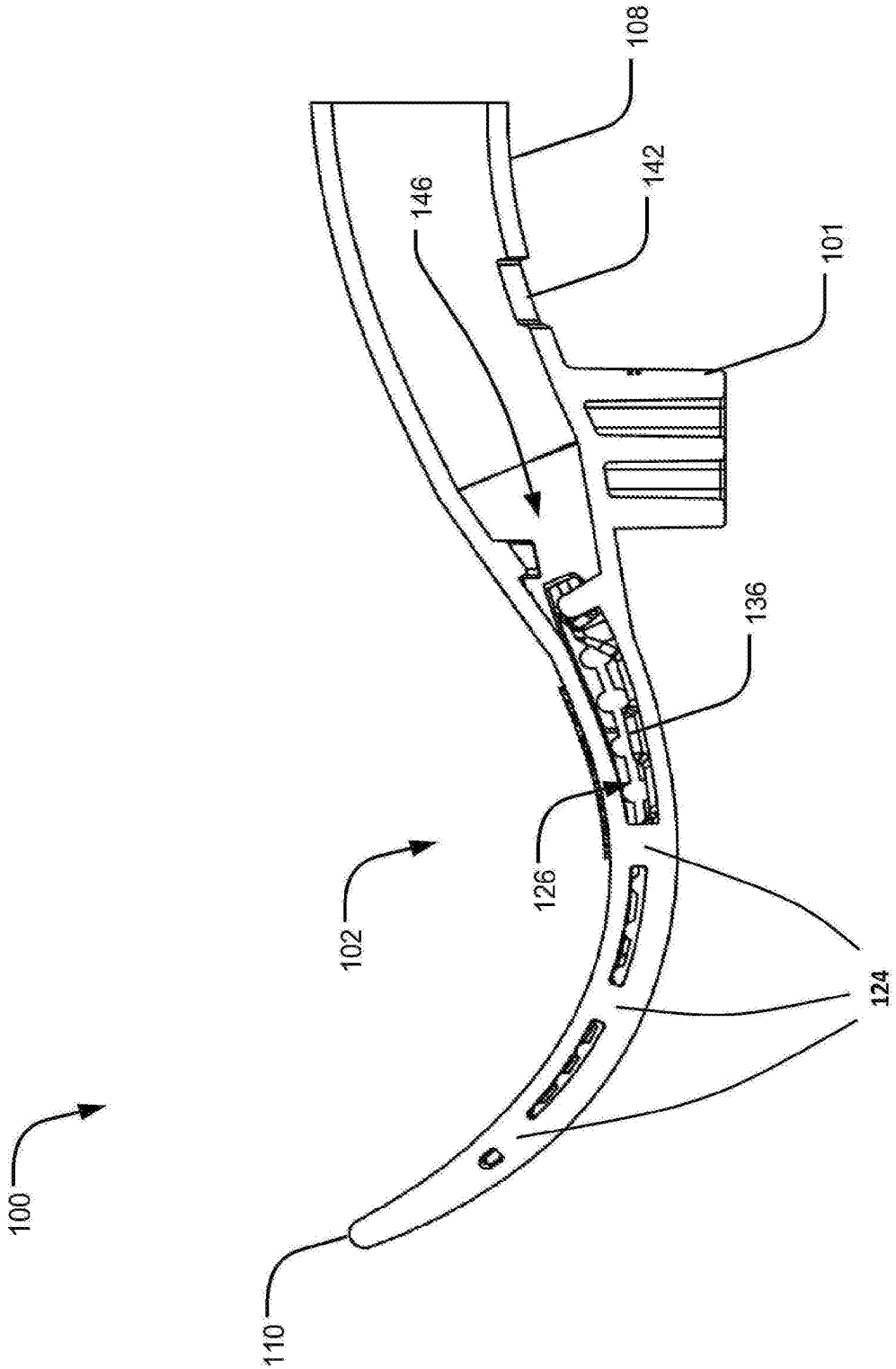


FIG. 11

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)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772

Examiner: Hao D. Mai

Serial No.: 14/228,061

Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191

Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACABLE MOUTH PROP

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/_____
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Electronic Patent Application Fee Transmittal

Application Number:	14228061
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Ruby Lim Chung/Lea Fong
Attorney Docket Number:	INCEP-001COE

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	130	130
		Total in USD ($)		**130**

Electronic Acknowledgement Receipt

EFS ID:	42696798
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	12-MAY-2021
Filing Date:	27-MAR-2014
Time Stamp:	19:11:56
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$130
RAM confirmation Number	E20215BJ12091453
Deposit Account	
Authorized User	

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

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	INCEP-001COE_IDS_Statement_5-12-21.pdf	96978 a3b6cbb937f3707742e2499a840b9de9e2b6aeaa	no	2
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	INCEP-001COE_IDS_1449_5-12-21.pdf	224568 09d8e24c7ee15ae78fe46a433c4d6d8bb4dd2153	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	Transmittal Letter	INCEP-001COE_List_of_Copending_Apps_5-12-21.pdf	101329 0ab05a0db8c3789f3e9a4df87f030cc99d01d812	no	1
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	30198 ee61a1ee9198e79d14471eb03f3331741339ce9f	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1678010		

