

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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ABSOLUTE DENTAL SERVICES, INC.,

Petitioner

v.

WATSON GUIDE IP, LLC,

Patent Owner

*Inter Partes* Review No. IPR2023-00177

U.S. Patent No. 11,173,016

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 11,173,016

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### **LIST OF EXHIBITS**

<b>Exhibit</b>	<b>Short Name</b>	<b>Description</b>
1001	'016 Patent	U.S. Patent No. 11,173,016
1002	Prosecution History	File History of U.S. Patent No. 11,173,016
1003	'255 Llop	U.S. Publication No. US2016/0038255
1004	Zerhat	Certified Translation of International Publication No. WO 2010/061124 A1
1005	Declaration	Declaration of Doctor Yaste
1006	Wong	Natalie Y. Wong, <i>Predictable Immediate Implant Prosthetics Using Guided Surgery and Guided Prosthetics: A Case Report</i> , Oral Health Group (Jan. 7, 2016), <a href="https://www.oralhealthgroup.com/features/1003918999/">https://www.oralhealthgroup.com/features/1003918999/</a> .
1007	'881 Llop	U.S. Publication No. US2015/0010881
1008	'881 Groscurth	U.S. Publication No. US2013/0071811
1009	'778 Llop	U.S. Publication No. US2014/0272778
1010	Dr. Yaste CV	Curriculum Vitae of Dr. Christian Yaste
1011	Original Zerhat	International Publication No. WO 2010/061124 A1
1012	Charette	Jyme R. Charette, DMD et al., <i>Cone Beam Computed Tomography Imaging as a Primary Diagnostic Tool for Computer-Guided Surgery and CAD-CAM Interim Removable and Fixed Dental Prostheses</i> , 116 J. of Prosthetic Dentistry 157 (2016).
1013	Pikos	Michael A. Pikos, DDS et al., <i>Guided Full-Arch Immediate-Function Treatment Modality for the Edentulous and Terminal Dentition Patient</i> , 36 Compendium of Continuing Educ. in Dentistry 116 (2015), <a href="https://www.aegisdentalnetwork.com/cced/2015/02/guided">https://www.aegisdentalnetwork.com/cced/2015/02/guided</a>



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		<a href="#"><u>-full-arch-immediate-function-treatment-modality-for-the-edentulous-and-terminal-dentition-patient.</u></a>
1014	Alzoubi	Fawaz Alzoubi, BDM, MA, EdD, FAGD, FAAID et al., <i>Bone Reduction to Facilitate Immediate Implant Placement and Loading Using CAD/ CAM Surgical Guides for Patients with Terminal Dentition</i> , 42 J. of Oral Implantology 406 (2016), <a href="https://meridian.allenpress.com/joi/article-pdf/42/5/406/2040130/aaid-joi-d-16-00016.pdf"><u>https://meridian.allenpress.com/joi/article-pdf/42/5/406/2040130/aaid-joi-d-16-00016.pdf</u></a> .
1015	Harris	Bryan T. Harris, DMD et al., <i>Creation of a 3-Dimensional Virtual Dental Patient for Computer-Guided Surgery and CAD-CAM Interim Complete Removable and Fixed Dental Prostheses: A Clinical Report</i> , 117 J. of Prosthetic Dentistry 197 (2017).
1016	Pikos Video Clip	Pikos Video Clip
1017	LearnLOCATOR Video Clip	LearnLOCATOR Video Clip
1018	LearnLOCATOR Video Screenshots	LearnLOCATOR Video Screenshots
1019	Surgical Guide Options	Surgical Guide Options
1020	IBUR	<i>Mandible Virtually Planned Surgery by Dr. Robert Faulkner (Cincinnati, OH)</i> , IBUR Biosystems, <a href="https://web.archive.org/web/20170322125810/http://www.iburbiosystems.com/gallery"><u>https://web.archive.org/web/20170322125810/http://www.iburbiosystems.com/gallery</u></a> .
1021	'592 Application	U.S. Publication No. US2017/0112592
1022	'072 Application	U.S. Patent No. 9,381,072
1023	Swennen	<i>3D Virtual Treatment Planning of Orthognathic Surgery</i> (Gwen R.J. Swennen ed., 2017).
1024	Rinaldo	Marco Rinaldo et al., <i>Computer-Guided Applications for Dental Implants, Bone Grafting, and Reconstructive Surgery</i> , 279–291 (2015).

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1025	'635 Patent	U.S. Patent No. 8,282,635
1026	'889 Patent	U.S. Patent No. 8,662,889
1027	Original Publication	Ger. Publication No. DE 102006031808 A1
1028	German Publication	Certified Translation of Ger. Publication No. DE 102006031808 A1
1029	Original China Publication	China Publication No. CN105686886A
1030	China Publication	Certified Translation of China Publication No. CN105686886A
1031	Zhang	Nan Zhang, DDS et al., <i>Accuracy of Virtual Surgical Planning in Two-Jaw Orthognathic Surgery: Comparison of Planned and Actual Results</i> , 122 Oral Surgery Oral Med. Oral Pathology Oral Radiology 143 (2016).
1032	Kai Hu	Ying Kai Hu, PhD et al., <i>Computer-Designed Surgical Guide Template Compared with Free-Hand Operation for Mesiodens Extraction in Premaxilla Using “Trapdoor” Method</i> , 96 Medicine, June 2017.
1033	'283 Publication	International Publication No. WO 2009/115283 A1

## **I. INTRODUCTION**

Absolute Dental, Inc. ("Petitioner") requests *inter partes* review ("IPR") of certain claims of U.S. Patent No. 11,173,016 (the "'016 Patent") assigned to Watson Guide IP, LLC ("Patent Owner"). This Petition presents non-cumulative grounds of invalidity not considered during prosecution. These grounds are likely to prevail. Specifically, claims 1–10 and 12–13 (the "Challenged Claims") should be cancelled.

The '016 Patent claims a device and methods for guided oral surgery resulting in dental prosthesis. However, numerous prior art anticipated and/or rendered the Challenged Claims obvious. Specifically, prior art disclosed surgical guides used in the process for installing dental prosthesis where the base device sits only *in front of (outside of)* the jawbone. During prosecution, Patent Owner relied solely upon this feature to overcome the prior art.

## **II. MANDATORY NOTICES**

### **a. Real Party in Interest (37 C.F.R. § 42.8(b)(1)):**

The real parties-in-interest of this Petition pursuant to 37 C.F.R. Section 42.8(b)(1) are Absolute Dental Services, Inc., Watson Guide IP, LLC, and potentially ROE Dental Laboratory, Inc. who is named as a co-plaintiff with Watson.

### **b. Related Matters (37 C.F.R. § 42.8(b)(2)):**

The '016 Patent is being asserted in a pending case by Patent Owner against Petitioner: *Watson Guide IP, LLC & Roe Dental Laboratory, Inc. v. Absolute Dental*

*Services, Inc.*, Civil Case No. 22-cv-00558 (M.D.N.C.) (Complaint served August 16, 2022, alleging patent infringement).

**c. Lead and Backup Counsel (37 C.F.R. § 42.8(b)(3) and (4)):**

Petitioner appoints as lead counsel Ryan A. Simmons (Reg. No. 45,848), and Joseph A. Schouten (*Pro Hac Vice* to be submitted) as backup counsel, all at Ward and Smith, P.A., 751 Corporate Center Drive, Suite 300 Raleigh, NC 27607, phone 919-277-9100.

Petitioner consents to electronic service by email at:

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Please address all correspondence to lead and backup counsel at Ward and Smith, P.A., 751 Corporate Center Drive, Suite 300, Raleigh, NC 27607, with a courtesy copy to: docket@wardandsmith.com

**III. FEES AUTHORIZATION**

Under 37 C.F.R. § 42.103, the Office is authorized to charge the fee set forth in § 42.15(a), and any other fees due in connection with this Petition, to Deposit Account No. 503976.

**IV. GROUNDS FOR STANDING**

Under 37 C.F.R. §§ 42.102(a)(2) and 42.104(a), Petitioner certifies that the '016 Patent is available for IPR, this Petition is timely filed, and Petitioner is not barred or estopped from requesting this IPR.

## V. CLAIM LISTING OF THE CHALLENGED CLAIMS

**Claim 1 [Preamble].** A method of installing a multi-tooth dental prosthesis in a maxillary or mandibular position in a mouth of a patient,

- 1[a] the method comprising: providing a dental prosthesis for the maxillary or mandibular positioning in the patient's mouth,
- 1[b] utilizing a fixation base to serve as a mounting jig for a plurality of other dental guides comprising a first dental guide, a second dental guide, and a third dental guide, wherein the fixation base comprises a generally arcuate shape with a front surface that has a plurality of openings through which fasteners can be passed, a rear surface, and a horizontal surface bearing first attachment elements for engagement of the dental guides used in the prosthesis installation, wherein the fixation base is configured and dimensioned to fit only in front of the maxillary or mandibular bone structure of said patient and itself does not include any portion which would otherwise extend in back of the maxillary or mandibular bone structure of said patient;
- 1[c] utilizing the first dental guide, wherein the first dental guide is a mouthpiece that attaches to the fixation base and is used to assure appropriate location to attach the fixation base to the maxillary or mandibular bone tissue of said patient;
- 1[d] installing the fixation base to the maxillary or mandibular bone tissue of said patient;
- 1[e] removing the mouthpiece from the installed fixation base;
- 1[f] removing at least one of natural teeth, dental fixtures, and obstructive mouth tissues from the work site, to expose an underside of the maxillary or mandibular bone tissue;
- 1[g] recontouring the bone tissue;
- 1[h] utilizing the second dental guide, wherein the second dental guide is a drill guide that attaches to the installed fixation base to assure appropriate location and orientation of holes to be drilled for the subsequently installed implants;
- 1[i] drilling the implant holes in the recontoured bone tissue using the drill guide attached to the fixation base;
- 1[j] removing the drill guide from the installed fixation base;

- 1[k] utilizing the third dental guide, wherein the third dental guide is an abutment guide base that attaches to the installed fixation base to assure appropriate location for the subsequently installed abutments;
- 1[l] installing the abutments, using the abutment guide base attached to the fixation base; and,
- 1[m] installing said dental prosthesis to the abutments.

**Claim 2.** The method of claim 1, wherein installing the fixation base to maxillary or mandibular bone tissue of the patient further comprises:

- drilling holes into the exposed forwardly facing surfaces of the bone tissue through the plurality of openings in the fixation base, and
- driving fasteners through the fixation base into the drilled holes, to secure the fixation base to the maxillary or mandibular bone.

**Claim 3.** The method of claim 1, wherein the step of recontouring the bone tissue comprises using a preformed surface on the installed fixation base to assure proper recontouring of the bone tissue.

**Claim 4.** The method of claim 1, wherein the step of recontouring the bone tissue comprises utilizing a fourth guide apparatus, wherein the fourth guide apparatus is a bone reduction guide that attaches to the installed fixation base to assure proper recontouring of the bone tissue.

**Claim 5.** The method of claim 1, wherein installing the abutments includes adjusting the abutments to appropriate angular orientations relative to a central axis of associated implants using pre-established indicators in the abutment guide base.

**Claim 6 [Preamble].** An apparatus for installing a dental prosthesis to maxillary or mandibular jaw bone of a patient, the apparatus comprising:

- 6[a] a fixation base for providing an attachment surface for a dental guide used during a dental prosthesis installation procedure,
- 6[b] the fixation base further comprising a generally arcuate base member
- 6[c] with a front surface that includes a plurality of openings through which fasteners can be passed,
- 6[d] a rear surface,
- 6[e] a horizontal surface, and
- 6[f] manually releasable attachment elements for attachment of a dental guide used during a prosthesis installation to the fixation base,

6[g] wherein the fixation base is configured and dimensioned to fit only in front of the maxillary or mandibular bone structure of a patient and which fixation base itself does not include any portions which would otherwise extend in back of the maxillary or mandibular bone structure of a patient.

**Claim 7.** The apparatus of claim 6, wherein the manually releasable attachment elements of the fixation base includes:

- a plurality of slots in said horizontal surface of said fixation base for accepting tabs located on the dental guide; and
- bores and bosses extending radially from the front surface of said fixation base.

**Claim 8.** The apparatus of claim 6, further comprising a first dental guide, wherein the first dental guide is a mouthpiece configured and dimensioned to surround teeth of the patient and to releasably attach to the fixation base and to be removed after the fixation base is affixed to the maxillary or mandibular bone structure of a patient.

**Claim 9.** The apparatus of claim 6, wherein the manually releasable attachment elements of the fixation base includes a plurality of slots in the horizontal surface of said base member of the fixation base, wherein the dental guide includes a plurality of tabs extending toward and fitting closely with the slots of the fixation base, whereby the dental guide engages the fixation base by interfit between the slots of the fixation base and the tabs of the guide apparatus.

**Claim 10.** The apparatus of claim 6, further comprising a second dental guide, wherein the second dental guide is a drill guide for guiding drilling of holes for the implants, the drill guide attachable to the fixation base in a position wherein the drill guide is in vertical registry with the maxillary or mandibular jaw bone, the drill guide including a seating feature cooperating with the attachment elements of the fixation base, and a plurality of generally vertical bores corresponding in location to and in axial registry with intended implant sites.

**Claim 12.** The apparatus of claim 6, further comprising a third dental guide, wherein the third dental guide is an abutment guide base including:

- bores sized and oriented to receive abutments and guide the abutments for placement against the implants, and wherein
- the abutment guide base is attachable to the fixation base in a position wherein the bores are in vertical registry with the maxillary or mandibular jaw bone and the implants.

**Claim 13 [Preamble].** A method of installing a fixation base in a maxillary or mandibular position in a mouth of a patient, the method comprising:

- 13[a] obtaining anatomical data of at least some of the surfaces of the maxillary or mandibular portion of the mouth of the patient;
- 13[b] utilizing a fixation base, wherein the fixation base comprises a generally arcuate shape with a front surface that has a plurality of openings through which fasteners can be passed through, a rear surface, and attachment elements, wherein the fixation base is configured and dimensioned to fit only in front of the maxillary or mandibular bone structure of a patient and itself does not include any portion which would otherwise extend in back of the maxillary or mandibular bone structure of a patient;
- 13[c] utilizing a mouthpiece generated at least in part from the obtained anatomical data;
- 13[d] attaching the mouthpiece to the fixation base using said attachment elements;
- 13[e] installing the mouthpiece onto at least some surfaces of the maxillary or mandibular portion of the mouth of the patient to assist in positioning the fixation base appropriately prior to installing the fixation base to maxillary or mandibular bone tissue of the patient;
- 13[f] installing the fixation base to the maxillary or mandibular portions of the patient using fasteners through said plurality of openings in said front surface of the fixation base; and
- 13[g] detaching the mouthpiece from the fixation base using said attachment elements.

## **VI. PRECISE RELIEF REQUESTED**

Under 37 C.F.R. § 42.104(b), Petitioner requests review and cancellation of the Challenged Claims under 35 U.S.C. §§ 102 and 103 based on:

<b>Ground</b>	<b>Claims</b>	<b>Basis under 35 U.S.C.</b>
1	6 and 10	<b>§ 102 and § 103:</b> Zerhat
2	1–3, 5–10, and 12–13	<b>§ 103:</b> '255 Llop in view of Zerhat
3	1–3, 5–10, and 12–13	<b>§ 103:</b> Wong in view of Zerhat
4	4	<b>§ 103:</b> '255 Llop and/or Wong in view of Zerhat and further in view of '881 Llop



The references relied upon are prior art:

Reference	35 U.S.C. §	Qualifying Date ('016 Patent Priority Date is May 18, 2017)
Zerhat	102(a) & 103	6/3/2010
'255 Llop	103	2/11/2016
Wong	103	1/7/2016
'881 Llop	103	1/8/2015

Zerhat and Wong were not cited during prosecution. Ex. 1001, cover page. The Examiner utilized the other references to initially reject the Challenged Claims. Patent Owner *did not* traverse the Examiner's rejection of the Challenged Claims. Instead, Patent Owner amended its independent claims to add the limitation of the base device fitting exclusively "*in front of*" or "*outside*" the jawbone. Patent Owner relied upon that added limitation to overcome the prior art. However, Zerhat discloses this limitation.

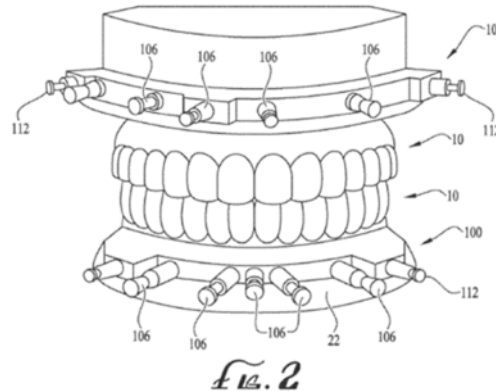
## **VII. INFORMATION CONCERNING THE CONTESTED PATENT**

### **a. Effective Filing Date**

The '016 Patent was filed on May 18, 2018, and issued on November 16, 2021. Ex. 1001, cover page. Its earliest priority date is May 18, 2017.

### **b. Description of the Alleged Invention**

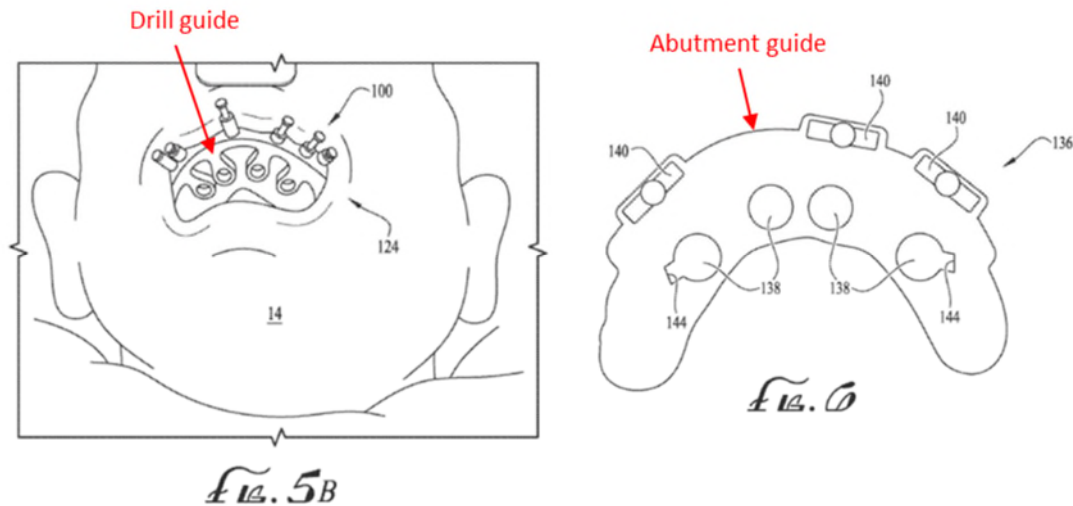
The '016 Patent discusses an "[a]pparatus and method[s] for installing a multi-tooth dental prosthesis[.]" Ex. 1001, Abstract. The '016 Patent describes a guided oral surgery procedure for installing dental prosthesis. *Id.* Figure 2 is illustrative:



A "fixation base" (100) is attached to a patient's jawbone. *Id.* at 1:34–39; Fig. 1. Additional guides are attached to the fixation base for the procedure. *Id.* at 1:34–36, 4:24–26. The fixation base is positioned for attachment to the jawbone using a "mouthpiece" (112). *Id.* at 1:39–41, 5:3–7; Fig. 4.