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.: 14/228,061 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191 Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACABLE MOUTH PROP

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/_____
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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 14/228,061	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	07/29/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0		x $240 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

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

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/GLORIA J NORRIS/
*** 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
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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	14228061	Filing Date	2014-03-27	Docket Number (if applicable)	INCEP-001COE	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)	2021-07-29
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

APPLICANT:	Dryshield, LLC
INVENTOR(S):	Thien Nguyen, et al.
APPLICATION NO.:	14/228,061
FILED:	March 27, 2014
TITLE:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
EXAMINER:	Hao D. Mai
ART UNIT:	3772
CONF. NO.:	6191
ATTY.DKT.NO.:	INCEP-001COE

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P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

RESPONSE M

Examiner Mai:

In response to the *Office Action* mailed April 29, 2021 (*Office Action*), the Applicant provides the following **amendments to the claims**, beginning on page **two**. The **remarks** and **conclusion** begin on pages **seven** and **twelve**, respectively. This response is submitted with an RCE.

IN THE CLAIMS

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. (cancelled)

2. (cancelled)

3. (previously presented) The mouthpiece of claim 21, wherein the mouth prop comprises a bite block portion and a strap portion, wherein the strap portion corresponds to a circumference of the suction connector, wherein a cross section of an opening of the strap portion is parallel to the cross section of the first opening of the suction connector and parallel to the cross section of the suction port opening, wherein a first edge and a second edge of an external surface of the strap portion are adjacent to an external surface of the suction connector, wherein the first edge is opposite the second edge, and wherein the strap portion is injection-molded in a single piece with the bite block portion.

4. (previously presented) The mouthpiece of claim 3, wherein the strap portion is elastic.

5. (previously presented) The mouthpiece of claim 3, wherein an external surface of the suction connector comprises a notch region corresponding to the strap portion, the notch region separating the external surface into a first surface and a second surface and defining an interior surface coupled to the first surface by a first side wall and coupled to the second surface by a second side wall.

6. (previously presented) The mouthpiece of claim 3, wherein the suction connector further comprises an external plug protrusion corresponding to an opening through the bite block portion.

7. (previously presented) The mouthpiece of claim 6, wherein the plug protrusion fits into the opening through the bite block portion to provide additional crush-resistance and decreased compressibility during biting by a patient.

8. (previously presented) The mouthpiece of claim 21, wherein the suction connector comprises a cutout corresponding to a protrusion on a vacuum adapter for an interlocking fit.

9. (previously presented) The mouthpiece of claim 21, wherein the suction connector connects the interior of the pocket to a vacuum source, wherein activation of the vacuum source provides suction of fluids from the interior of the pocket toward the vacuum source.

10. (previously presented) The mouthpiece of claim 21, wherein the first wall, the second wall, and/or a side wall comprise a plurality of perforations, wherein the side wall connects the first wall and the second wall.

11. (currently amended) The mouthpiece of claim 10, wherein activation of a vacuum source associated with the main body portion draws fluids from an exterior of the main body through the perforations into the interior of the pocket of the main body.

12. (previously presented) The mouthpiece of claim 21, further comprising a cheek retractor portion connected to the main body portion and having a surface that applies pressure when bent, wherein the pressure is based on resilience of the cheek retractor portion.

13. (cancelled)

14. (cancelled)

15. (currently amended) The mouthpiece of claim 21, wherein the bridge structure comprises ~~spaced~~ protrusions at crests of the wave shape.

16. (currently amended) The mouthpiece of claim 15, wherein spaces between the ~~spaced~~ protrusions are at troughs of the wave shape.

17. (currently amended) The mouthpiece of claim 21, wherein the second wall further includes a stability bar protruding from an interior surface of the second wall and along a longitudinal axis of the main body portion.

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

19. (currently amended) The mouthpiece of claim 21, wherein a material that forms the main body portion is a flexible, translucent, high heat-resistant, autoclavable silicone-based material.

20. (previously presented) The mouthpiece of claim 21, wherein the mouth prop is interchangeable with a second mouth prop that is attachably and detachably associated with the main body portion, the second mouth prop being of a different size.

21. (currently amended) A mouthpiece comprising:

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

a first wall,

a second wall <u>parallel to the first wall,</u> 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 distance 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]]

<u>a connecting wall that connects the first wall to the second wall across the span between the first wall and the second wall; and</u>

a suction connector extending from a first end of the main body portion and integral to the main body portion, the suction connector including a cavity extending longitudinally from the main body portion, the cavity in communication with the interior space of the pocket and extending from a first opening of the suction connector at the first end of the main body portion and through a length of the suction connector towards a suction port opening opposite from the main body portion; and

a mouth prop molded in one piece, and wherein the suction connector extends through and past the mouth prop.