The practitioner attaches various "guides" to the fixation base using "releasable attachment elements[.]" *Id.* at 1:53, 1:59, 5:46–48, 4:56–67, 5:1–2. These include: a "drill guide" (124), Ex. 1001 at 1:59–60, Fig. 5A, Fig. 5B, and an "abutment guide" (136), *Id.* at 1:53–54; Fig. 6.

The drill guide confirms proper location of drill holes in the patient's mouth. Ex. 1001 at 1:59–61, 5:13–14. The practitioner then installs implants into the drilled holes. *Id.* at 1:61. The abutment guide is used to place abutments. *Id.* at Abstract, 1:55–57. Figures<sup>1</sup> 5B and 6 illustrate the drill guide and abutment guide, respectively:



The practitioner can then place the prosthetic. *Id.* at 2:1–6.

### c. Prosecution History

#### i. The March Office Action

On March 19, 2020, the Examiner rejected claim 13 (now claim 6) as anticipated by each of '255 Llop and '778 Llop. Ex. 1002 at 134, 136–141, 141–42. Additionally, the Examiner rejected claim 1 (now, in part, claim 1) as obvious over '255 Llop in view of another reference. *Id.* at 143–46. The Examiner concluded that

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<sup>1</sup> Petitioner's annotations are shown with red lines and words.

'255 Llop disclosed all the elements of claim 1 except one. *Id.* This element was amended out of claim 1 prior to issuance. *Id.* at 173.

**ii. Response to the March Office Action**

Patent Owner filed an Amendment ("Amendment"). *Id.* at 171. The Amendment limited claims 1 and 13 (now claims 1 and 6) as follows:

the fixation base is configured and dimensioned to fit ***only in front of*** the maxillary or mandibular bone structure of a patient and [which fixation base] itself does not include any portion[s] which would otherwise extend in back of the maxillary or mandibular bone structure of a patient

*Id.* at 173.<sup>2</sup>

The Amendment was Patent Owner's only material response to the prior art rejections. Patent Owner argued the cited references did not disclose that the "fixation base only sits on the ***outside of the jaw.***" Ex. 1002 at 178–182. This limitation is the only reason the '016 Patent was allowed over the cited prior art. *Id.* Although this limitation was not disclosed in the cited art, it was disclosed in Zerhat—which was not cited.

**iii. Other Relevant Prosecution History**

Patent Owner filed another Amendment ("May Amendment"). *Id.* at 216. The May Amendment changed the "first attachment elements" in claim 13 (now claim 6)

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<sup>2</sup> Unless otherwise indicated, all emphasis has been added by Petitioner.

to "manually releasable attachment elements[.]" *Id.* at 224, 253. For support, Patent Owner referred to the specification reciting: "Fixation base 100 may also comprise a plurality of slots 118 for accepting tabs (not shown) of the first dental guide 122." *Id.* at 253. Patent Owner stated:

the tabs of the first dental guide 122 are described as engaging with the slots 118 at page 7, line 21 to page 8, line 3 as follows: 'First dental guide 122 may comprise a plurality of tabs (not shown, but similar to tabs 140, Fig. 6) corresponding in configuration to slots 118 (Fig. 1) extending toward and fitting closely with slots 118 of fixation base 100.

*Id.*

## **VIII. LEVEL OF ORDINARY SKILL IN THE ART**

A person of ordinary skill in the art ("POSITA") would at least have had a doctoral degree in dentistry and at least three to four years of experience working with guided dental surgery for installing dental implants and prosthesis. Ex. 1005 at ¶ 21.

## **IX. TECHNOLOGY BACKGROUND**

### **a. Guided Oral Surgery Systems and Methods**

Surgical guide systems for installing implants/dental prosthesis like the '016 Patent were well known in the art at the priority date. Ex. 1005 at ¶ 38. Numerous examples existed. *Id.* at ¶¶ 39–40. A POSITA would have had significant experience with these systems. *Id.* at ¶ 41.

**b. Surgical Guides Configured to Sit Only "In Front of" or "Outside of" the Jaw**

The alleged point of novelty in the '016 Patent was the position of the fixation base in front of or outside the jawbone. *See supra* at 10. However, this was well known. In addition to Zerhat (*infra* 13–14), numerous other prior art taught placement of surgical guides in front of or outside of the jawbone. Ex. 1005 at ¶¶ 42–45. A POSITA would have understood that a surgical guide base could sit exclusively in front or outside of the jawbone. *Id.* at ¶¶ 46–47.

**X. CLAIM CONSTRUCTION**

This Petition can be decided without claim construction.

**XI. GROUNDS FOR UNPATENTABILITY AND PRECISE RELIEF REQUESTED**

The Challenged Claims are invalid based upon the Grounds herein. The reference(s) below disclose all elements of the Challenged Claims. The '016 Patent discloses nothing more than what was well known in the art.

This Petition contains non-limiting examples of how the prior art teaches each element of the Challenged Claims. Additional examples are set forth elsewhere in the prior art. Petitioner assumes the '016 Patent is entitled to the earliest recited priority date—May 18, 2017. The references cited herein are prior art:

**Zerhat** (Ex. 1004) was published on June 3, 2010, and is prior art under at least 35 U.S.C. § 102(a).

'**255 Llop** (Ex. 1003) was published on February 11, 2016, and is prior art under 35 U.S.C. § 102(a).

**Wong** (Ex. 1006) was published on January 7, 2016, and is prior art under 35 U.S.C. § 102(a).

'**881 Llop** (Ex. 1007) was published on January 8, 2015, and is prior art under 35 U.S.C. § 102(a).

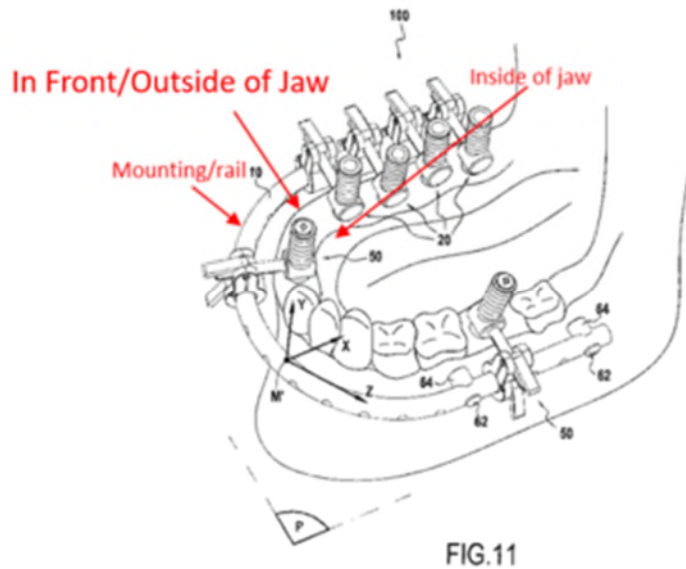
**a. GROUND ONE: Zerhat Anticipates Claims 6 and 10 of the '016 Patent.**

**i. Overview of Zerhat**

Zerhat discloses a "mounting" or "rail" that connects to a patient's jawbone for installing dental implants. Ex. 1004, Abstract, [0006]–[0007], [0011]–[0012], Figs. 1–3, 11. Zerhat was not cited during prosecution.

Zerhat's mounting (10) attaches to the outside of a patient's jawbone. *Id.* at [0022]–[0023]. The practitioner can attach "guidance means" (20) to the mounting (10) in "precise" locations. *Id.* at 28:5. The guidance means (20) allow a practitioner to drill in the proper area. *Id.* at 25:1–10, [0109].

Zerhat's mounting (10) sits *in front of* or *outside of* the jawbone, *i.e.*, "rail 10, preferably U-shaped, for positioning inside or *outside* the patient's lower or upper jaw[.]" *Id.* at [0023]. Zerhat shows "the device 100 is positioned outside the patient's lower jaw...." *Id.* Figure 11 is illustrative:



*Id.*, Fig. 11.

Zerhat anticipates claims 6 and 10.

ii. **Claim 6 [Preamble]<sup>3</sup>: "An apparatus for installing a dental prosthesis to maxillary or mandibular jaw bone of a patient, the apparatus comprising"**

Claim 6's preamble does not limit the claim; it simply describes the purpose of the apparatus. Ex. 1001 at 10:1–2. Claim 6's preamble is, therefore, non-limiting. *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 809 (Fed. Cir. 2002). As such, the preamble is irrelevant to any invalidity determination. *See Marrin v. Griffin*, 599 F.3d 1290, 1293–95 (Fed. Cir. 2010).

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<sup>3</sup> Annotations have been added in brackets.



Zerhat also discloses it. Zerhat teaches an "invention relat[ing] to a mechanical device for assisting in the placement of dental implants in a jaw[.]" Ex. 1004, Abstract. Dental implants are mounted into a patient's jawbones so that dental prostheses can be attached. Ex. 1005 at ¶ 100. Therefore, Zerhat teaches claim 6's preamble. *Id.*; *see also* Ex. 1004, Abstract.

Accordingly, Zerhat discloses claim 6's preamble.

**iii. Claim 6[a]: "a fixation base for providing an attachment surface for a dental guide used during a dental prosthesis installation procedure,"**

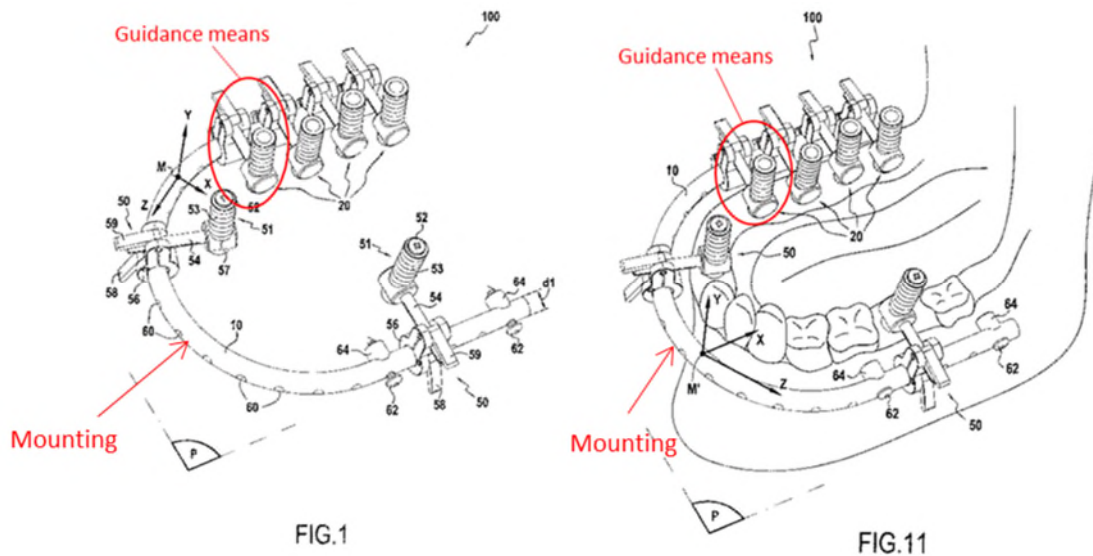
Zerhat discloses claim 6[a].

*First*, the "fixation base" in claim 6[a] "provid[es] an attachment surface for a dental guide used during a dental prosthesis installation procedure." Ex. 1001 at 10:4–6. Similarly, Zerhat discloses: "a mechanical device for assisting in the placement of dental implants in a jaw, including a **mounting** (10), a means for **attaching the mounting to the jaw**, and a *means (20) for translatably guiding a drill that is attachable to the mounting* (10)." Ex. 1004 at Abstract. Zerhat's "mounting" (10) teaches the "fixation base" in claim 6[a]. Ex. 1005 at ¶¶ 102–103.

*Second*, claim 6[a] recites that the "fixation base" provides for attachment of a "dental guide used during a dental prosthesis installation procedure[.]" Ex. 1001 at 10:4–6. Zerhat similarly discloses a "means (20) for translatably guiding a drill that is *attachable* to the mounting (10)." Ex. 1004 at Abstract. Zerhat's "means (20)" is

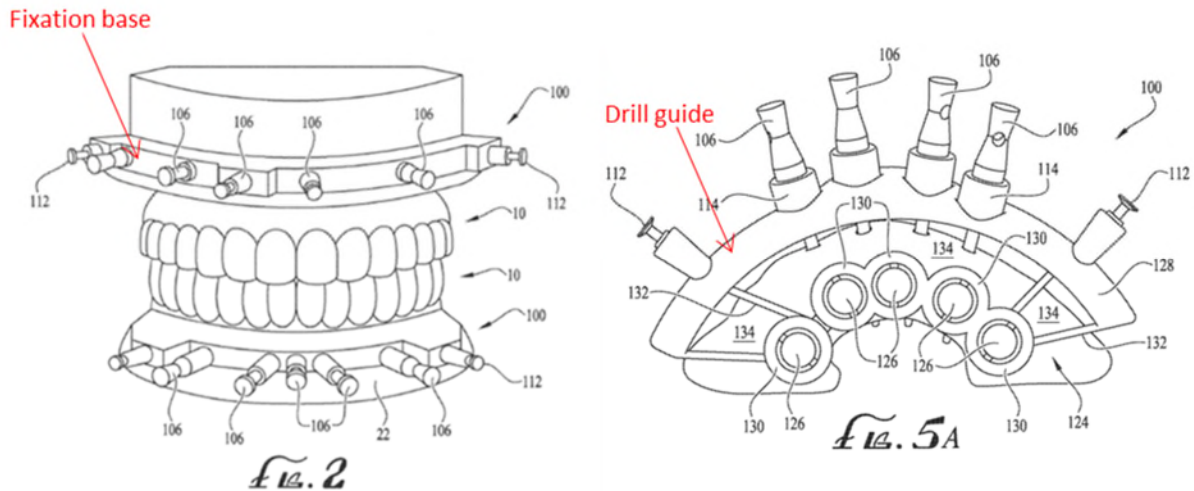
also referred to as "guidance means 20[.]" *Id.* at [0028]. Accordingly, Zerhat discloses the "fixation base" (*i.e.*, mounting means) that provides for attachment of a "dental guide" (*i.e.*, guidance means) as in claim 6[a]. Ex. 1005 at ¶¶ 104–105.

**Third**, the Figures show Zerhat's disclosure of claim 6[a]. Figures 1 and 11 of Zerhat illustrate the "mounting" and "guidance means":



Ex. 1004, Figs. 1, 11.

Figures 2 and 4 of the '016 Patent illustrate its materially equivalent "fixation base" and "drill guide":

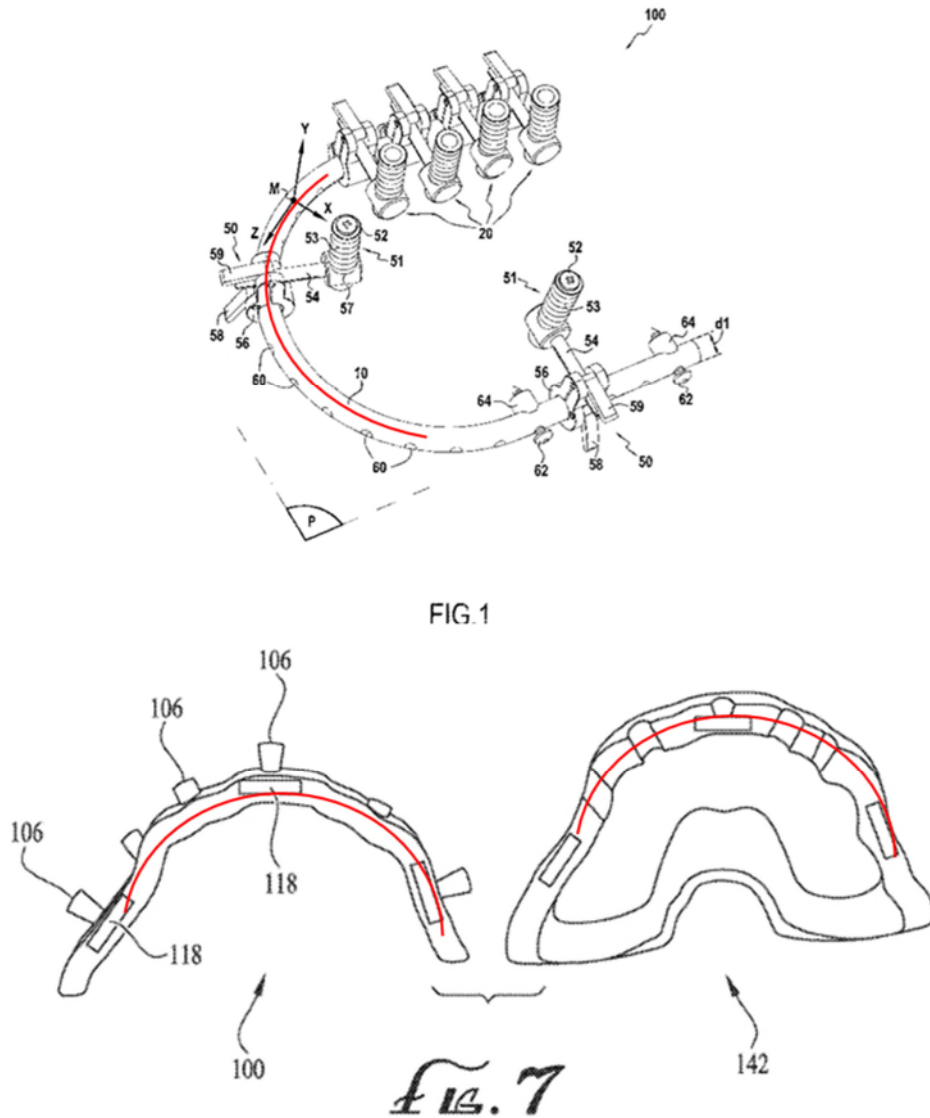


Ex. 1001, Fig. 2, 5A; *see also id.* at 2:45–46, 5:12–21, 5:2–3. Therefore, Zerhat teaches claim 6[a]. Ex. 1005 at ¶¶ 106–109.

Accordingly, Zerhat discloses claim 6[a].

**iv. Claim 6[b]: "the fixation base further comprising a generally arcuate base member"**

Zerhat discloses claim 6[b]. Zerhat's mounting is "preferably U-shaped[.]" Ex. 1004 at [0023]; *see also id.* at [0026]. Figure 1 of Zerhat and Figure 7 of the '016 Patent are illustrative:



Ex. 1004, Fig. 1; Ex. 1001, Fig. 7. Therefore, Zerhat teaches claim 6[b]. Ex. 1005 at ¶¶ 110–113.

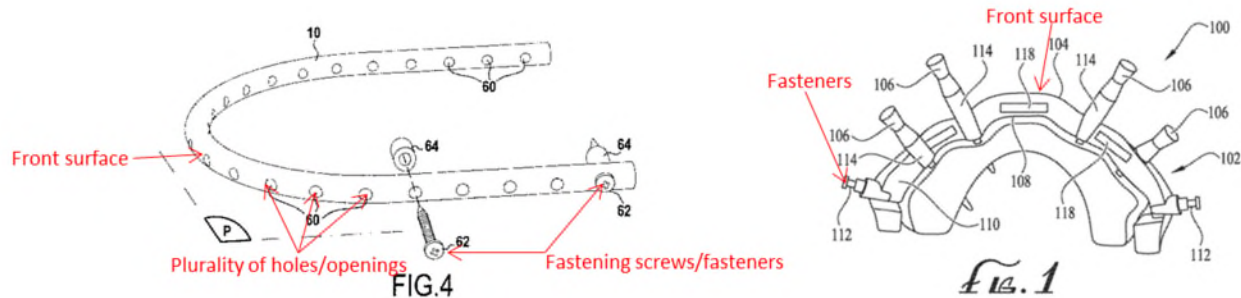
Accordingly, Zerhat discloses claim 6[b].

- v. **Claim 6[c]: "with a front surface that includes a plurality of openings through which fasteners can be passed,"**

Zerhat discloses claim 6[c]. Ex. 1005 at ¶¶ 114–115. Zerhat's mounting "10 has a **plurality of holes** 60 distributed along its length.... **Fastening screws** 62...are inserted in ... holes 60, in order to be screwed into the jawbone[.]" Ex. 1004 at [0067]. Zerhat illustrates this in Figures 1, 4 and 11. *Id.* at Figs. 1, 4, and 11.

The "plurality of **openings**" in the "front surface" (104) in the '016 Patent's fixation base are taught by "plurality of *holes* 60" in Zerhat's mounting. *Compare* Ex. 1001 at Fig. 1, 4:1–2 *with* Ex. 1004 at [0067], Figs. 1, 4, 11; *see also* Ex. 1005 at ¶¶ 116–117. The "fasteners" in claim 6[c] are taught by "*fastening screws*" (62) in Zerhat. Ex. 1005 at ¶ 118.

Zerhat's Figure 4 and the '016 Patent's Figure 1 are illustrative:

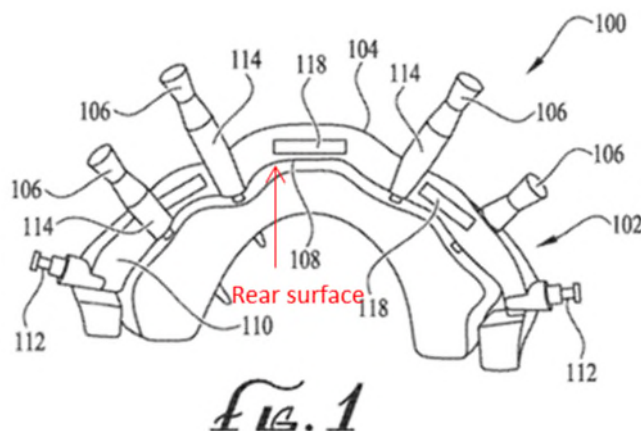


Ex. 1004, Fig. 4; Ex. 1001, Fig. 1; Ex. 1005 at ¶ 117.

Accordingly, Zerhat discloses claim 6[c].

**vi. Claim 6[d]: "a rear surface,"**

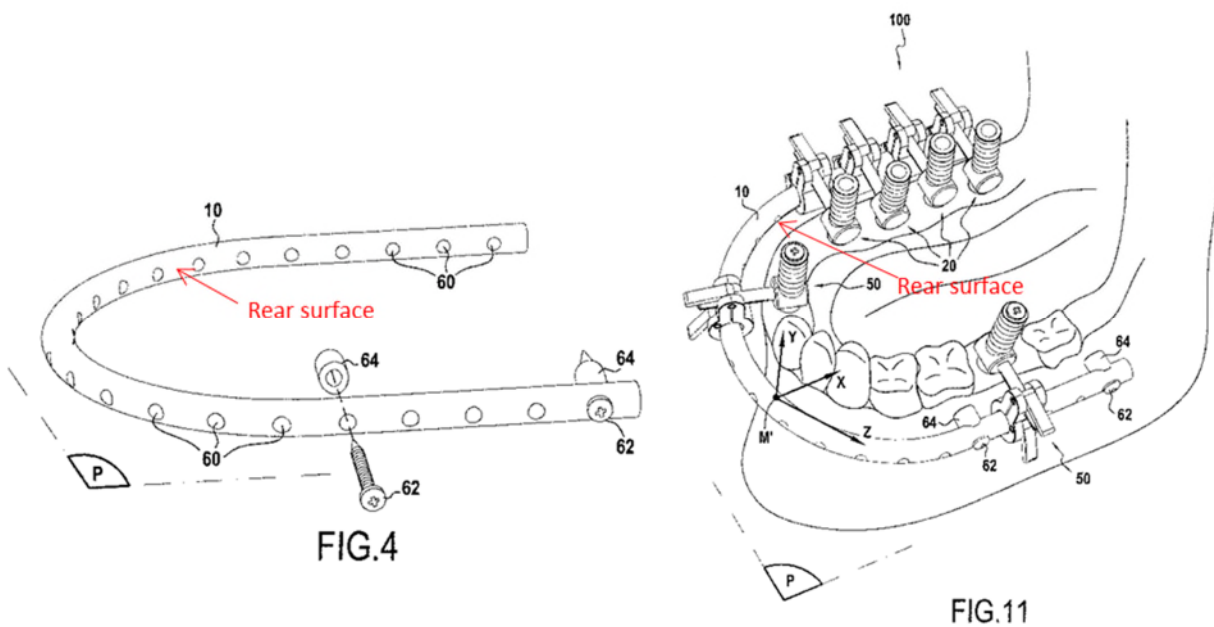
Claim 6[d]'s fixation base with a "rear surface" is depicted at Figure 1 (108):



Ex. 1001 at Fig. 1, 4:2.

Zerhat discloses a fixation base with a "rear surface." Ex. 1005 at ¶¶ 119–121.

Figures 4 and 11 are illustrative.

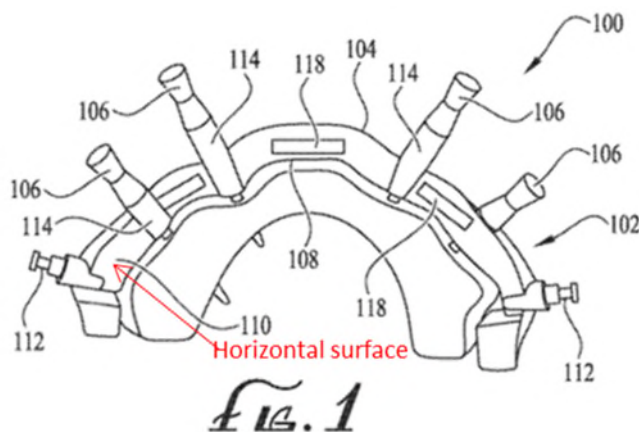


Ex. 1004, Figs. 4, 11.

Accordingly, Zerhat discloses claim 6[d].

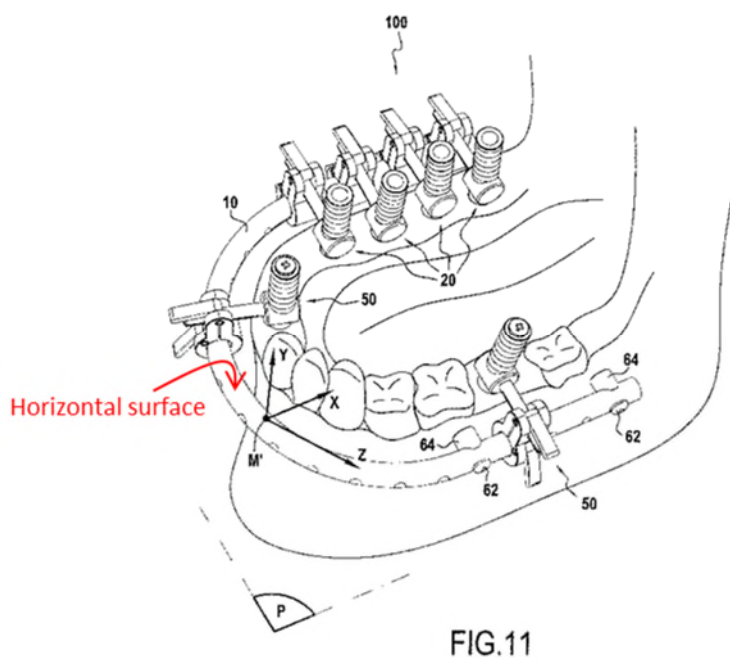
**vii. Claim 6[e]: "a horizontal surface,"**

Claim 6[e]'s "horizontal surface" is depicted at Figure 1 (110):



Ex. 1001 at Fig. 1, 4:4.

Zerhat's Figure 11 shows the mounting rail (10) with a horizontal surface:



Ex. 1004 at Fig. 11; Ex. 1005 at ¶¶ 122–25.

Accordingly, Zerhat discloses claim 6[e].

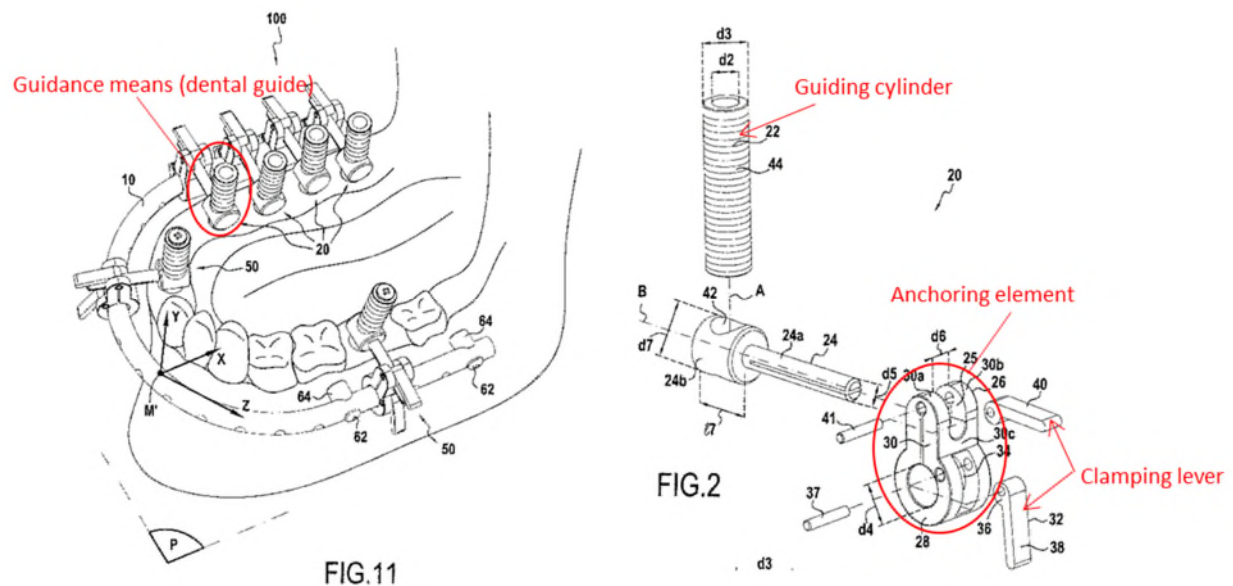
**viii. Claim 6[f]: "manually releasable attachment elements for attachment of a dental guide used during a prosthesis installation to the fixation base,"**

Patent Owner changed "first attachment element" to "manually releasable attachment elements[.]" *Supra* at 10–11. For support, Patent Owner referred to the specification: "Fixation base 100 may also comprise a plurality of slots 118 for accepting tabs (not shown) of the first dental guide 122." *Id.* at 11. These "manually releasable attachment elements" are depicted in Figure 1 as slots (118) of the '016 Patent. Ex. 1001 at Fig. 1, 4:48–49, 10:10.

Zerhat discloses manually releasable attachment elements. Zerhat teaches an "anchoring element" (26) and "clamping lever" (32). Ex. 1004 at Figs. 1, 2, 3. Zerhat's "anchoring element 26 may be secured to the [mounting] rail 10 by means of an eccentric clamping lever 32." *Id.* at [0035]. Further, "the guidance means (20) consist of a guiding cylinder (22), connected, via a rod (24), to an anchoring element (26) mounted on the mounting (10) and can be fixed to said mounting (10) by locking means (32)." *Id.* at 27:10–14. That is, as the clamping lever (32) of anchoring element (26) is manually actuated, the anchoring element (26) is released or locked, thereby releasing the attached guidance means (20) or attaching it in place to the rail (10). Ex. 1005 at ¶¶ 126–132.



The "guidance means (20)" in Zerhat teaches '016 Patent's "dental guide[.]" *Supra* at 16. The "manually releasable attachment elements" are taught by Zerhat's anchoring element (26) with clamping lever (32). Zerhat's Figures 11 and 2 are illustrative:



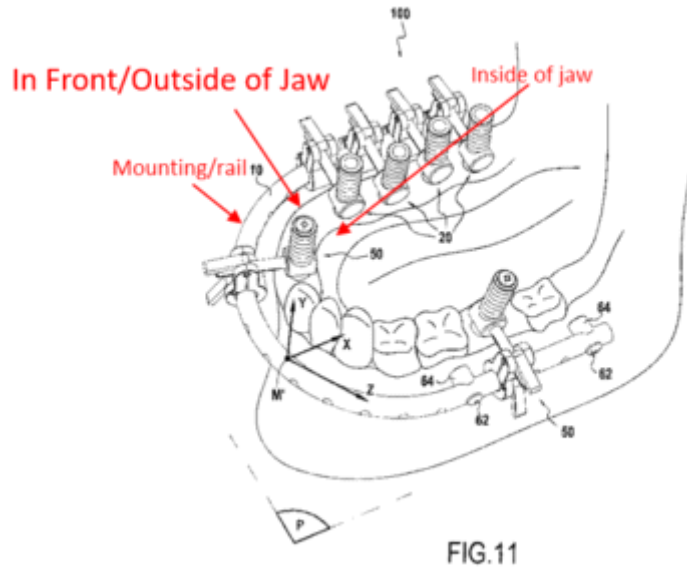
Ex. 1005 at ¶¶ 131–32.

Accordingly, Zerhat discloses claim 6[f].

- ix. **Claim 6[g]: "wherein the fixation base is configured and dimensioned to fit only in front of the maxillary or mandibular bone structure of a patient and which fixation base itself does not include any portions which would otherwise extend in back of the maxillary or mandibular bone structure of a patient."**

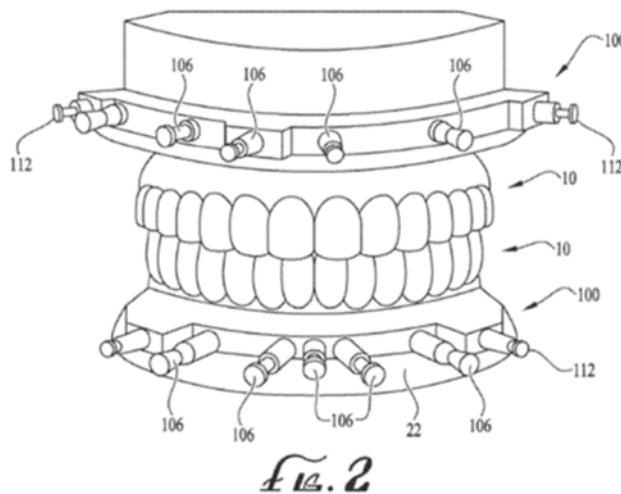
Zerhat discloses claim 6[g]. Specifically: "The device 100 comprises a [mounting] rail 10...for positioning inside or *outside the patient's lower or upper*

*jaw....*" Ex. 1004 at [0023]. Figure 11 illustrates its mounting being only *in front* of the patient's jaw:



Ex. 1004, Fig. 11; Ex. 1005 at ¶¶ 133–35. Zerhat confirms "the device [] is positioned *outside the patient's lower jaw.*" Ex. 1004 at [0023].

Figure 2 in the '016 Patent similarly shows a configuration where the base sits *outside* the patient's jaw:



Ex. 1001, Fig. 2; Ex. 1005 at ¶¶ 136–38. Patent Owner's arguments during prosecution confirm that placement "*in front of*" and "*outside*" the jaw (as used in Zerhat) are synonymous. *Supra* at 10 (arguing the Examiner's cited references did not disclose that the "fixation base only sits on the *outside of the jaw*").

Accordingly, Zerhat discloses claim 6[g].

- x. **Claim 10: "The apparatus of claim 6, further comprising a second dental guide, wherein the second dental guide is a drill guide for guiding drilling of holes for the implants, the drill guide attachable to the fixation base in a position wherein the drill guide is in vertical registry with the maxillary or mandibular jaw bone, the drill guide including a seating feature cooperating with the attachment elements of the fixation base, and a plurality of generally vertical bores corresponding in location to and in axial registry with intended implant sites"**

Zerhat anticipates claim 10.

*First*, Zerhat discloses claim 10's drill guide through its "[guidance] *means* (20) *for* translatably *guiding a drill* that is *attachable to the mounting* (10)." Ex. 1004, Abstract. Ex. 1005 at ¶¶ 139–140. The guidance means (20) in Zerhat allows a practitioner to "insert a drill intended for drilling the implant insertion well[.]" Ex. 1004 at [0028]. Thus, Zerhat's guidance means is an attachable drill guide "for guiding drilling of holes for the implants." Ex. 1001 at 10:42; Ex. 1005 at ¶ 140.

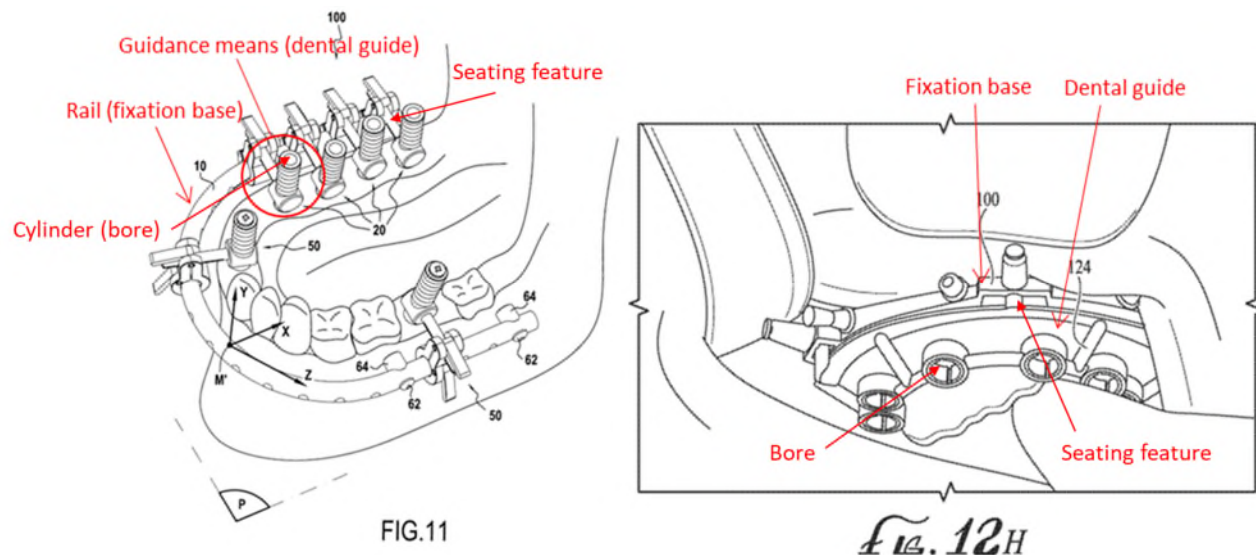
*Second*, Zerhat discloses "[t]he **guide cylinder 22** [that] is **connected** via a rod 24 **to an anchoring element 26** which can be pushed onto the [mounting] rail 10." Ex. 1004 at [0030]. Additionally, Zerhat's guidance means (20) mounting to the mounting rail (10), teaches claim 10's "drill guide including a seating feature cooperating with the attachment elements of the fixation base[.]" Ex. 1004 at [0030]; Ex. 1001 at 10:45–46; Ex. 1005 at ¶ 141.