22. (previously presented) The mouthpiece of claim 5, wherein the strap portion sits in the notch region when attached around the circumference of the suction connector and the strap portion has a thickness corresponding to a height of the first side wall and the second side wall so that the strap portion is flush with both the first surface and the second surface.

23. (previously presented) The mouthpiece of claim 22, wherein an interior surface of the strap portion is adjacent to the interior surface of the suction connector defined by the notch region

24. (currently amended) A mouthpiece comprising:

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

a first wall having an interior surface facing the interior space of the pocket, and

a second wall parallel to the first wall, having an interior surface facing the interior surface of the first, wall, the second wall comprising a bridge structure that includes a plurality of protrusions integral with and protruding from the interior surface of the second wall and substantially extending a distance 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;

a connecting wall that connects the first wall to the second wall across the span between the first wall and the second wall; and

a mouth prop molded in one piece and located at a first end of the main body portion; and

a suction connector integral with the main body portion and extending from the first end of the main body portion past the mouth prop, wherein the suction connector includes a cavity in communication with the interior space of the pocket.

REMARKS

Amendments to the Claims

Claims 3-12 and 15-24 are currently pending. Claims 11, 15-17, 19, 21, and 24 have been currently amended. Support for the amendments can be found in at least paragraphs [0033] and [0040] of the *Specification* and FIGs. 1E and 5. The amended claims reflect subject matter to which the Applicant believes it is entitled to claim. As such, no new matter has been added.

Rejections under 35 U.S.C. § 112

Claims 3-12 and 15-24 are rejected under 35 U.S.C. § 112(b) as being indefinite for failing to particularly point out and distinctly claim the subject matter. *Office Action,* 2. Specifically, claims 21 and 24 are rejected under 35 U.S.C. § 112(b) as being incomplete for omitting essential elements and essential structural cooperative relationships of elements. *Id.* at 2-3. Claim 21 has been amended in part as follows (emphasis added):

> a second wall **parallel to the first 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 distance 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;
>
> **a connecting wall that connects the first wall to the second wall across the span between the first wall and the second wall**;

The recited limitation, 'a connecting wall that connects the first wall to the second wall across the span between the first wall and the second wall' relates to an element between the first wall and the second wall. The recited limitation, 'parallel to the first wall' provides a positional relationship between the first wall and the second wall.

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.

Claims 11, 15-17, and 19 have been amended to clarify the antecedent basis in the claims. Withdrawal of the rejections under 35 U.S.C. § 112(b) is respectfully requested.

Rejections under 35 U.S.C. § 103

Claims 3-12, 15-18, and 20-24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Krouzian* (U.S. Patent 3,758,950) in view of *Schubert* (U.S. Patent 4,167,814). *Office Action* at 4. Claim 19 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Krouzian* in view of *Schubert* and further in view of *Hirsch* (U.S. Patent Publication 2003/134253). *Id.* at 8. Claims 5 and 22-23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Krouzian* in view of *Schubert* as applied to claim 21, and further in view of *Langhans* (U.S. Patent 2,019,612). *Id.* at 9. The Applicant respectfully disagrees and presents the following remarks.

Claim 21 recites as follows (emphasis added):

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

The recited limitations find support in the *Specification*, which describes "a bridge structure 180 on an interior surface" that includes a "wave-like protrusion that generally corresponds to the distance between the anterior and posterior walls extending substantially (within 1 mm) the full distance at its crest and substantially flush to the surface at its trough." *Specification* at [0040]. In addition, FIGs. 1E and 5 (provided below) illustrate views of such a 'bridge structure' as follows:

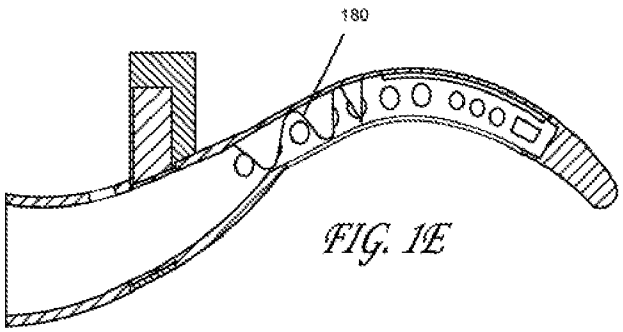


FIG. 1E

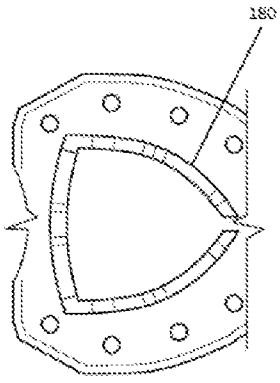


FIG. 5

The *Office Action* argues that "core 21" and "bars 24" of *Krouzian* disclose the claimed bridge structure. *Office Action* at 4. The Applicant respectfully disagrees.