*Third*, Zerhat discloses "several **guidance means 20** [that] are pivotally **mounted on the rail 10**, opposite the location(s) where an implant is to be made." Ex. 1004 at [0027]. Zerhat further discloses that the guidance means (20):

comprise[ ] a hollow **guide cylinder 22 . . . wherein the practitioner can insert a drill intended for drilling the implant insertion well along an axis A . . . The guide cylinder 22 is connected** via a rod 24 **to an anchoring element 26** which can be pushed onto the [mounting] rail 10.

*Id.* at [0028], [0030]. The guide cylinder in Zerhat teaches the "bore" in claim 10. Ex. 1005 at ¶ 142. Additionally, Zerhat's teaching of "exact positioning and orientation of the *guide cylinder 22* . . . coincides perfectly with the desired drilling axis for the insertion well[.]" discloses the "vertical bores" (126) in claim 10 that "correspond[ ] in location to and in axial registry with intended implant sites." Ex. 1004 at [0029]; Ex. 1001 at 10:47–48; Ex. 1005 at ¶ 142.

Figure 11 of Zerhat and 12H of the '016 Patent are illustrative:



Ex. 1004, Fig. 11; Ex. 1001, Fig. 12H.; Ex. 1005 at ¶ 142.

Accordingly, Zerhat anticipates claim 10.

**b. GROUND TWO: Claims 1–3, 5–10, and 12–13 of the '016 Patent are obvious under '255 Llop in view of Zerhat.<sup>4</sup>**

**i. Overview of '255 Llop**

'255 Llop discloses a surgical guide system and method that connects to the jawbones during the installation of dental implants and prosthetics. Ex. 1003, Abstract. The Examiner initially rejected numerous claims of the '016 Patent based primarily on '255 Llop. *Supra* at 9.

<sup>4</sup> Ground 2 incorporates all arguments relating to Zerhat's disclosure of claim 6. *Supra* at 19–30.

Patent Owner did not argue that '255 Llop failed to disclose these claims. *Id.* at 9–10. Instead, Patent Owner amended the claims to include the limitation relating to the configuration of its fixation base. *Id.* But Zerhat already disclosed this configuration. *Id.* at 25. Therefore, the combination of '255 Llop in view of Zerhat renders claims 1–3, 5–10, 12, and 13 obvious.

**ii. Reasons to Combine Zerhat with '255 Llop**

Zerhat and '255 Llop are in the same field of endeavor. *See* Ex. 1005 at ¶ 149. Zerhat and '255 Llop are in the same technical field as the '016 Patent. *Id.* All disclose methods and devices directed at guided oral surgery. *Id.* All are related to the dental prosthesis installation procedure. *Id.*

A POSITA implementing '255 Llop would have been familiar with and consulted Zerhat to identify alternative designs to perform guided oral surgery relating to dental implants and/or prosthesis. *Id.* at ¶¶ 149–150. Applying Zerhat to '255 Llop would be well within the scope of a POSITA's capabilities. *Id.* at ¶¶ 150–51. In this combination, both Zerhat and '255 Llop would be performing the same function(s) they had been known to perform separately. Ex. 1005 at ¶¶ 150–51. It would have been obvious to a POSITA that, by combining Zerhat and '255 Llop, they would achieve potential benefits of having an oral surgery guide for dental prosthesis installation, where the fixation base fits only in front of the jawbone. *Id.*

This combination would represent no more than the combination of familiar elements that would yield a predictable result. *Id.*

Furthermore, POSITAs were utilizing a fixation bases sitting only in the front of the patient's jawbone(s) in oral surgery at the priority date. *Id.* at ¶¶ 151–52. Therefore, a POSITA would have known such a configuration was a viable option, rendering predictable results of success. *Id.* Accordingly, combining Zerhat with '255 Llop would have been desirable and obvious. *Id.* The resulting combination renders claims 1–3, 5–10, 12, and 13 invalid.

**iii. Claim 6 [Preamble]<sup>5</sup>: "An apparatus for installing a dental prosthesis to maxillary or mandibular jaw bone of a patient"**

Claim 6's preamble is irrelevant. *Supra* at 14–15. Further, '255 Llop discloses it. '255 Llop recites a "dental implant surgical guide that removably combines with a bone foundation guide to properly place a dental implant-retained prosthesis to a dental surgical site[.]" Ex. 1003 at [0016]; *see also id.* at Abstract. This teaches claim 6's preamble. Ex. 1005 at ¶¶ 154–56.

Accordingly, the prior art discloses claim 6's preamble.

**iv. Claim 6[a]: "a fixation base for providing an attachment surface for a dental guide used during a dental prosthesis installation procedure"**

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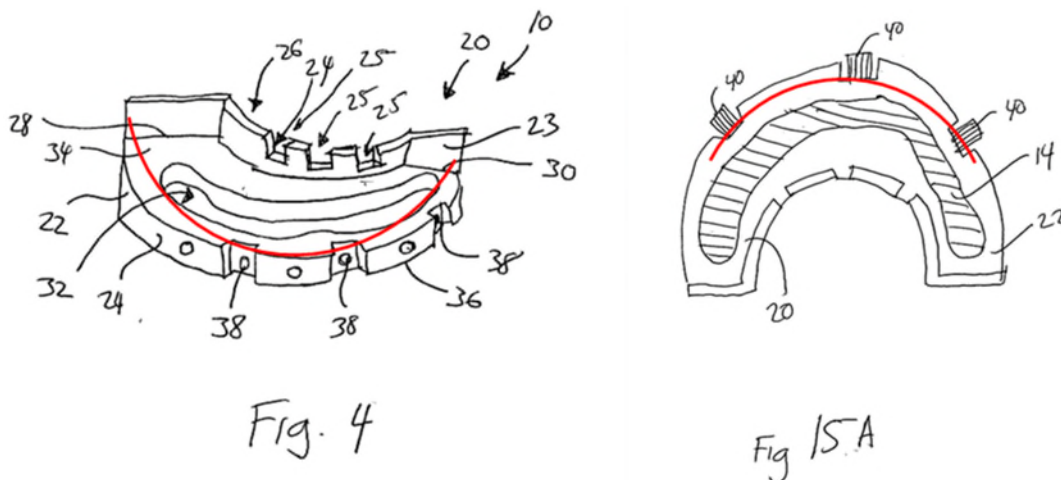
<sup>5</sup> Petitioner addresses claim 6 first as other claims depend on, or are substantially similar to, claim 6.

'255 Llop discloses claim 6[a]. '255 Llop's bone foundation guide (20) teaches the '016 Patent's fixation base (100). Ex. 1003 at Fig. 1. '255 Llop recites: "a dental implant surgical guide [that] could [be] **removably attached** to the bone foundation guide[.]" *Id.* at [0013]. Furthermore, the "bone foundation guide 20 acts as a base or foundation for the **dental implant surgical guide** 50[.]" *Id.* at [0067]. Therefore, the dental implant surgical guide attaches to the bone foundation guide. Ex. 1005 at ¶¶ 157–59.

Accordingly, the prior art discloses claim 6[a].

**v. Claim 6[b]: "the fixation base further comprising a generally arcuate base member"**

'255 Llop discloses claim 6[b]. '255 Llop's Figures show the foundation guide (20) having a generally arcuate (curved) shape. *Id.* at Figs. 1, 4, 5, 6, 9, 10–15A, 17–19, 21–23. Figures 4 and 15A of '255 Llop are illustrative:



*Id.* at Figs. 4, 15A. Therefore, '255 Llop teaches claim 6[b]. Ex. 1005 at ¶¶ 160–61.



Accordingly, the prior art discloses claim 6[b].

vi. **Claim 6[c]: "with a front surface that includes a plurality of openings through which fasteners can be passed"**

'255 Llop discloses claim 6[c]. '255 Llop recites:

The bone foundation guide body 22 may be further penetrated by one or more *attachment apertures* 38 that may be oriented to pass through a buccal 24 wall. Body *fasteners* 40 may pass through the *attachment apertures 38 to into the bone 14 of the dental surgical site 12* to removably secure the bone foundation guide body 22

Ex. 1003 at [0062]. '255 Llop discloses a "front surface," i.e., buccal wall (24). *Id.* Further, '255 Llop's attachment apertures (38) that pass through the buccal wall (24) teach claim 6[c]'s "openings." *Id.* Additionally, the fasteners (40) in '255 Llop that pass through the attachment apertures (38) teach the "fasteners" recited in claim 6[c]. *Id.* Figure 12 is illustrative:

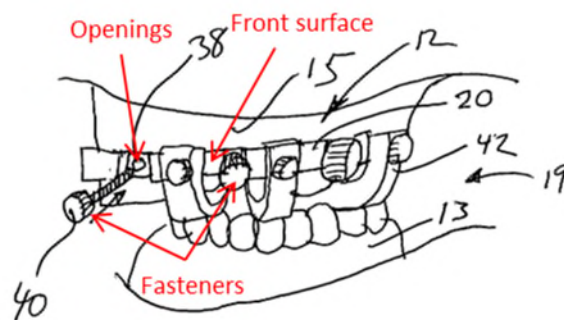


Fig. 12

*Id.* at Fig. 12. Therefore, '255 Llop teaches claim 6[c]. Ex. 1005 at ¶¶ 162–64.

Accordingly, Zerhat, '255 Llop, and/or a combination of '255 Llop with Zerhat disclose claim 6[c].

**vii. Claim 6[d]: "a rear surface"**

'255 Llop discloses claim 6[d]. '255 Llop's bone foundation guide (20) has a rear surface on the buccal wall (24). Ex. 1003 at [0061]. Figure 6 of '255 Llop is illustrative:

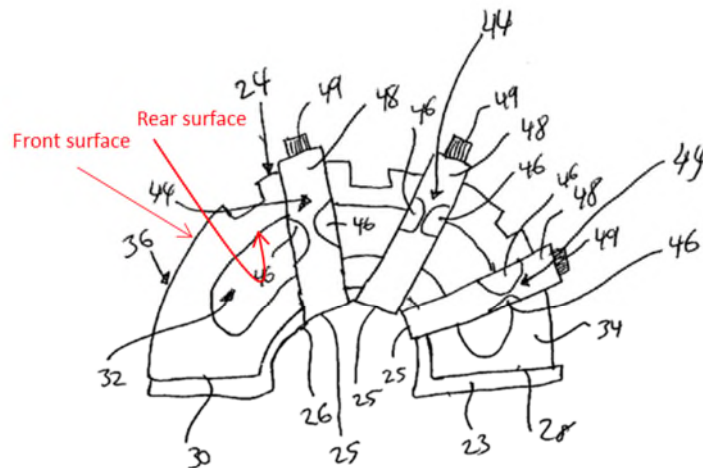


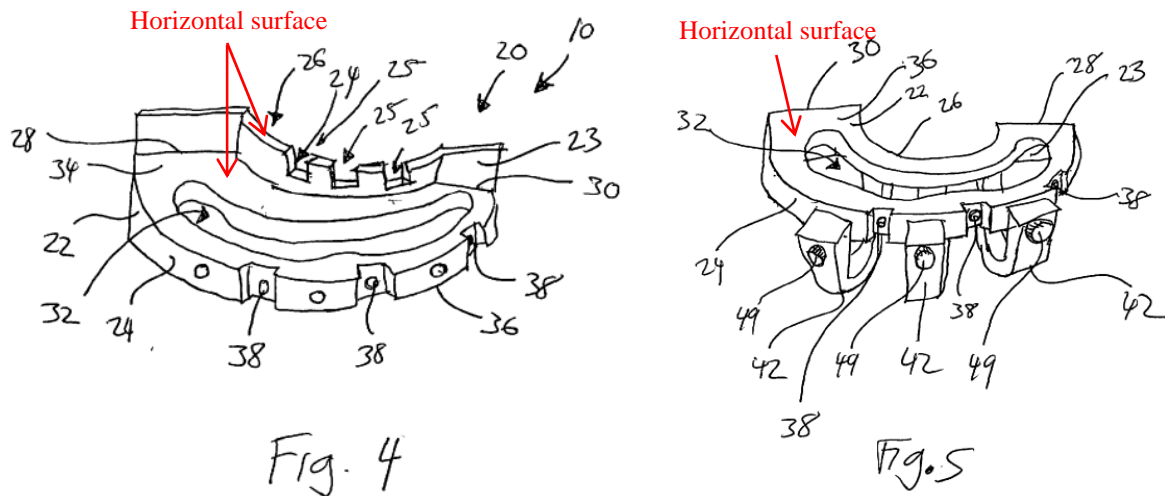
Fig. 6

*Id.* at Fig. 6. Therefore, '255 Llop teaches claim 6[d]. Ex. 1005 at ¶¶ 165–67.

Accordingly, the prior art discloses claim 6[d].

**viii. Claim 6[e]: "a horizontal surface"**

'255 Llop discloses claim 6[e]. '255 Llop discloses a "bone foundation guide top 34." Ex. 1003 at [0071]. Figures 4 and 5 show the "horizontal surface."



*Id.* at Figs. 4, 5. Therefore, '255 Llop teaches claim 6[e]. Ex. 1005 at ¶¶ 168–69.

Accordingly, the prior art discloses claim 6[e].

**ix. Claim 6[f]: "manually releasable attachment elements for attachment of a dental guide used during a prosthesis installation to the fixation base"**

'255 Llop discloses claim 6[f]. '255 Llop's surgical guide (50) "could utilize a wide variety of attachment means" to attach to the bone foundation guide. Ex. 1003 at [0068]. An attachment means could use:

one or more *guide pins 70* and *one or more guide tabs 71* and their frictional interplay with the body 22. *The guide pins 70 could protrude out from the bottom side 60 by the buccal wall 62* to be removably received within pin apertures on the top 34 of the body 22 along the buccal wall 24. The one or more *guide tabs 71* could extend outwards from the lingual side 64 to be respectively *received by the cutouts 25* of the cutting guard 23. The guide tabs 71 and guide pins 70 along with

the lingual side 64 matching the contour of the cutting guard 23 *could provide a snap-in fit of the dental implant surgical guide 50 to the bone foundation guide 20.*

*Id.*

'255 Llop's cutouts (25) and/or the pin apertures teach the "manually releasable attachment elements" recited in claim 6[f]. *Id.* In '255 Llop, cutouts (25) and or pin apertures receives guide tabs (71) and/or guide pins (70) to provide a "snap-in fit of the dental implant surgical guide 50 to the bone foundation guide 20." *Id.* Therefore, '255 Llop teaches claim 6[f]. Ex. 1005 at ¶¶ 170–71.

Accordingly, the prior art discloses 6[f].

- x. **Claim 6[g]: "wherein the fixation base is configured and dimensioned to fit only in front of the maxillary or mandibular bone structure of a patient and which fixation base itself does not include any portions which would otherwise extend in back of the maxillary or mandibular bone structure of a patient"**

Zerhat discloses claim 6[g]. *See supra*, at 23–24.

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Accordingly, claim 6 is obvious based on '255 Llop in view of Zerhat.

- xi. **Claim 1 [Preamble]: "A method of installing a multi-tooth dental prosthesis in a maxillary or mandibular position in a mouth of a patient"**

Claim 1's preamble is irrelevant. *Supra* at 14–15. In addition, '255 Llop recites a method of using its bone foundation guide system (20) for installing a multi-tooth

dental prosthesis to the jaw bone(s), as detailed in steps 102–112 of method 100. Ex. 1003 at [0073]–[0086]; *see also* Ex. 1005 at ¶¶ 175–78.

Accordingly, '255 Llop discloses claim 1's preamble.

**xii. Claim 1[a]: "providing a dental prosthesis for the maxillary or mandibular positioning in the patient's mouth"**

'255 Llop discloses claim 1[a]. '255 Llop teaches a "dental implant surgical guide that removably combines with a bone foundation guide to properly place a *dental implant-retained prosthesis* to a dental surgical site[.]" Ex. 1003 at [0016]. '255 Llop discloses a prosthesis (21) positioned in the maxillary or mandibular position in a patient's mouth. *Id.*; *see also id.* at [0055] (describing Fig. 23 as "the *prosthesis* applied to the bone foundation guide and tissue gasket combination"). Therefore, '255 Llop teaches claim 1[a]. Ex. 1005 at ¶¶ 179–180.

Accordingly, '255 Llop discloses claim 1[a].

**xiii. Claim 1[b]: "utilizing a fixation base to serve as a mounting jig for a plurality of other dental guides comprising a first dental guide, a second dental guide, and a third dental guide, wherein the fixation base comprises a generally arcuate shape with a front surface that has a plurality of openings through which fasteners can be passed, a rear surface, and a horizontal surface bearing first attachment elements for engagement of the dental guides used in the prosthesis installation, wherein the fixation base is configured and dimensioned to fit only in front of the maxillary or mandibular bone structure of said patient and itself does not include any portion which**

**would otherwise extend in back of the maxillary or  
mandibular bone structure of said patient"**

Claim 1[b] has several subparts. Each is taught in '255 Llop and/or Zerhat.

*First*, claim 1[b] recites: "utilizing a fixation base to serve as a mounting jig for a plurality of other dental guides comprising a first dental guide, a second dental guide, and a third dental guide[.]" Ex. 1001 at 9:1–3. '255 Llop discloses this portion of claim 1[b].

'255 Llop teaches a bone foundation guide (20). Ex. 1003 at [0060]. The bone foundation guide (20) is a fixation base that serves as a mounting jig for a plurality of other dental guides as recited in claim 1[b]. Ex. 1005 at ¶¶ 181–82. For example, '255 Llop discloses a "dental implant surgical guide that removably combines with a bone foundation guide[.]" Ex. 1003 at [0016]. Further, '255 Llop recites: "conjoining . . . two guides 20, 50 in a stackable manner so that the bone foundation guide 20 acts as a base or foundation for the dental implant surgical guide 50." *Id.* at [0067].

'255 Llop also discloses the plurality of other dental guides in claim 1[b]. The first dental guide in '255 Llop is taught by anchoring struts (42). *Id.* 1003 at [0063]–[0064]; *see also infra* at 38–39. The second dental guide in '255 Llop is taught by a surgical guide (50). Ex. 1003 at [0066]–[0067], [0081]; *see also infra* at 43–44. The

third dental guide in '255 Llop is taught by gasket (80). *Id.* at [0060], [0071], [0083], [0088]; *see also infra* at 45–46.

**Second**, the "first attachment elements" in claim 1[b] are described as "106 for engagement of a first dental guide 122" and additionally that they "may comprise pins, threaded bolts, or other manually removable fasteners, and are made to cooperate with corresponding openings in the other apparatus to be mounted on fixation base 100." Ex. 1001 at 4:5–6 and 29–32. '255 Llop teaches these "first attachment elements."

For example, '255 Llop discloses that:

anchoring struts 42 may be penetrated by strut apertures 47 that allow strut fasteners 49 (e.g., tapered pins) to penetrate through the anchoring strut 42 to the buccal wall 24. The ***strut fasteners 49 may removably attach*** to the anchoring strut 42 by the buccal wall 24 and be held in place by frictional force.

Ex. 1003 at [0063]. This strut fastener (49) cooperates with corresponding openings (i.e., '255 Llop's strut apertures (47)) in the other apparatus (i.e., '255 Llop's anchoring strut (42)) to be mounted on a fixation base (100) (i.e., '255 Llop's bone foundation guide (20)). *Id.*; *see also* Ex. 1005 at ¶¶ 183–84. This teaches claim 1[b]'s first attachment element. Ex. 1005 at ¶¶ 183–84.

**Third**, the remaining subparts of claim 1[b] are not materially different from claim 6. *Compare* Ex. 1001 at 9:4–15 *with id.* at 10:4–18; *see also* Ex. 1005 at

¶ 185. Therefore, these subparts are disclosed in Zerhat and/or '255 Llop. *Supra* at 14–25, 29–35.

Accordingly, the prior art discloses claim 1[b]. Ex. 1005 at ¶¶ 185–86.

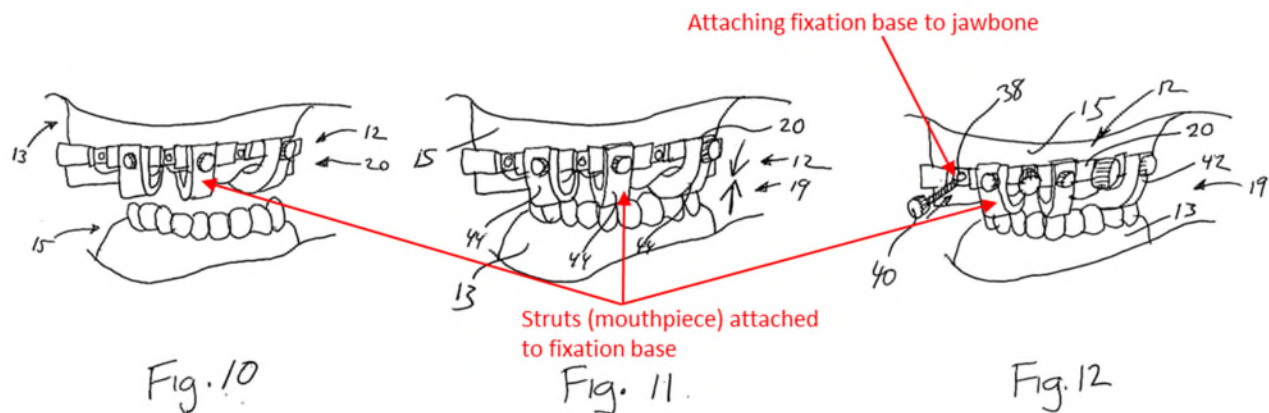
**xiv. Claim 1[c]: "utilizing the first dental guide, wherein the first dental guide is a mouthpiece that attaches to the fixation base and is used to assure appropriate location to attach the fixation base to the maxillary or mandibular bone tissue of said patient"**

'255 Llop discloses claim 1[c]. '255 Llop's anchoring struts (42) disclose a mouthpiece used to ensure the fixation base is attached at the appropriate location. Ex. 1003 at [0063]. '255 Llop's anchoring struts (42) "may be removably attached to the buccal wall 24" of the bone foundation guide (20). Ex. 1003 at [0063]. Specifically:

[t]he ***anchoring strut 42*** may allow the patient itself press [sic] at least a portion of gum tissue, dentition or both of the opposing alveolar ridge 13 upon at least one anchoring strut 42 of the bone foundation guide 21 **to generally hold the bone foundation guide 21 in place upon the dental surgical site 12** (e.g., the exposed bone.) . . . . The patient's action (e.g., substantially clamping down with the patient's mouth upon the bone foundation guide 20 in situ could **allow the patient to temporarily and removably hold the bone foundation dental upon the dental surgical site while the dental health care professional (not shown) is free to use both hands to attach the bone foundation guide 21 in place** with body fasteners.



*Id.* at [0064]; *see also id.* at Fig. 1. The anchoring strut (42) is used to attach the bone foundation guide (20) in the ***proper place***. *Id.* The anchoring strut (42) teaches claim 1[c]'s mouthpiece. Ex. 1001 at 9:16–20; *see also* Ex. 1005 at ¶¶ 187–191. Figures 10–12 are illustrative:



Ex. 1003 at Figs. 10–12.

Patent Owner acknowledged '255 Llops' anchoring struts are "struts/***mouthpiece***[" Ex. 1002 at 184, 179. This confirms '255 Llop teaches claim 1[c].

Accordingly, '255 Llop discloses claim 1[c].

**xv. Claim 1[d]: "installing the fixation base to the maxillary or mandibular bone tissue of said patient"**

'255 Llop discloses claim 1[d]. '255 Llop states:

**the bone foundation guide is initially placed upon to the dental surgical site** (e.g., the open surgical space being contoured to generally match and receive **segment of the *exposed bone***.) . . . **Body fasteners are placed into the attachment apertures and channels to generally**

**removably attach the bone foundation guide to the exposed bone at the dental surgical site.**

Ex. 1003 at [0077]–[0078]; *see also id.* at Fig. 12.

'255 Llop's bone foundation guide teaches the '016 Patent's fixation base. *Supra* at 30. Further, it would have been obvious that attaching the bone foundation guide to exposed bone discloses claim 1[d]. Ex. 1005 at ¶¶ 192–93.

Zerhat also discloses claim 1[d]. Zerhat teaches: "a mounting (10), a *means for attaching the mounting to the jaw*[" Ex. 1004 at Abstract; *see also id.* at [0067] ("Fastening screws 62 . . . are inserted in several . . . holes 60, in order to be *screwed into the jaw bone*["]); Ex. 1005 at ¶¶ 194–95.

Accordingly, the prior art discloses claim 1[d].

**xvi. Claim 1[e]: "removing the mouthpiece from the installed fixation base"**

'255 Llop discloses claim 1[e]. '255 Llop teaches removal of its anchoring struts (42) from the body of the bone foundation guide. Ex. 1003 at [0065], [0078]. '255 Llop recites: "The [practitioner] can then *remove the anchoring struts (42)* from the body of the bone reduction guide[" *Id.* at [0065]. Then, "the strut fastener(s) *can be removed along with the anchoring strut(s)* from the bone foundation guide." *Id.* at [0078]. Figures 13 and 14 are illustrative:

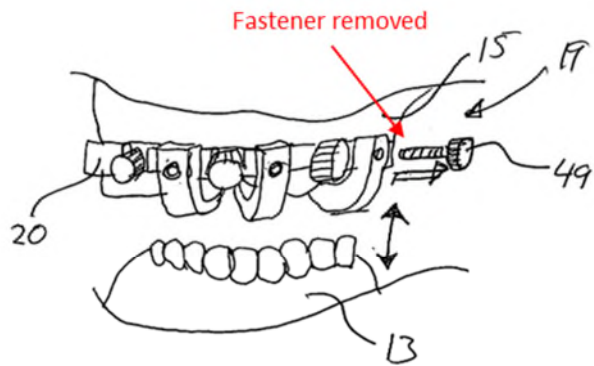


Fig. 13

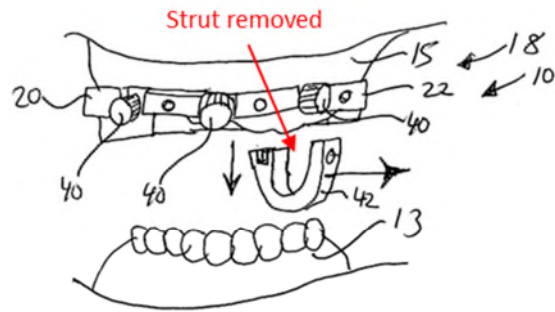


Fig. 14

*Id.* at Figs. 13, 14. Therefore, '255 Llop teaches claim 1[e]. Ex. 1005 at ¶¶ 196–98.

Accordingly, '255 Llop discloses claim 1[e].

**xvii. Claim 1[f]: "removing at least one of natural teeth, dental fixtures, and obstructive mouth tissues from the work site, to expose an underside of the maxillary or mandibular bone tissue"**

'255 Llop discloses claim 1[f]. '255 Llop teaches a process for exposing bone at the surgical site and removing natural teeth. Ex. 1003 at [0076]. '255 Llop recites that: "Any teeth at the dental implant surgical site can be removed." *Id.* '255 Llop teaches the removal step in claim 1[f]. Ex. 1005 at ¶¶ 199–201.

Accordingly, '255 Llop discloses claim 1[f].

**xviii. Claim 1[g]: "recontouring the bone tissue"**

'255 Llop discloses recontouring the bone tissue. '255 Llop discloses a bone foundation guide (20) "to substantially **modify** (e.g. **reduce**, **augment** or both) the bone 14 of the dental surgical site 12[.]" Ex. 1003 at [0061]; *see also id.* at [0062]

("removing bone 14 from a dental surgical site"). '255 Llop also teaches that the bone foundation guide's top "can be used to guide a cutting implement (e.g., blade saw) to **reduce** the dental surgical site's **bone structure**." *Id.* at [0079]. '255 Llop discloses "techniques for **reducing** or **augmenting** the bone . . . to provide the proper bone **contour**[" *Id.* '255 Llop teaches claim 1[g]. *Id.*; Ex. 1005 at ¶¶ 202–204.

Accordingly, '255 Llop discloses claim 1[g].

**xix. Claim 1[h]: "utilizing the second dental guide, wherein the second dental guide is a drill guide that attaches to the installed fixation base to assure appropriate location and orientation of holes to be drilled for the subsequently installed implants"**

Claim 1[h] is not materially different from claim 10. *Compare* Ex. 1001 at 9:29–33 *with id.* at 10:40–48; *see also* Ex. 1005 at ¶ 205. Zerhat, therefore, teaches claim 1[h]. *Supra* at 30–32.

'255 Llop discloses claim 1[h]. '255 Llop's surgical guide (50) and its corresponding implant apertures (66) are a drill guide for ensuring that accurate holes are drilled for implants. Ex. 1003 at [0066]–[0067], [0081], Figs. 16–17. '255 Llop teaches a "surgical guide 50 [that] could be removably attached to the top 34 of the body 22 [of the bone foundation guide (20).]" *Id.* at [0066]. In this configuration, the surgical guide (50) would be "anchored to [the] dental surgical site 12 to . . . guide and locate the placement of dental implants within the dental surgical site 12." *Id.*

When '255 Llop's bone foundation guide (22) and the surgical guide (50) are stacked together, the practitioner can use them "to substantially direct and operate implant preparation implements (e.g., drills, reamers, and the like), implant components, or both by passing them through the dental implant surgical guide [50] and into the open surgical space to properly prepare the dental surgical site to receive the implant(s)[.]" *Id.* at [0081]. Zerhat and '255 Llop both teach the drill guide as in claim 1[h]. Ex. 1005 at ¶¶ 205–207.

Accordingly, the prior art discloses claim 1[h].

**xx. Claim 1[i]: "drilling the implant holes in the recontoured bone tissue using the drill guide attached to the fixation base"**

Claim 1[i] is not materially different from claim 10. *Compare* Ex. 1001 at 9:34–35 *with id.* at 10:41–44; *see also* Ex. 1005 at 208. Zerhat anticipates claim 10. *Supra* at 26–27. Additionally, Zerhat teaches a "device for assisting in the **drilling of insertion wells of dental implants.**" Ex. 1004 at [00001]. Accordingly, Zerhat discloses claim 1[i].

'255 Llop also teaches claim 1[i]. Ex. 1003 at [0066]–[0067], [0081]. When attached to the bone foundation guide (20), '255 Llop's surgical guide (50) allows the practitioner "to substantially **direct and operate implant preparation implements (e.g., drills, reamers, and the like), implant components, or both by**

passing them through the dental implant surgical guide [50]." *Id.* at [0081]. Therefore, '255 Llop's teaches claim 1[i]. Ex. 1005 at ¶¶ 209–210.

Accordingly, the prior art discloses claim 1[i].

**xxi. Claim 1[j]: "removing the drill guide from the installed fixation base"**

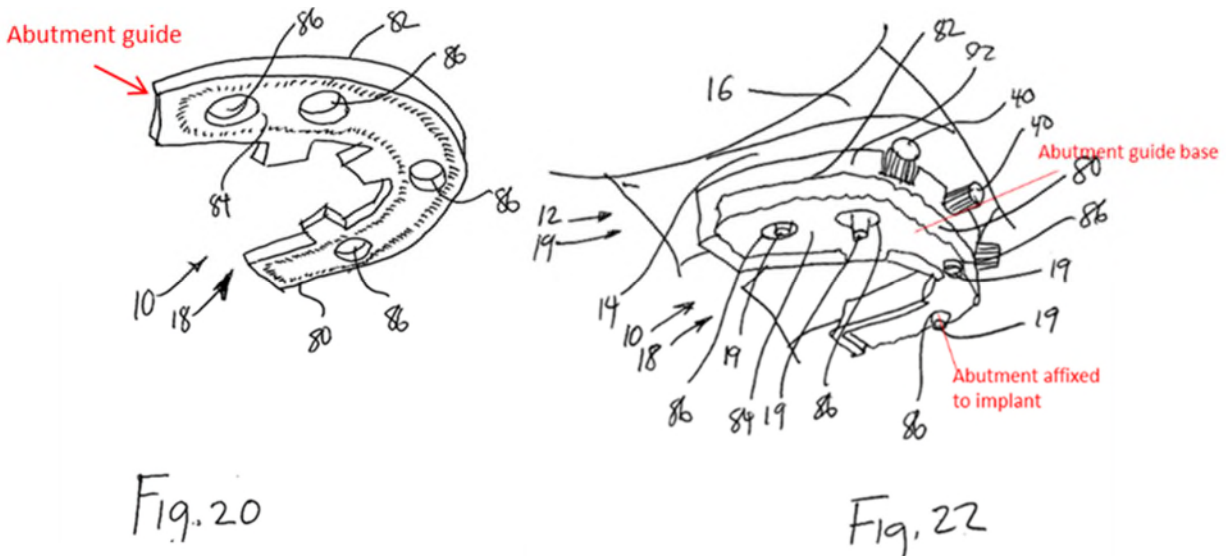
'255 Llop discloses claim 1[j]. '255 Llop's bone foundation guide (20) and surgical guide (50) teach the '016 Patent's fixation base and drill guide. *Supra* at 30–31, 47–48. '255 Llop also discloses that "[a]fter the dental implants are properly located, the dental implant surgical guide [50] may be *removed*[" Ex. 1003 at [0007], *see also id.* at [0082]. '255 Llop further discloses that "the surgical implant dental guide [50] could be *removed from the bone foundation guide* [20]." *Id.* at [0082]. Therefore, '255 Llop teaches claim 1[j]. Ex. 1005 at ¶¶ 211–213.

Accordingly, '255 Llop discloses claim 1[j].

**xxii. Claim 1[k]: "utilizing the third dental guide, wherein the third dental guide is an abutment guide base that attaches to the installed fixation base to assure appropriate location for the subsequently installed abutments"**

'255 Llop discloses claim 1[k]. '255 Llop's gasket (80) teaches an abutment guide base that attaches to the fixation base to assure appropriate location for the abutments. Ex. 1003 at [0060], [0070], [0071], [0083], [0088], Figs. 20, 22. The gasket (80) in '255 Llop is "removably attached to and . . . supported by the bone

foundation guide 20." *Id.* at [0060]. Once the gasket (80) is attached to the bone foundation guide (20), "then temporary abutments can be placed upon the implants." *Id.* at [0083]. Figure 20 depicts the gasket (80) with gasket apertures (86), and Figure 22 depicts the gasket (80) attached to the bone foundation guide (20) where abutments are placed on implants through gasket apertures (86), which guide proper placement of the abutments:



*Id.* at Figs. 20, 22. '255 Llop's gasket (80) teaches utilizing the third dental guide as in claim 1[k]. Ex. 1005 at ¶¶ 214–217.

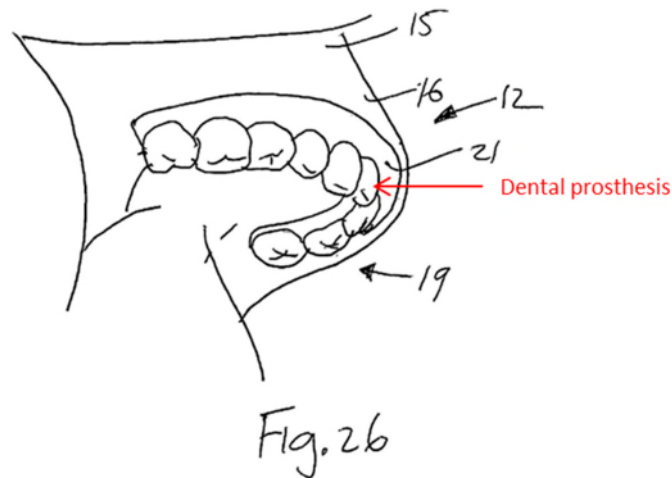
Accordingly, '255 Llop discloses claim 1[k].

**xxiii. Claim 1[l]: "installing the abutments, using the abutment guide base attached to the fixation base"**

Claim 1[l] is not materially different from claim 1[k], and is disclosed in '255 Llop. *Supra* at 45–46; Ex. 1005 at ¶¶ 219–220. Accordingly, '255 Llop discloses claim 1[k].

**xxiv. Claim 1[m]: "installing said dental prosthesis to the abutments"**

'255 Llop discloses claim 1[m]. '255 Llop teaches installing dental prosthesis to the abutments. Ex. 1003 at [0083]. Figure 26 is illustrative:



*Id.* at Fig. 26. Figure 26 shows the dental prosthesis installed upon implants. *Id.* at [0058]. '255 Llop discloses that a "temporary prosthesis can be placed over the . . . gasket [80] to come into contact with the temporary abutments." *Id.* at [0083]. Further, '255 Llop discloses "the final prosthesis (or prosthetic) could be placed upon the implants in a secure fashion." *Id.* at [0086]. Therefore, '255 Llop teaches claim 1[m]. Ex. 1005 at ¶¶ 221–23.

Accordingly, '255 Llop discloses claim 1[m].



**xxv. Claim 2: "The method of claim 1, wherein installing the fixation base to maxillary or mandibular bone tissue of the patient further comprises: drilling holes into the exposed forwardly facing surfaces of the bone tissue through the plurality of openings in the fixation base, and driving fasteners through the fixation base into the drilled holes, to secure the fixation base to the maxillary or mandibular bone"**

The additional limitation of claim 2 is not materially different from claim 6[a]–[c]. *Compare* Ex. 1001 at 9:45–53 *with id.* at 10:1–9; Ex. 1005 at ¶ 225. Zerhat discloses these elements. *Supra* at 15–19.