The "circumferentially spaced bars 24" of *Krouzian* is completely inside of "core 21" as illustrated in FIGs. 5 and 6 of *Krouzian* below. *Krouzian*, [col. 4: l. 3-10]. In contrast, the claims recite that the protrusions of the bridge structure are 'protruding from an interior surface of the second wall.' The bars of *Krouzian* do not protrude from the core, which the *Office Action* regards is analogous to the claimed 'second wall.' See *Office Action* ("a second wall (core 21 and/or ring)"). Thus, *Krouzian* fails to disclose 'a bridge structure that includes a plurality of protrusions … protruding from an interior surface of the second wall' as claimed.

The bars 24 of *Krouzian* further fails to teach 'a plurality of protrusions …. substantially extending a distance between the first wall and the second wall' as claimed. The "core 21" of *Krouzian* is flush with the "outer member or envelop 27" as illustrated in FIGs. 5 and 6 of *Krouzian* below. *Id.* at [col. 4: l. 3-14]. Thus, *Krouzian* fails to disclose that there is 'a distance between the first wall and the second wall' as claimed. The "space 29 between the bars" of *Krouzian* is merely the space within the core 21, not 'between the first wall and second wall' as claimed. *Id.* Accordingly, the bars of *Krouzian* that are completely within the core cannot

disclose 'a plurality of protrusions .... substantially extending a distance between the first wall and the second wall' as claimed.

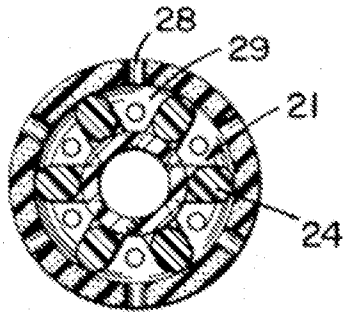


FIG_5

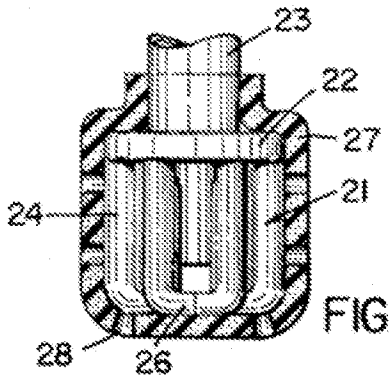


FIG_6

Alternatively, even if the claimed 'second wall' is analogous to "ring 22" of *Krouzian*, *Krouzian* fails to disclose the claimed bridge structure. *Office Action* at 4.

Krouzian discusses that the "circumferentially spaced bars 24 of the core are integral with ring 22." *Krouzian* at [col. 4: l. 3-10]. The "ring 22" and the "outer member or envelop 27" of *Krouzian* are perpendicular to each other, in contrast to the claimed 'a second wall parallel to the first wall.' *Id.* Therefore, the distance between the "ring 22" and the "outer member or envelop 27" of *Krouzian* is indecipherable. *Id.* Moreover, the bars 24 of *Krouzian* extends parallel to the envelope 27 and "have their extremities inturned at 26" along the envelope 27 of *Krouzian*. Thus, the bars 24 of *Krouzian* fail to disclose 'a plurality of protrusions .... substantially extending a distance between the first wall and the second wall' as claimed.

Moreover, the bars 24 of *Krouzian* do not describe 'a wave shape comprising one or more crests and one or more troughs' as claimed. The bars 24 of *Krouzian* protrudes from ring 22 in a cylindrical form rather than the claimed 'wave shape' as illustrated in FIGs. 5 and 6 of *Krouzian*. *Id.* Thus, *Krouzian* fails to disclose that '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.

Therefore, in either interpretation of *Krouzian*, *Krouzian* fails to disclose the claimed 'bridge structure.' Schubert only cited to discuss a mouth prop is completely silent regarding the claimed 'bridge structure.' Thus, *Krouzian* and Schubert, individually or in combination, fail to disclose 'the second wall comprising a bridge structure that include a plurality of protrusions integral with and protruding from an interior surface of the second wall and substantially extending a distance between the first wall and the second wall, wherein the bridge structure is not attached to the first wall, and wherein the protrusions of the bridge structure protrude from the interior surface of the second wall in a wave shape comprising one or more crests and one or more troughs' as claimed.

Hirsch and *Langhans* cited by the *Office Action* in relation to dependent claims cannot cure the deficiencies of *Krouzian* and *Schubert* with regards to the independent claims 21 and 24. *Office Action* at 8-9.

In view of the above remarks, the independent claim is patentable over the cited references. Furthermore, because each of the dependent claims incorporates by reference all the limitations of the independent claim from which it depends, the dependent claims are allowable for at least the same reasons. The Applicant therefore respectfully requests that the rejections of the claims under 35 U.S.C. § 103 be withdrawn.