'255 Llop also discloses claim 2. '255 Llop teaches installation of the fixation base through drilling holes into the jaw bone tissue through the openings in the fixation base. Ex. 1003 at [0078]. '255 Llop recites that when installing its bone foundation guide (i.e., fixation base), the practitioner can "**use a drill** to make channels in the dental surgical site (e.g., *the exposed bone* portion) utilizing the attachment apertures. Body fasteners are placed into the attachment apertures and channels to generally removably **attach the bone foundation guide to the exposed bone[.]**" *Id.*

Figure 12 shows a fastener (40) being inserted through attachment aperture (38) (opening) in the bone foundation guide (20) (fixation base), to secure it to the jawbone:

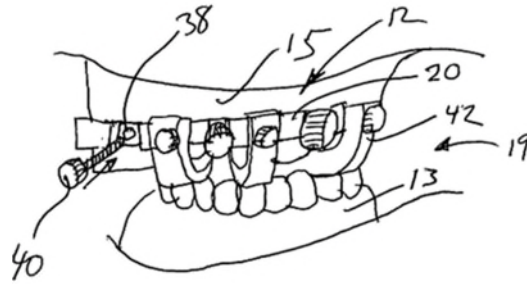


Fig. 12

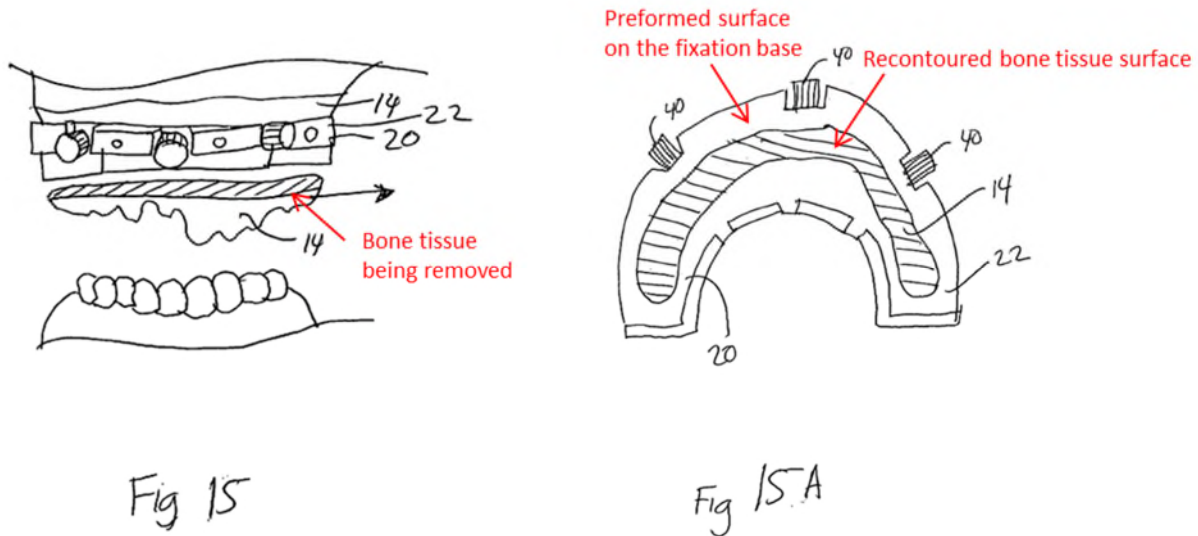
*Id.* at Fig. 12. "Body fasteners 40 may pass through the attachment apertures 38 to into the bone 14 of the dental surgical site 12 to removably secure the bone foundation guide body 22 to dental surgical site 12." *Id.* at [0062]. '255 Llop teaches claim 2. Ex. 1005 at ¶¶ 226–27.

Accordingly, '255 Llop in view of Zerhat renders claim 2 obvious.

**xxvi. Claim 3: "The method of claim 1, wherein the step of recontouring the bone tissue comprises using a preformed surface on the installed fixation base to assure proper recontouring of the bone tissue"**

'255 Llop discloses claim 3. Ex. 1003 at [[0061]–[0062], [0079], Fig. 15. '255 Llop teaches a bone foundation guide (20) used to "substantially modify (e.g., reduce, augment or both) the bone 14 of the dental surgical site 12[.]" *Id.* at [0061]. The bone foundation guide (20) has a "top [that] can be used to guide a cutting

implement (e.g., blade saw) to reduce the dental surgical site's bone structure." *Id.* at [0079]. Figures 15 and 15A are illustrative:



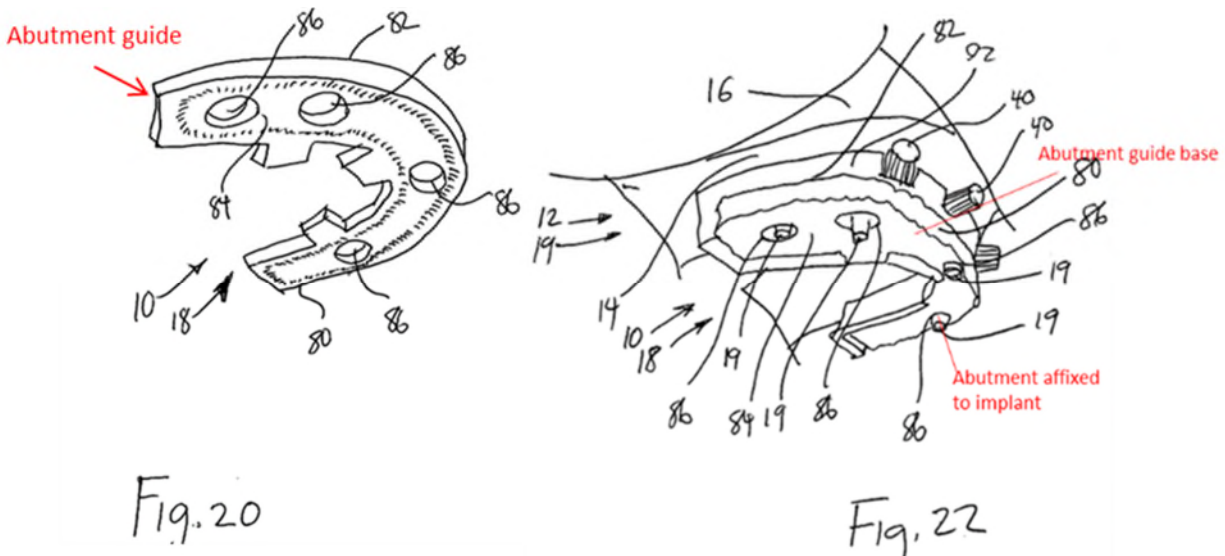
*Id.* at Figs. 15, 15A. The top of the bone foundation guide (20) in '255 Llop teaches the preformed surface in claim 3. Ex. 1005 at ¶¶ 228–231.

Accordingly, '255 Llop in view of Zerhat renders claim 3 obvious.

**xxvii. Claim 5: "The method of claim 1, wherein installing the abutments includes adjusting the abutments to appropriate angular orientations relative to a central axis of associated implants using pre-established indicators in the abutment guide base"**

'255 Llop discloses claim 5. Ex. 1003 at [0083], Fig. 22. '255 Llop's gasket (80) teaches an abutment guide. *Id.*; *see also supra* at 45–46. When the practitioner attaches the gasket to the bone foundation guide (20), "temporary abutments can be

placed upon the implants." Ex. 1003 at [0083]. Figures 20 and 22 from '255 Llop demonstrate the gasket (abutment guide) and abutments affixed to an implant:



*Id.* at Figs. 20, 22. Therefore, '255 Llop teaches claim 5. Ex. 1005 at ¶¶ 232–34.

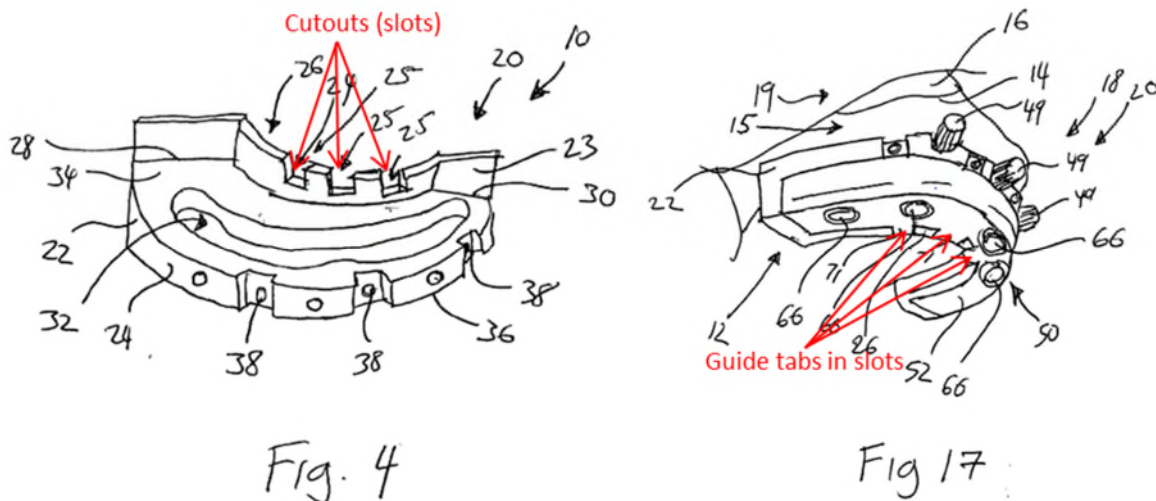
Accordingly, '255 Llop in view of Zerhat renders claim 5 obvious.

**xxviii. Claim 7: "The apparatus of claim 6, wherein the manually releasable attachment elements of the fixation base includes: a plurality of slots in said horizontal surface of said fixation base for accepting tabs located on the dental guide; and bores and bosses extending radially from the front surface of said fixation base"**

'255 Llop discloses claim 7. '255 Llop's pin apertures and or cutouts (25), guide pins (70) and/or guide tabs (71), holes or apertures, and fasteners (49) teach the added limitation of claim 7. Ex. 1003 at Figs. 4, 16–18.

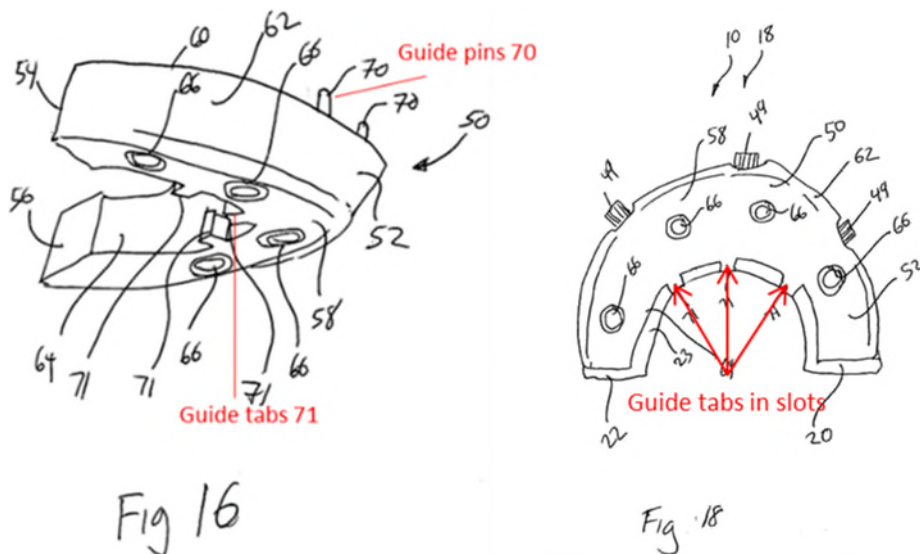
**First,** '255 Llop discloses manually releasable attachment elements including a set of cutouts (25) of bone foundation guide (20) that receive guide tabs (71)

attached to its dental surgical guide body (52) of surgical guide (50), and pin apertures on the top (34) of the body (22) of bone foundation guide (20) that receive guide pins (70). *Id.* at [0068]. "The guide tabs 71 and guide pins 70 along with the lingual side 64 matching the contour of the cutting guard 23 could provide a snap-in fit of the dental implant surgical guide 50 to the bone foundation guide 20." *Id.* Figures 4 and 17 are illustrative:



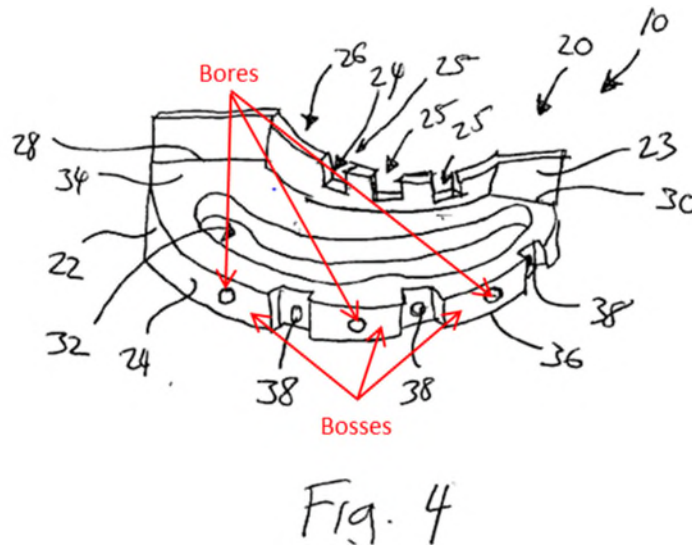
*Id.* at Figs. 4, 17. The "pin apertures" are located in the top 34 (horizontal surface) of the body (22) of bone foundation guide (20) and receive guide pins (70). *Id.* at [0068]. Therefore, the pin apertures teach slots for receiving guide pins (70) (tabs) of the dental guide (50). Ex. 1005 at ¶¶ 235–36. These cutouts (25) and/or pin apertures teach the "slots" in claim 7. *Id.*

**Second**, '255 Llop teaches use of guide pins (70) that "protrude out from the bottom side 60 by the buccal wall 62 to be removably received within pin apertures on the top 34 of the body 22" and/or guide tabs (71) "extend[ing] outwards from the lingual side 64 . . . [and] received by the cutouts 25 of the cutting guard 23." Ex. 1003 at [0068]. Figures 16 and 18 are illustrative:



*Id.* at Figs. 16, 18. '255 Llop's guide pins (70) and/or guide tabs (71) teach the "tabs located on the dental guide" in claim 7. *Id.*; Ex. 1005 at ¶ 237.

**Third**, Figure 4 discloses bores and bosses extending radially from the front surface of said fixation base:



*Id.* at Fig. 4. '255 Llop teaches claim 7's apparatus. Ex. 1005 at ¶¶ 238–39.

Accordingly, '255 Llop in view of Zerhat renders claim 7 obvious.

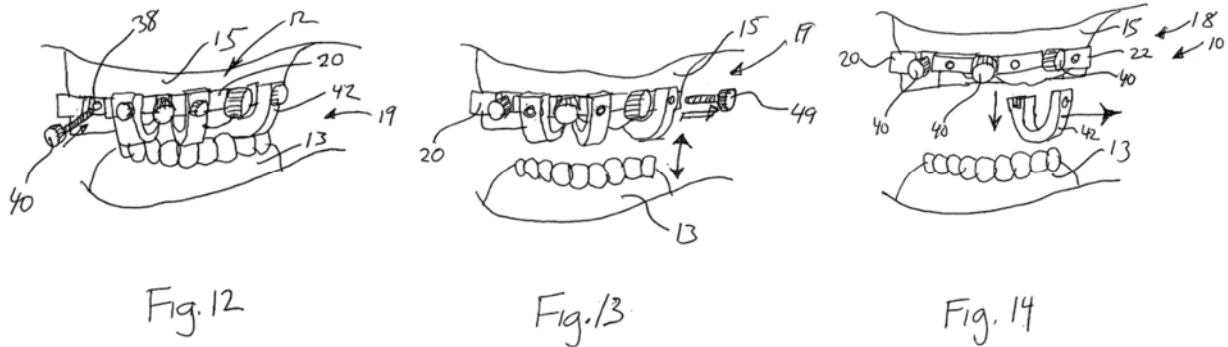
**xxix. Claim 8: "The apparatus of claim 6, further comprising a first dental guide, wherein the first dental guide is a mouthpiece configured and dimensioned to surround teeth of the patient and to releasably attach to the fixation base and to be removed after the fixation base is affixed to the maxillary or mandibular bone structure of a patient."**

Claim 8 is not materially different from claim 1[c]. *Compare* Ex. 1001 at 10:26–31 *with id.* at 9:16–20; *see also* Ex. 1005 at ¶ 240. Therefore, claim 8 is obvious. *Supra* at 38–40.

'255 Llop contains additional teachings rendering claim 8 obvious. '255 Llop's anchoring struts (42) "may be removably attached to the buccal wall 24[.]" Ex. 1003 at [0063]. '255 Llop further teaches that anchoring struts (42) are removed after the bone foundation guide (20) is affixed to the jaw bone(s). *Id.* at [0065] ("The

[practitioner] can then remove the anchoring struts 42"); *see also id.* at [0078].

Figures 12–14 are illustrative:



Ex. 1003, Figs. 12–14. '255 Llop teaches the apparatus of claim 8. Ex. 1005 at ¶¶ 241–42.

Accordingly, '255 Llop in view of Zerhat renders claim 8 obvious.

**xxx. Claim 9: "The apparatus of claim 6, wherein the manually releasable attachment elements of the fixation base includes a plurality of slots in the horizontal surface of said base member of the fixation base, wherein the dental guide includes a plurality of tabs extending toward and fitting closely with the slots of the fixation base, whereby the dental guide engages the fixation base by interfit between the slots of the fixation base and the tabs of the guide apparatus"**

Claim 9 is not materially different from claim 7. *Compare* Ex. 1001 at 10:32–39 *with* 10:19–25; *see also* Ex. 1005 at ¶ 243. Therefore, claim 9 is obvious. *Supra* at 51–54.



'255 Llop contains additional teachings rendering claim 9 obvious. '255 Llop's "guide tabs 71 and guide pins 70 along with the lingual side 64 matching the contour of the cutting guard 23 could provide a *snap-in fit* of the dental implant surgical guide 50 to the bone foundation guide 20." Ex. 1003 at [0068]. Further:

Pins on the underside of the dental implant surgical guide could attach to the attachment apertures in the bone foundation guide top . . . while the guide tabs extending out from the lingual side could removably engage the cutting guard cutouts to provide a snap fit of the dental implant surgical guide into the bone foundation guide.

Ex. 1003 at [0080], [0068]. '255 Llop discloses claim 9. Ex. 1005 at ¶¶ 244–45.

Accordingly, '255 Llop in view of Zerhat renders claim 9 obvious.

**xxxi. Claim 10: "The apparatus of claim 6, further comprising a second dental guide, wherein the second dental guide is a drill guide for guiding drilling of holes for the implants, the drill guide attachable to the fixation base in a position wherein the drill guide is in vertical registry with the maxillary or mandibular jaw bone, the drill guide including a seating feature cooperating with the attachment elements of the fixation base, and a plurality of generally vertical bores corresponding in location to and in axial registry with intended implant sites"**

Zerhat anticipates claim 10. *Supra* at 25–27. Further, claim 10 is not materially different than claims 1[h]–1[j]. *Compare* Ex. 1001 10:40–48 *with id.* at 8:63–9:44; Ex. 1005 at ¶ 246. Therefore, claim 10 is obvious.

Accordingly, '255 Llop in view of Zerhat renders claim 10 obvious.

**xxxii. Claim 12: "The apparatus of claim 6, further comprising a third dental guide, wherein the third dental guide is an abutment guide base including: bores sized and oriented to receive abutments and guide the abutments for placement against the implants, and wherein the abutment guide base is attachable to the fixation base in a position wherein the bores are in vertical registry with the maxillary or mandibular jaw bone and the implants"**

The additional limitations of claim 12 are not materially different from claims 1[k]–1[l]. *Compare* Ex. 1001 10:58–67 with *id.* at 8:63–9:44; Ex. 1005 at ¶ 247. Therefore, claim 12 is obvious. *Supra* at 45–47.

Accordingly, '255 Llop in view of Zerhat renders claim 12 obvious.

**xxxiii. Claim 13 [Preamble]: "A method of installing a fixation base in a maxillary or mandibular position in a mouth of a patient"**

Claim 13's preamble is irrelevant and disclosed in the prior art for the same reasons as the preambles of claims 1 and 6. *Compare* Ex. 1001 at 11:1–3 with *id.* at 10:1–3 and 8:63–65; *Supra* at 19–20 and 40–41; *see also* Ex. 1005 at ¶¶ 248–49. Accordingly, the prior art discloses claim 13's preamble.

**xxxiv. Claim 13[a]: "obtaining anatomical data of at least some of the surfaces of the maxillary or mandibular portion of the mouth of the patient"**

Zerhat and/or '255 Llop disclose claim 12[a].