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 29, 2021 By: / Ruby Chung /

Ruby Chung (76,809)
POLSINELLI *LLP*
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Phone: (415) 248-2121
patentdocketing@polsinelli.com

Electronic Patent Application Fee Transmittal

Application Number:	14228061
Filing Date:	27-Mar-2014
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
First Named Inventor/Applicant Name:	Thien Nguyen
Filer:	Ruby Lim Chung
Attorney Docket Number:	INCEP-001COE

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:	43383046
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
First Named Inventor/Applicant Name:	Thien Nguyen
Customer Number:	138718
Filer:	Ruby Lim Chung
Filer Authorized By:	
Attorney Docket Number:	INCEP-001COE
Receipt Date:	29-JUL-2021
Filing Date:	27-MAR-2014
Time Stamp:	21:17:31
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	E20217SL18411147
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	Request for Continued Examination (RCE)	INCEP-001COE_RCE_7-29-21.pdf	40449 16a8720724518db6ce64a63dd86ede3780c3a707	no	3
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
2		INCEP-001COE_Response_M.pdf	319771 28f202c30f131ebd91c0915645c875a02465a42d	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	6
Applicant Arguments/Remarks Made in an Amendment	7	12

Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	37605 c8550e7a5dd7623c48a9cd6aeeec5c830179d0ab	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	397825		

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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.

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	14228061
Filing Date	2014-03-27
First Named Inventor	NGUYEN; Thien
Art Unit	3772
Examiner Name	MAI, HAO D
Attorney Docket Number	084892-514248

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	14228061
	Filing Date	2014-03-27
	First Named Inventor	NGUYEN; Thien
	Art Unit	3772
	Examiner Name	MAI, HAO D
	Attorney Docket Number	084892-514248

Examiner Initial*	Cite No	Foreign Document Nu	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	None						☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Docket No. INCEP-001COA U.S. Application 14/228, 046; Non-Final Office Action mailed 10-6-21.	☐
	2	Docket No. INCEP-001COD U.S. Application 14/228, 057; Non-Final Office Action mailed 11-12-21.	☐
	3	Docket No. INCEP-006D U.S. Application 29/782,645; Non-Final Office Action mailed 10-4-21.	☐
	4	Docket No. INCEP-008D U.S. Application 29/782,638; Non-Final Office Action mailed 10-4-21.	☐
	5	Docket No. INCEP-009D U.S. Application 29/782,644; Non-Final Office Action mailed 10-4-21.	☐
	6	Docket No. INCEP-010D U.S. Application 29/782,643; Non-Final Office Action mailed 10-4-21.	☐
	7	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).	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	14228061
	Filing Date	2014-03-27
	First Named Inventor	NGUYEN; Thien
	Art Unit	3772
	Examiner Name	MAI, HAO D
	Attorney Docket Number	084892-514248

	8	"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).	☐
	9	"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).	☐
	10	"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	14228061
	Filing Date	2014-03-27
	First Named Inventor	NGUYEN; Thien
	Art Unit	3772
	Examiner Name	MAI, HAO D
	Attorney Docket Number	084892-514248

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 3772 Examiner: Hao D. Mai

Serial No.: 14/228,061 Filed: March 27, 2014

In re Application of: Thien Nguyen

Confirmation No.: 6191 Customer No.: 138718

Title: INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP

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: 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:	44357731
Application Number:	14228061
International Application Number:	
Confirmation Number:	6191
Title of Invention:	INTRAORAL DEVICE WITH DETACHABLE MOUTH PROP
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-001COE
Receipt Date:	24-NOV-2021
Filing Date:	27-MAR-2014
Time Stamp:	12:39:56
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)	084892-514248_0_IDS_20211123171500.pdf	41529 f9c5342ec158bf392146cea576206e8ca53a3295	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
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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-001COA_Non-Final_OA_10-6-21.pdf	526170 c2406b4263281a5ff8f7cd864ed793541231a2f9	no	15
Warnings:					
Information:					
7	Non Patent Literature	INCEP-001COD_Final_OA_11-12-21.pdf	579142 7e941dd719959a82e0d1a131cc95335440bc936c	no	17
Warnings:					
Information:					
8	Non Patent Literature	INCEP-006D_Non-Final_OA_10-4-21.pdf	322509 b8e34497b38b6ff0e5c500a95f1b1ae493c1f6f6	no	8
Warnings:					
Information:					

9	Non Patent Literature	INCEP-008D_Non-Final_OA_10-4-21.pdf	345010 a2253192a0b2fc8d5d0ddd2d8c811acabb46edcb	no	8
Warnings:					
Information:					
10	Non Patent Literature	INCEP-009D_Non-Final_OA_10-4-21.pdf	560115 85a10db6f46ac9cdf5c02cb98ee26951cc94362c	no	9
Warnings:					
Information:					
11	Non Patent Literature	INCEP-010_Non-Final_OA_10-4-21.pdf	520616 fd068d9e31c18699763c4c19f4c5558b6e90298a	no	8
Warnings:					
Information:					
12	Transmittal Letter	INCEP-001COE_IDS_Statement_11-24-21.pdf	96058 3360254d752afae00ecc7d94f8d2e9849746d27e	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	4611753	

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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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

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 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.
14/228,061	03/27/2014	Thien Nguyen	INCEP-001COE	6191

138718 7590 12/08/2021

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

EXAMINER	
MAI, HAO D	

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
12/08/2021	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. 14/228,061	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 11/24/2021.

☐ 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) 3-12 and 15-24 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) 3-12 and 15-24 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 07/29/2021 has been entered.

Claim Rejections - 35 USC § 112(a)

3. The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

> (a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. **Claims 3-12 and 15-24** are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for applications subject to pre-AIA 35 U.S.C. 112, the inventor(s), at the time the application was filed, had possession of the claimed invention.

Independent claims 21 and 24 each newly recites "a second wall parallel to the first wall" (line 5) which is not supported by the originally filed disclosure and therefore is considered to be new matter. Note that neither the original written specification nor the drawings indicate the second wall being parallel to the first wall. On the contrary, the drawings Fig. 2E shows the first and second walls (top and bottom walls) being non-parallel.

All dependent claims are rejected herein based on dependency.

Claim Rejections - 35 USC § 112(b)

5. 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.

6. **Claims 3-12 and 15-24,** 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 24 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being incomplete for omitting essential elements and/or essential structural relationships, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: corresponding exterior edges of the first wall and the second wall, wherein the connecting wall connecting the first wall to the second wall along the exterior edges thereof.

Claim 15 recites "protrusions" (line 2) without any referential article (e.g. "said", "the"). It is unclear whether such "protrusions" are the same, different from, or part of the "protrusions" previously recited in base claim 21.

Claims 15 recites "crests" (line 2) without any referential article (e.g. "said", "the"). It is unclear whether such "crest" are the same, different from, or part of the "one or more crests" previously recited in base claim 21.

Claims 16 recites "troughs" (line 2) without any referential article (e.g. "said", "the"). It is unclear whether such "troughs" are the same, different from, or part of the "one or more troughs" previously recited in base claim 21.

Claim 21 recites "A mouth piece comprising: a main body portion…, the pocket defined by: a first wall…, a second wall…; a connecting wall: ***and*** a suction connector". It is unclear whether the suction connector is part of or defines the pocket (i.e. part of the main body portion) or part of the mouthpiece.

Claim 24 recites "A mouth piece comprising: a main body portion…, the pocket defined by: a first wall…, ***and*** a second wall…; a connecting wall: ***and*** a mouth prop…; ***and*** a suction connector…" It is unclear whether the connecting wall defines the pocket (i.e. part of the main body portion) or part of the mouthpiece. It is unclear whether the

mouth prop defines the pocket (i.e. part of the main body portion) or part of the mouthpiece.

All dependent claims are rejected herein based on dependency.

Claim Rejections - 35 USC § 103

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

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

8. **Claims 3-4, 6-12, 15-18, and 20-24, are rejected under 35 U.S.C. 103(a) as being unpatentable over Krouzian (3,758,950) in view of Schubert (4,167,814),**

Regarding claim 24, Krouzian discloses mouthpiece (Figs. 4-6) comprising: a main body portion 27/21 configured as a pocket 29 having an interior space 29, the pocket defined by: a first wall (best pointed by reference numeral 28 in Fig. 6) having an interior surface facing the interior space 29 of the pocket, and a second wall 22 having an interior surface facing the interior surface of the first wall 28 (Fig. 6).

The second wall 22 is parallel to the first wall 28 (Fig. 6). The second wall 22 comprises a bridge structure 21 that includes a plurality of protrusions 24 integral with and protruding from the interior surface of the second wall 21 and substantially extending a distance between the first wall 27 and the second wall 21/22. The bridge structure 24 is not attached to the first/outer wall 27, wherein the protrusions 24 of the bridge structure protrude from the interior surface of the second wall in a wave shape

comprising one or more crests (bars 24) and one or more troughs (between bars 24). See Figs. 5-6; column 4 lines 3-14.

Krouzian further discloses a suction connector (neck portion best pointed to by reference number 17 in Fig. 1) that is integral with the main body portion 27/21 and extending from a first end of the main body portion. The suction connector (neck portion of outer member 27) includes a cavity (that receives suction tube 23); the cavity/bore is in communication with the interior space of the pocket 29 (Figs. 4-6).

Krouzian fails to disclose a mouth prop as claimed. **Schubert** discloses a mouthpiece 10 and a mouth prop 30/32. The mouthpiece 10 has a main body portion (tube 12) and a suction connector 18 integral with the main body portion 12 and extending from a first end 17 of the main body portion 12 past the mouth prop 30/32. The mouth prop 30-32 is shown as one piece and located at a first end the main body portion. The suction connector 18 is shown being integral with the main body portion (tube 12) and extending from the first end of the main body portion past the mouth prop 30/32. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include such mouth prop as taught by Schubert into Krouzian's suction mouth piece device in order to keep the mouth open.