*First*, Zerhat teaches "acqui[sition of] various information on the patient's dentition using medical imaging techniques (a scanner, for example)[.]" Ex. 1004 at

[0005]. "Computer software can contain 3D images of implants, abutments and teeth[.]" *Id.* at [0005]. Therefore, Zerhat teaches claim 13[a]. Ex. 1005 at ¶¶ 250–51.

*Second*, '255 Llop discloses "**scans of the patient's mouth 35 (along with impressions and castings thereof) may be used to create a virtual model[.]**" Ex. 1003 at [0060]; *see also id.* at [0073]. Therefore, '255 Llop teaches claim 13[a]. Ex. 1005 at ¶¶ 252–53.

Accordingly, the prior art discloses claim 13[a].

**xxxv. Claim 13[b]: "utilizing a fixation base, wherein the fixation base comprises a generally arcuate shape with a front surface that has a plurality of openings through which fasteners can be passed through, a rear surface, and attachment elements, wherein the fixation base is configured and dimensioned to fit only in front of the maxillary or mandibular bone structure of a patient and itself does not include any portion which would otherwise extend in back of the maxillary or mandibular bone structure of a patient"**

Claim 13[b] is not materially different from claims 6[a]–6[g] and 1[b]. *Compare* Ex. 1001 at 11:7–16 *with id.* at 10:4–18 and 9:1–15; *see also* Ex. 1005 at ¶ 254. Therefore, claim 13[b] is disclosed in the prior art. *Supra* at 15–25, 30–35.

Accordingly, '255 Llop in view of Zerhat discloses claim 13[b].

**xxxvi. Claim 13[c]: "utilizing a mouthpiece generated at least in part from the obtained anatomical data"**

Claim 13[c] is materially equivalent to claims 1[c] and 8. *Compare* Ex. 1001 at 11:17–18 *with id.* at 9:16–20, 10:26–31; *see also* Ex. 1005 at ¶ 255. Therefore, claim 13[c] is disclosed in the prior art. *Supra* at 38–40, 54–55.

Accordingly, '255 Llop discloses claim 13[c].

**xxxvii. Claim 13[d]: "attaching the mouthpiece to the fixation base using said attachment elements"**

'255 Llop discloses 13[d]. '255 Llop's anchoring struts (42) teach claim 13[d]'s mouthpiece. *Supra* at 38–40. Additionally, '255 Llop details that its:

anchoring struts 42 may be penetrated by strut apertures 47 that allow strut fasteners 49 (e.g., tapered pins) to penetrate through the anchoring strut 42 to the buccal wall 24. The strut fasteners 49 may removably attach to the anchoring strut 42 by the buccal wall 24 and be held in place by frictional force. The other or rear end 41 of the anchoring strut 42 may have a strut groove 48 that fits over a respective cutout 25. A tab 45 within the strut groove 48 may be removably received within the respective cutout 25 to further reversibly attach the rear end 41[.]

Ex. 1003 at [0063], Figs. 2, 3, 5, 6. '255 Llop's strut apertures (47) and fasteners (49) and/or strut grooves (48), cutout (25), tab (45) teach the attachment elements in claim 13[d]. Ex. 1005 at ¶¶ 256–58.

Accordingly, '255 Llop discloses claim 13[d].

**xxxviii. Claim 13[e]: "installing the mouthpiece onto at least some surfaces of the maxillary or mandibular portion of the mouth of the patient to assist in**

**positioning the fixation base appropriately prior to installing the fixation base to maxillary or mandibular bone tissue of the patient"**

Claim 13[e] is not materially different from claims 1[c] and 8. *Compare* Ex. 1001 at 11:21–25 *with id.* at 9:16–20; and *id.* at 10:26–31; *see also* Ex. 1005 at ¶ 259. Therefore, claim 13[e] is disclosed in the prior art. *Supra* at 38–40, 54–55.

Accordingly, '255 Llop discloses claim 13[e].

**xxxix.Claim 13[f]: "installing the fixation base to the maxillary or mandibular portions of the patient using fasteners through said plurality of openings in said front surface of the fixation base"**

Claim 13[f] is not materially different from claims 1[d], 2, 6[a], and 6[c]. *Compare* Ex. 1001 at 11:26–29 *with id.* at 9:21–22, 9:45–53, and 10:4–13; *see also* Ex. 1005 at ¶ 260. Therefore, claim 13[f] is disclosed in the prior art. *Supra* at 40–41, 48–49, 30, 31–32, 15–17, 18–19.

Accordingly, the prior art discloses claim 13[f].

**xl. Claim 13[g]: "detaching the mouthpiece from the fixation base using said attachment elements"**

Claim 13[g] is not materially different from claims 1[e] and 8. *Compare* Ex. 1001 at 11:30–31 *with id.* at 9:23 and 10:26–31; *see also* Ex. 1005 at ¶ 261. Therefore, claim 13[b] is disclosed in the prior art. *Supra* at 41–42, 54–55.

Accordingly, '255 Llop discloses 13[g].

**c. GROUND THREE: Claims 1–3, 5–10, and 12–13 of the '016 Patent are rendered obvious under Wong in view of Zerhat.<sup>6</sup>**

**i. Overview of Wong**

Wong teaches installing implants and prosthetics using guided surgery. Ex. 1006 at 1, 3. Wong uses a bone foundation guide and interchangeable elements for installing a dental prosthesis. *Id.* at 3.

**ii. Reasons to Combine**

Zerhat and Wong are in the same field of endeavor. *See* Ex. 1005 at ¶ 263. Both are in the same technical field as the '016 Patent. *Id.* All disclose methods and devices directed at guided oral surgery. *Id.* All are related to the dental prosthesis installation procedure. *Id.*

A POSITA implementing Wong would have been familiar with and consulted Zerhat to identify alternative designs to perform guided oral surgery relating to dental implants and/or prosthesis. *Id.* Furthermore, a POSITA would have understood Wong to encompass implementation of '255 Llop. *Id.* Therefore, the motivation to combine '255 Llop with Zerhat also applies to Wong. Ex. 1005 at ¶ 263. The resulting combination renders claims 1–3, 5–10, and 12–13 invalid.

**iii. 3. Claim 6 [Preamble]: "An apparatus for installing a dental prosthesis to maxillary or mandibular jaw bone of a patient"**

---

<sup>6</sup> Ground 3 incorporates all arguments relating to Zerhat's disclosure of claim 6. *Supra* at 19–30.

Wong describes a "novel and predictable protocol for a clinician to deliver a full-arch immediate fixed prosthesis[.]" Ex. 1006 at Introduction. Therefore, Wong teaches claim 6's preamble. Ex. 1005 at ¶ 264.

Accordingly, the prior art discloses claim 6's preamble.

**iv. Claim 6[a]: "a fixation base for providing an attachment surface for a dental guide used during a dental prosthesis installation procedure"**

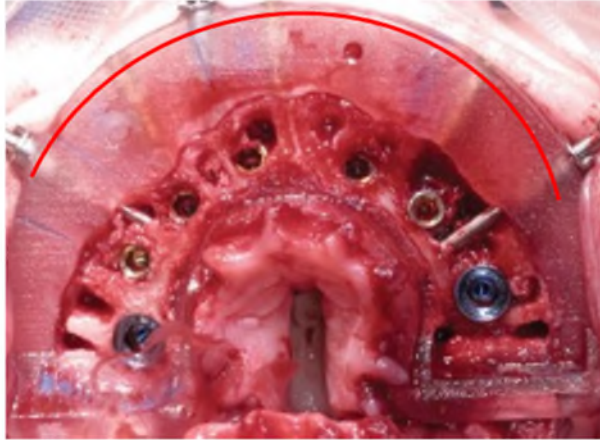
Wong discloses claim 6[a]. Wong's "bone foundation guide" teaches the '016 Patent's fixation base. Ex. 1006 at 8–9, Fig. 12. Wong's bone foundation guide provides an attachment surface for a dental guide. *Id.* at 9, 11, 13–14 ("implant placement guide was placed (Fig. 18) and indexed to fit into the bone foundation guide" and "an abutment placement guide was placed and indexed also to fit into the foundation guide"). Therefore, Wong teaches claim 6[a]. Ex. 1005 at ¶¶ 265–66.

Accordingly, the prior art discloses claim 6[a].

**v. Claim 6[b]: "the fixation base further comprising a generally arcuate base member"**

Wong's bone foundation guide is arcuate (curved). Figure 23 is illustrative:

**FIGURE 23.**



Ex. 1006 at Fig. 23; *see also* Ex. 1005 at ¶¶ 267–68.

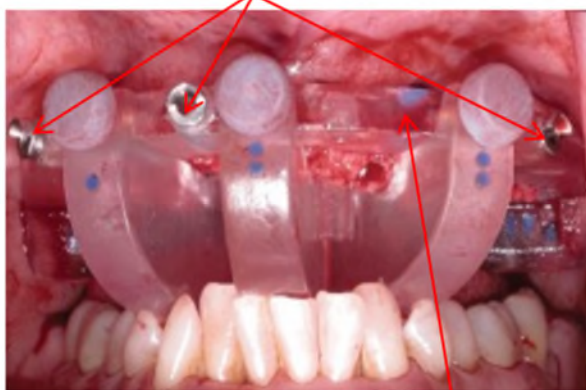
Accordingly, the prior art discloses claim 6[b].

- vi. **Claim 6[c]: "with a front surface that includes a plurality of openings through which fasteners can be passed"**



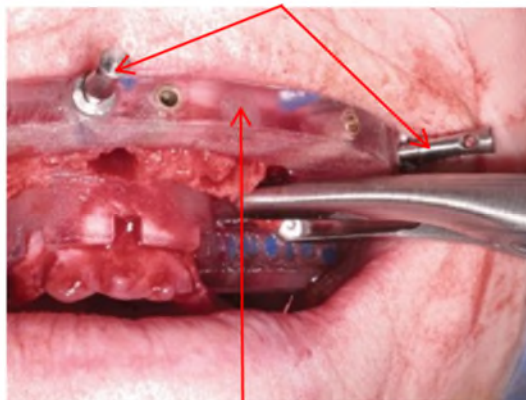
Wong's bone foundation guide also contains a front surface with a plurality of openings for fasteners. Ex. 1006 at Figs. 12, 15. Figures 12 and 15 are illustrative:

**FIGURE 12.** Openings



Front surface

**FIGURE 15.** Fasteners



Front surface

*Id.* Therefore, Wong teaches claim 6[c]. Ex. 1005 at ¶¶ 269–270.

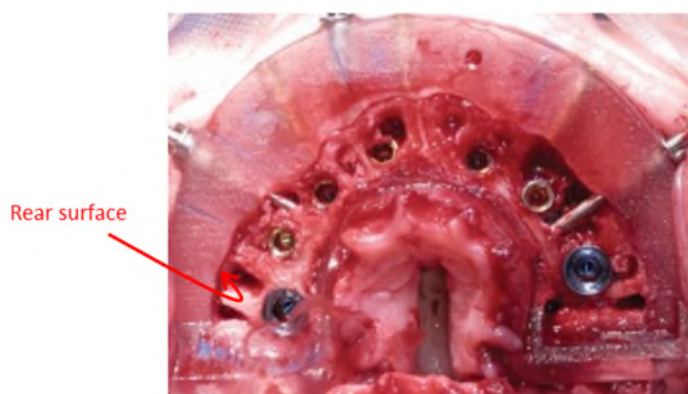
Accordingly, the prior art discloses claim 6[c].

**vii. Claim 6[d]: "a rear surface"**

Wong's bone foundation guide contains a rear surface. Ex. 1006 at Fig. 23.

Figure 23 is illustrative:

**FIGURE 23.**



Rear surface

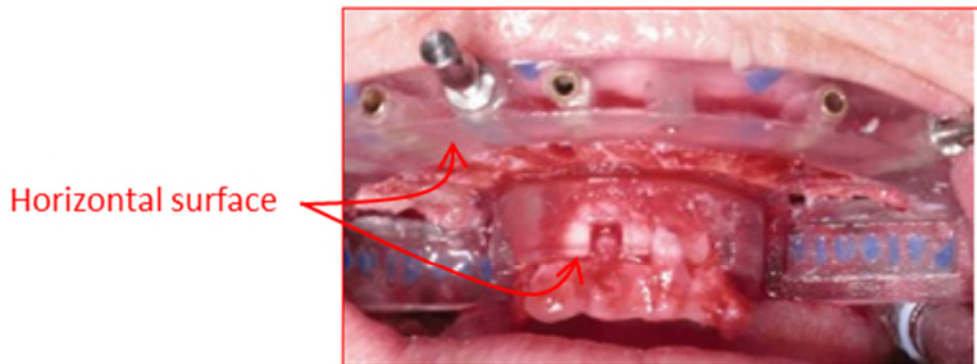
*Id.*; see also Ex. 1005 at ¶¶ 271–72.

Accordingly, the prior art discloses claim 6[d].

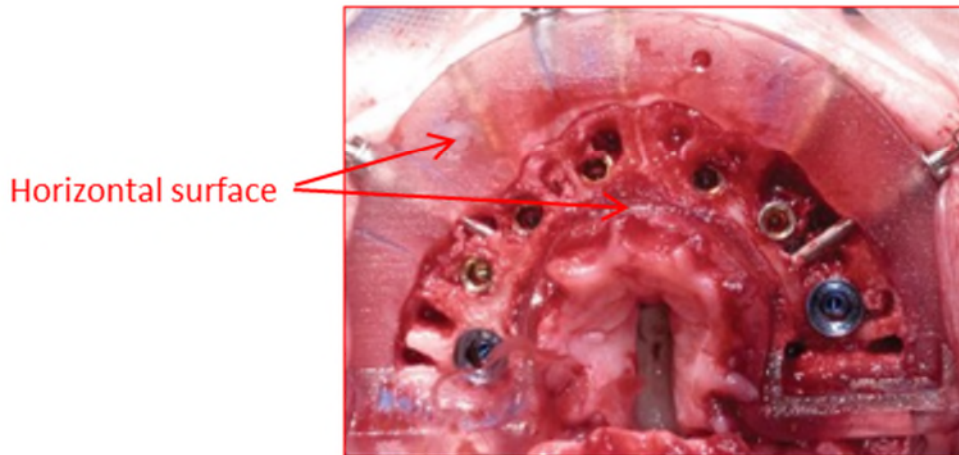
**viii. Claim 6[e]: "a horizontal surface"**

The bone foundation guide in Wong teaches a horizontal surface. Ex. 1006 at Fig. 23. Figures 17 and 23 are illustrative:

**FIGURE 17.**



**FIGURE 23.**



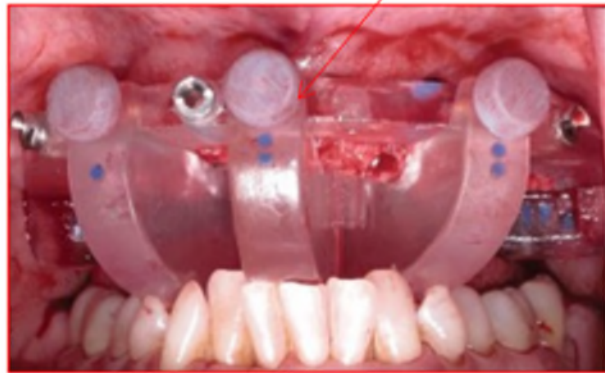
*Id.* at Figs. 17, 23; see also Ex. 1005 at ¶¶ 273–74.

Accordingly, the prior art discloses claim 6[e].

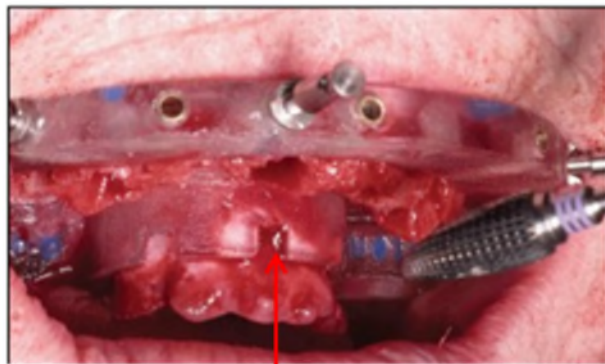
**ix. Claim 6[f]: "manually releasable attachment elements for attachment of a dental guide used during a prosthesis installation to the fixation base"**

Wong's strut fasteners and/or slots teach the "manually releasable attachment elements" in claim 6[f]. Ex. 1006 at Figs. 12 & 16. Figures 12 and 16 are illustrative:

**FIGURE 12.** manually releasable attachment elements



**FIGURE 16.**



manually releasable attachment elements

*Id.*; see also Ex. 1005 at ¶¶ 275–76.

Accordingly, the prior art discloses claim 6[f].

**x. Claim 6[g]: "wherein the fixation base is configured and dimensioned to fit only in front of the maxillary or mandibular bone structure of a patient and which fixation base itself does not include any portions which would otherwise extend in back of the maxillary or mandibular bone structure of a patient"**

Zerhat discloses claim 6[g]. *Supra* at 23–25.

- xi. Claim 1 [Preamble]: "A method of installing a multi-tooth dental prosthesis in a maxillary or mandibular position in a mouth of a patient"**

Claim 1's preamble is irrelevant. *Supra* at 35. Also, Wong recites: a "novel and predictable protocol for a clinician to deliver a full-arch immediate fixed prosthesis[.]" Ex. 1006 at Introduction. Therefore, Wong teaches claim 1's preamble. Ex. 1005 at ¶¶ 278–79.

Accordingly, the prior art discloses claim 1's preamble.

- xii. Claim 1[a]: "providing a dental prosthesis for the maxillary or mandibular positioning in the patient's mouth"**

Wong discloses a "protocol for a clinician to deliver a full-arch immediate fixed prosthesis[.]" Ex. 1006 at Introduction; Ex. 1005 at ¶¶ 280–81.

Accordingly, Wong discloses claim 1[a].

- xiii. Claim 1[b]: "utilizing a fixation base to serve as a mounting jig for a plurality of other dental guides comprising a first dental guide, a second dental guide, and a third dental guide, wherein the fixation base comprises a generally arcuate shape with a front surface that has a plurality of openings through which fasteners can be passed, a rear surface, and a horizontal surface bearing first attachment elements for engagement of the dental guides used in the prosthesis installation, wherein the fixation base is configured and dimensioned to fit only in front of the maxillary or mandibular bone structure of said patient and itself does not include any portion which**

**would otherwise extend in back of the maxillary or  
mandibular bone structure of said patient"**

Claim 1[b] is not materially different from claims 6[a]–[g]. *Compare* Ex. 1001 at 8:63–9:15 *with id.* at 10:1–18; *see also* Ex. 1005 at ¶ 282. Wong and/or Zerhat disclose claims 6[a]–[g]. *See supra* at 15–25, 30–35.

Accordingly, a combination of Zerhat and Wong disclose claim 1[b].

**xiv. Claim 1[c]: "utilizing the first dental guide, wherein  
the first dental guide is a mouthpiece that attaches to  
the fixation base and is used to assure appropriate  
location to attach the fixation base to the maxillary or  
mandibular bone tissue of said patient"**

Wong discloses claim 1[c]. Wong teaches positioning struts that "help to stabilize and position the bone foundation guide." Ex. 1006 at 7, Figs. 12, 13, 14. Wong's positioning struts ensure proper positioning of the bone foundation guide for attachment to the patient's bone tissue. *Id.* The positioning struts allow the bone foundation guide to be properly "seated[.]" *Id.* Therefore, Wong teaches claim 1[c]. Ex. 1005 at ¶¶ 283–84.

Accordingly, Wong discloses claim 7.