Regarding claim 21, Krouzian/Schubert discloses the invention substantially as claimed as detailed above with respect to claim 24. Particularly, Krouzian discloses the suction connector (neck portion 17 shown in Fig. 1) includes a cavity (bore) extending longitudinally from the main body portion, in communication with the interior space of the pocket 29 and extending from a first opening (opening into the pocket 29) through a

length of the suction connector toward a suction port opening (opening that receives 23) opposite from the main body portion. **Schubert** discloses a mouthpiece 10 and a mouth prop 30/32. The mouthpiece 10 has a main body portion (tube 12) and a suction connector 18 integral with the main body portion 12 and extending from a first end 17 of the main body portion 12 past the mouth prop 30/32. The mouth prop 30-32 is shown as one piece and located at a first end the main body portion. The suction connector 18 is shown being integral with the main body portion (tube 12) and extending from the first end of the main body portion past the mouth prop 30/32. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to include such mouth prop as taught by Schubert into Krouzian's suction mouth piece device in order to keep the mouth open.

As to claims 3-4, Schubert's incorporated mouth prop comprises an elastic/resilient strap portion 32 and a bite block portion 30 molded into one piece (Fig. 1; column 2 lines 36-46). The strap portion 32 corresponds to a circumference of the suction connector 17/18 of, wherein a cross section of an opening of the stracp portion is parallel to the cross section of the first opening and suction portion opening of the suction connector 17/18. A first edge/side and a second edge/side of an external surface of the strap portion 32 are adjacent to an external surface of the suction connector 17/18, and wherein the first edge/side is opposite the second edge/side, wherein the suction connector 17/18 extends through and past the strap portion 32 (Figs. 1-3). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to connect such mouth prop to a a mouth

piece device utilizing the strap elastic/resilient strap portion corresponding to the circumference of the suction connector as a suitable connection as explicitly taught by Schubert with reasonable expectation of success.

As to claims 6-7, Krouzian shows the suction connector 17 comprises an external plug protrusion 17 (Figs. 1 and 4). Likewise, Schubert shows the suction connector 17/18 comprises an external plug protrusion 18 corresponding to an opening (of strap 32) in the bite block portion 30/32 providing additional crush-resistance and decreased compressibility during biting by a patient. It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Krouzian by incorporate Shubert's bite prop with the connection of the plug protrusion fits into the opening of the bite block portion as a suitable alternative connection of such mouth prop and mouthpiece.

As to claim 8, Krouzian shows the suction connector 17 having a cutout (opening bore thereof) corresponding to a protrusion 13 on a vacuum adapter for an interlocking fit. Note that the vacuum adapter and the any limitation (e.g. protrusion) thereof are not positively claimed as an element of the invention and therefore is not given patenable weight. As to claim 9, Krouzian shows the suction connector 17 connects the interior of the pocket 29 to a vacuum source 13/23, wherein activation of the vacuum source provides suction of fluids from the interior of the pocket toward the vacuum source (Figs. 1 and 4). As to claims 10-11, Krouzian shows at the least the wall 27 comprising a plurality of perforations 28, wherein activation of a vacuum source associated with the main body draws fluids from an exterior of the main body through the perforations into the interior of the pocket 29 of the main body. As to claim 12, Krouzian fails to disclose

a cheek retractor portion. Schubert discloss a cheek retractor portion 28 (Fig. 1). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Krouzian by including such cheek retractor as taught by Schubert in order to effectively retract the cheek.

As to claim 15-16, Krouzian's bridge structure 21/24 comprise spaced protrusions 24 at crests of the wave shape, and spaces therebetween are at troughs of the waveshape. As to claim 17, one of the bars 24 is a stability bar protruding from the second wall 21/22 and along a longitudinal axis of the main body. As to claim 18, 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, Krouzian shows at least the wall 21/22 is of molded plastic (column 4 lines 3-14); and the mouthpiece is one piece as a whole. The burden is shifted to applicant to show an unobvious difference between Krouzian' device and the invention that would have resulted from the injection molding process.

As to claim 20, the incorporated Shubert's mouth prop is detachable and therefore is interchangeable with another/second mouth prop. Note that the second mouth prop is not actively claimed and therefore is not given patentable weight.

9. **Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krouzian in view of Schubert and further in view of Hirsch et al. (2003/0134253).**

Regarding claim 19, Krouzian/Krouzian fails to disclose the material forming the device being autoclavable silicone-based material. Hirsch discloses a mouthpiece device that is formed of a flexible, translucent, high heat-resistant, autoclavable silicone-based material of Pebax (paragraph 49). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Krouzian/Schubert by forming the mouthpiece device from flexible, translucent, high heat-resistant, autoclavable silicone-based material of Pebax as taught by Hirsch et al. to be a suitable alternative thermoplastic material for such mouth piece devices.

10. **Claims 5 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krouzian et al. in view of Schubert, as applied to claim 21 as detailed above, and further in view of Langhans (2,019,612).**

As to claims 5 and 22-23, Krouzian/Schubert, particularly Schubert fails to disclose the suction connector portion 1718 comprising a notch region corresponding to the strap portion 32. **Langhans** discloses a connection between a strap 34 and a cylindrical-shape connector 24, wherein an external surface of the cylindrical-shape connector portion 24 comprises a notch region (best pointed to by reference numeral 22 in Fig. 2); the notch region separating the external surface into a first surface and a second surface and defining an interior surface (base surface of notch) couple to the first surface by a first side wall (side surface of notch) and coupled to the second surface by a second side wall (other side surface of notch). As to claims 22-23,

Langhans shows the strap portion 34 sits in the notch region when attached around the circumference of the cylindrical connection portion 24, and the strap portion 34 has a thickness corresponding to a height of the first side wall and the second side wall so that the strap potion 34 is flush with both the first surface and the second surface of cylindrical connection portion 24, and the strap portion 34 is adjacent to the interior notch region interior surface (Figs. 1-3; page 2 first column lines 31-35). It would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify Krouzian/Schubert by substituting Schubert's snap-on connection between the strap and the cylindrical shape connector with Langhans' notch-strap connection between the strap and the cylindrical shaped connector in order to obtain a smooth flushing exterior surface at the connection area as taught by Langhans.

Response to Arguments

11. Applicant's arguments regarding the amendment made to the claims have been fully considered but are moot in view of the new ground(s) of rejection under Krouzian et al. as detailed above. Applicant's remarks regarding the amendments made to the claims are held to be responded in the above ground(s) of rejection.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hao D. Mai whose telephone number is (571) 270-3002. The examiner can normally be reached on Monday-Friday 8:00AM –

4:30PM. If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, Cris Rodriguez, at (571) 272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hao D Mai/
Examiner, Art Unit 3772

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,061	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61C 17/043, 046	11/16/2015	HDM
A61C 17/04, 0208	06/20/2016	HDM
Update Search	06/20/2016	HDM
Update Search	07/08/2019	HDM
Update Search	01/06/2020	HDM

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

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

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

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,061	Nguyen et al.
	Examiner	Art Unit
	HAO D MAI	3772

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor Search	11/16/2015	HDM
Review searches of parent case 14/100323	11/16/2015	HDM
Update Search	06/20/2016	HDM
Update Search	02/20/2017	HDM
Update Search	10/16/2017	HDM
Update Search	09/30/2018	HDM
Update Search	07/08/2019	HDM
Update Search	01/06/2020	HDM
Update Search	11/21/2020	HDM
Update Search	04/24/2021	HDM
Update Search	12/04/2021	HDM

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

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/228,061	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	12/04/2021								
	1	-								
	2	-								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
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	21	✓								
	22	✓								
	23	✓								
	24	✓								

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	6	("20040033468" | "20140349249" | "3453735" | "3516160" | "D364456" | "D663831").PN.	US-PGPUB; USPAT	ADJ	OFF	2021/12/04 10:32
L3	2	(("4167814") or ("3758950")).PN.	US-PGPUB; USPAT	OR	OFF	2021/12/04 10:39
L4	3,719	A61C17/0208,08.cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2021/12/04 10:40
L5	18	A61C17/0208,08.cpc. and (prevent$3 with collapse)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2021/12/04 10:41
L6	25	A61C17/0208,08.cpc. and (prevent$3 with collaps$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2021/12/04 10:41

EAST Search History (Interference)

<This search history is empty>

12/4/2021 10:56:21 AM
C:\Users\hmai1\Documents\EAST\Workspaces\14228061.wsp

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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	14228061
Filing Date	2014-03-27
First Named Inventor	NGUYEN; Thien
Art Unit	3772
Examiner Name	MAI, HAO D
Attorney Docket Number	084892-514248

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14228061
	Filing Date	2014-03-27
	First Named Inventor	NGUYEN; Thien
	Art Unit	3772
	Examiner Name	MAI, HAO D
	Attorney Docket Number	084892-514248

Examiner Initial*	Cite No	Foreign Document Nu	Country Code[2]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	None						☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Docket No. INCEP-001COA U.S. Application 14/228, 046; Non-Final Office Action mailed 10-6-21.	☐
	2	Docket No. INCEP-001COD U.S. Application 14/228, 057; Non-Final Office Action mailed 11-12-21.	☐
	3	Docket No. INCEP-006D U.S. Application 29/782,645; Non-Final Office Action mailed 10-4-21.	☐
	4	Docket No. INCEP-008D U.S. Application 29/782,638; Non-Final Office Action mailed 10-4-21.	☐
	5	Docket No. INCEP-009D U.S. Application 29/782,644; Non-Final Office Action mailed 10-4-21.	☐
	6	Docket No. INCEP-010D U.S. Application 29/782,643; Non-Final Office Action mailed 10-4-21.	☐
	7	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).	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

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	Attorney Docket Number	084892-514248

	8	"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).	☐
	9	"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).	☐
	10	"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	/Hao D Mai/	Date Considered	12/04/2021

*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.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

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Art Unit	3772
Examiner Name	MAI, HAO D
Attorney Docket Number	084892-514248

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.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /HDM/

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.

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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