**xv. Claim 1[d]: "installing the fixation base to the  
maxillary or mandibular bone tissue of said patient"**

Claim 1[d] is not materially different from claims 6[a] and 6[c]. *Compare* Ex. 1001 at 9:21–22 *with id.* at 10:1–18; *see also* Ex. 1005 at ¶¶ 285–86. Wong and/or Zerhat disclose(s) claims 6[a] and 6[c]. *Supra* at 15–19, 30–32.

Accordingly, the prior art discloses claim 1[d].

**xvi. Claim 1[e]: "removing the mouthpiece from the installed fixation base"**

Wong discloses claim 1[e]. Wong's positioning struts teach claim 1[e]'s mouthpiece. *Supra* at 68. The positioning struts are "removed" from the bone foundation guide after the foundation guide is fixated to the bone tissue of the patient. Ex. 1006 at 8. This teaches claim 1[e]. Ex. 1005 at ¶¶ 287–88.

Accordingly, Wong discloses claim 1[e].

**xvii. Claim 1[f]: "removing at least one of natural teeth, dental fixtures, and obstructive mouth tissues from the work site, to expose an underside of the maxillary or mandibular bone tissue"**

Wong discloses claim 1[f]. Ex. 1006 at 7. Wong teaches that "[t]he patient's upper teeth were extracted[.]" *Id.* at 7. Figure 11 shows removal of a patient's teeth. *Id.* at Fig. 11. Therefore, Wong teaches claim 1[f]. Ex. 1005 at ¶¶ 289–290.

Accordingly, Wong discloses claim 1[f].

**xviii. Claim 1[g]: "recontouring the bone tissue"**

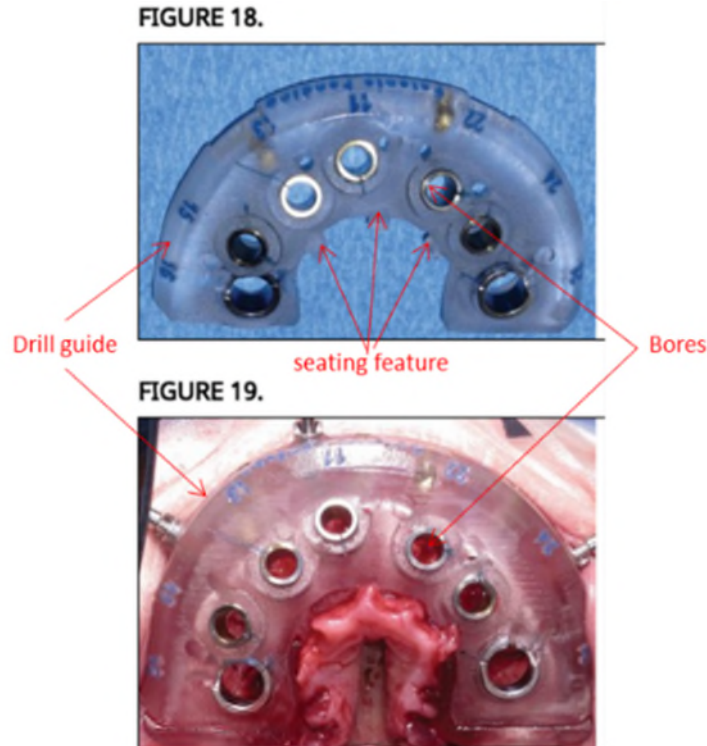
Wong discloses claim 1[g]. Wong's "foundation guide served as a bone reduction guide" and that alveolar bone was "then *smoothed using a bur* (Fig. 16)[.]" Ex. 1006 at 8. This bone reduction process teaches claim 1[g]. Ex. 1005 at ¶¶ 291–92.

Accordingly, Wong discloses claim 1[g].



- xix. **Claim 1[h]: "utilizing the second dental guide, wherein the second dental guide is a drill guide that attaches to the installed fixation base to assure appropriate location and orientation of holes to be drilled for the subsequently installed implants"**

Wong discloses claim 1[h]. Ex. 1006 at 9. Wong attaches an "implant placement guide" (Fig. 18) to the bone foundation guide so "[s]leeves . . . [can] fit within the *holes* to guide the sequential osteotomy process in *preparing the implant sites* (Figs. 20, 21)." *Id.* at 9. Figures 18 and 19 are illustrative:

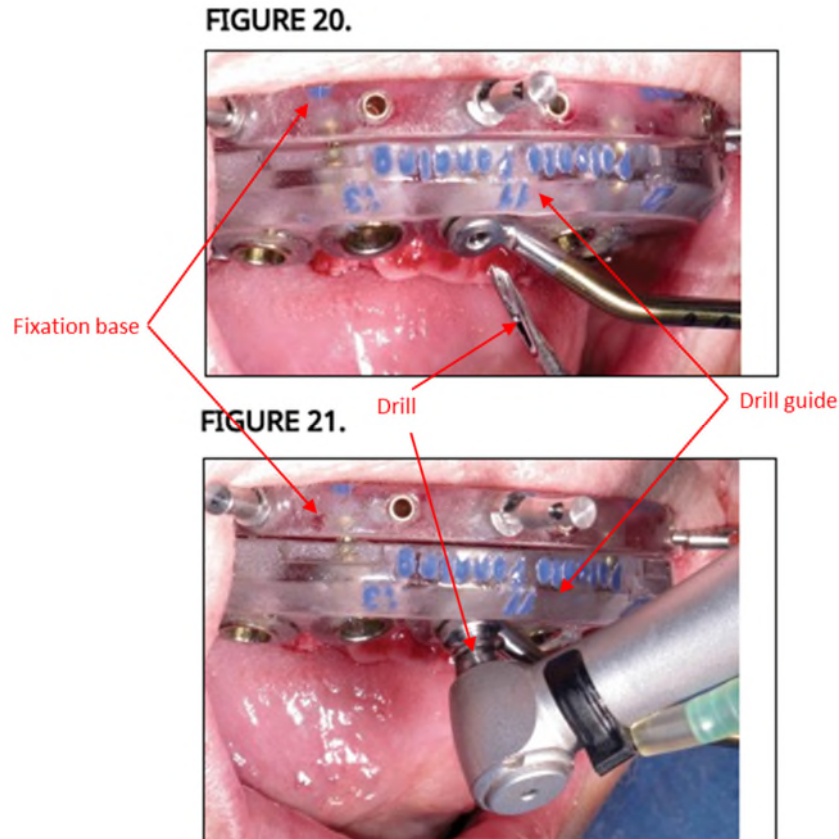


*Id.* at Figs. 18, 19. Wong's implant placement guide teaches the drill guide in claim 1[h]. Ex. 1005 at ¶¶ 293–95.

Accordingly, the prior art discloses claim 1[h].

**xx. Claim 1[i]: "drilling the implant holes in the recontoured bone tissue using the drill guide attached to the fixation base"**

Wong discloses claim 1[i]. Wong teaches an implant placement guide and corresponding methods. Ex. 1006 at 9. The implant placement guide (drill guide) is attached to the bone foundation guide (fixation base). *Id.*; Ex. 1005 at ¶ 297. Figures 20 and 21 are illustrative, showing implant holes being drilled in bone tissue using the attached implant placement guide:



*Id.* Therefore, Wong teaches claim 1[i]. Ex. 1005 at ¶ 298.

Accordingly, the prior art discloses claim 1[i].



**xxi. Claim 1[j]: "removing the drill guide from the installed fixation base"**

Wong discloses claim 1[j]. Wong teaches: "After all the implants were placed, the implant placement guide was removed from the foundation guide (Fig. 23)." Ex. 1006 at 9.

Accordingly, Wong discloses claim 1[j]. Ex. 1005 at ¶¶ 299–300.

**xxii. Claim 1[k]: "utilizing the third dental guide, wherein the third dental guide is an abutment guide base that attaches to the installed fixation base to assure appropriate location for the subsequently installed abutments"**

Wong discloses claim 1[k]. Wong teaches: "[f]ollowing implant placement, an *abutment placement guide* was placed and indexed also to fit into the foundation guide. Because angled multi-unit abutments can be placed in 1 of 6 different positions, a specific guide was created to assist in their placement to ensure correct positioning of the abutment." Ex. 1006 at 11. Therefore, Wong teaches claim 1[k]. Ex. 1005 at ¶¶ 301–302.

Accordingly, Wong discloses claim 1[k].

**xxiii. Claim 1[l]: "installing the abutments, using the abutment guide base attached to the fixation base"**

Wong discloses claim 1[l]. Wong teaches: "a specific guide was created to *assist in their placement* to ensure *correct positioning of the abutment*. The multi-

unit abutments were *placed*[" Ex. 1006 at 11; *see also id.* at Fig. 24. Therefore, Wong teaches claim 1[l]. Ex. 1005 at ¶¶ 303–304.

Accordingly, Wong discloses claim 1[l].

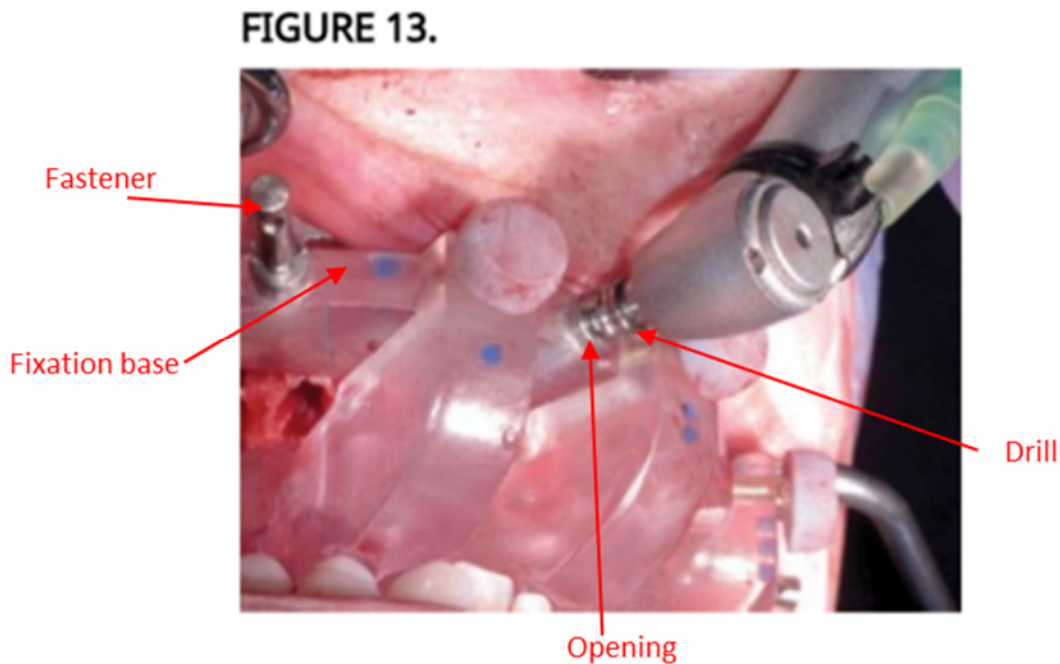
**xxiv. Claim 1[m]: "installing said dental prosthesis to the abutments"**

Wong discloses claim 1[m]. Wong teaches that: "*prosthesis was then placed onto the multi-unit abutments*[" Ex. 1006 at 14; *see also id.* at Figs. 28–33. Therefore, Wong teaches 1[m]. Ex. 1005 at ¶¶ 305–306.

Accordingly, Wong discloses claim 1[m].

**xxv. Claim 2: "The method of claim 1, wherein installing the fixation base to maxillary or mandibular bone tissue of the patient further comprises: drilling holes into the exposed forwardly facing surfaces of the bone tissue through the plurality of openings in the fixation base, and driving fasteners through the fixation base into the drilled holes, to secure the fixation base to the maxillary or mandibular bone"**

Wong discloses claim 2. Wong teaches that "guided fixation pins were placed ... *to secure the guide via engagement of the buccal and palatal bone*[" Ex. 1006 at 7 (citing Figs. 13 & 14). Figure 13 is illustrative:



*Id.* at Fig. 13. Therefore, Wong teaches claim 2. Ex. 1005 at ¶¶ 307–310.

Accordingly, Wong in view of Zerhat renders claim 2 obvious.

**xxvi. Claim 3: "The method of claim 1, wherein the step of recontouring the bone tissue comprises using a preformed surface on the installed fixation base to assure proper recontouring of the bone tissue"**

Claim 3 is not materially different from claim 1[g]. *Compare* Ex. 1001 at 9:54–57 *with* 9:28; Ex. 1005 at ¶¶ 311–312. Therefore, the prior art teaches claim 1[g]. *Supra* at 42–43, 69.

Accordingly, Wong in view of Zerhat renders claim 3 obvious.

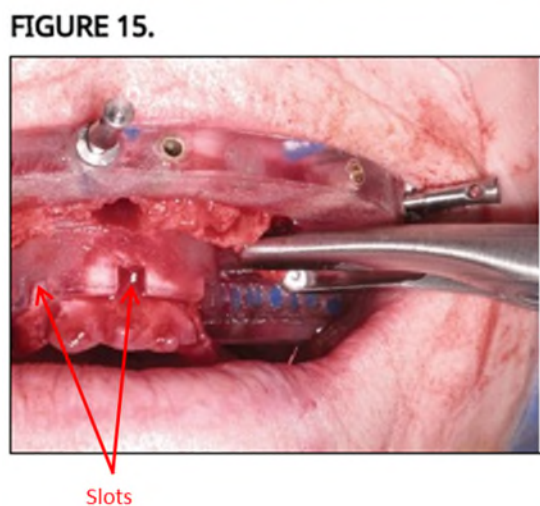
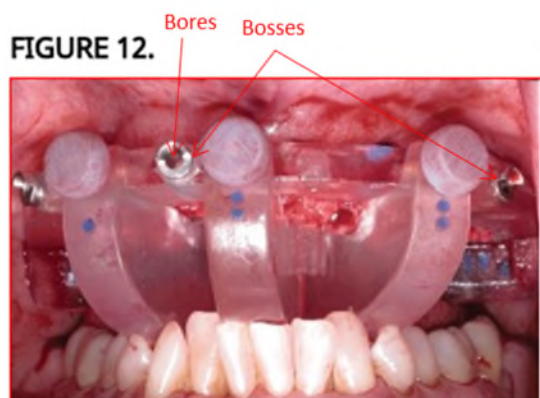
**xxvii. Claim 5: "The method of claim 1, wherein installing the abutments includes adjusting the abutments to appropriate angular orientations relative to a central axis of associated implants using pre-established indicators in the abutment guide base"**

Wong discloses claim 5. Wong teaches that "an abutment placement guide was placed and indexed also to fit into the foundation guide Because angled multi-unit abutments can be placed in 1 of 6 different positions, a specific guide was created to assist in their placement to ensure correct positioning of the abutment." Ex. 1006 at 11. Therefore, Wong teaches claim 5. Ex. 1005 at ¶¶ 313–314.

Accordingly, Wong in view of Zerhat renders claim 5 obvious.

**xxviii. Claim 7: "The apparatus of claim 6, wherein the manually releasable attachment elements of the fixation base includes: a plurality of slots in said horizontal surface of said fixation base for accepting tabs located on the dental guide; and bores and bosses extending radially from the front surface of said fixation base"**

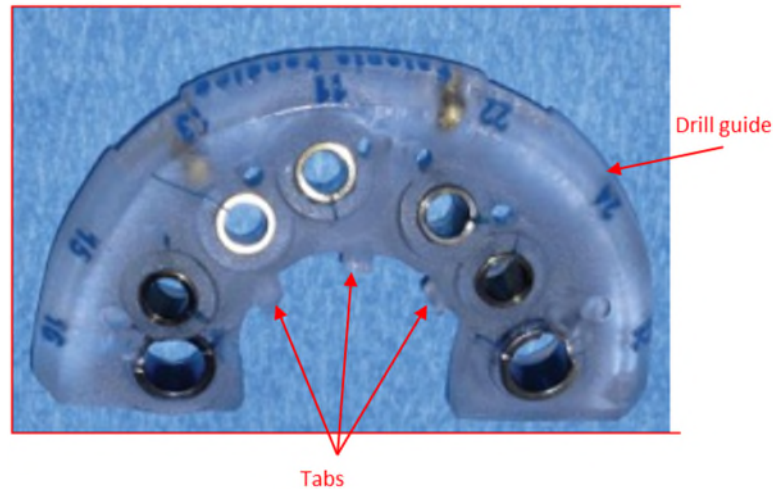
Wong discloses claim 7. Wong teaches "slots," "bores," and "bosses" on its bone foundation guide. Ex. 1006 at Figs. 12, 15. Figures 12 and 15 are illustrative:



*Id.*

Furthermore, Wong discloses "tabs" located on the dental guide that are accepted into the "slots" of the fixation base. Figure 18 is illustrative:

FIGURE 18.



*Id.* at Fig. 18. Therefore, Wong teaches claim 7. Ex. 1005 at ¶¶ 315–317.

Accordingly, Wong in view of Zerhat renders claim 7 obvious.

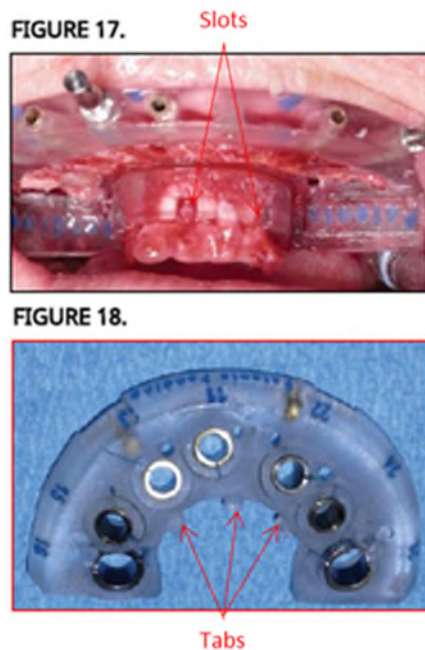
**xxix. Claim 8: "The apparatus of claim 6, further comprising a first dental guide, wherein the first dental guide is a mouthpiece configured and dimensioned to surround teeth of the patient and to releasably attach to the fixation base and to be removed after the fixation base is affixed to the maxillary or mandibular bone structure of a patient"**

Wong discloses claim 8. Wong teaches its bone foundation guide "was placed to fit over the alveolus with three struts[.]" Ex. 1006 at 7. Wong's struts "help to stabilize and position the bone foundation guide." *Id.* "Once the [bone foundation] guide was seated...guided fixation pins were placed...to secure the guide via engagement of the buccal and palatal bone[.]" *Id.* "The positioning struts were then **removed**[.]" *Id.* at 8. Therefore, Wong teaches claim 8. Ex. 1005 at ¶¶ 318–319.

Accordingly, Wong in view of Zerhat renders claim 8 obvious.

**xxx. Claim 9: "The apparatus of claim 6, wherein the manually releasable attachment elements of the fixation base includes a plurality of slots in the horizontal surface of said base member of the fixation base, wherein the dental guide includes a plurality of tabs extending toward and fitting closely with the slots of the fixation base, whereby the dental guide engages the fixation base by interfit between the slots of the fixation base and the tabs of the guide apparatus"**

Wong discloses claim 9. Wong teaches that "the implant placement guide was placed (Fig. 18) and indexed to fit into the bone foundation guide[.]" Ex. 1006 at 9. Wong's implant placement guide (i.e., dental guide) contains tabs that interfit between the slots on the bone foundation guide (i.e., fixation base) and the tabs of the implant placement guide. *Id.* at Figs. 17, 18. Figures 17 and 18 are illustrative:



*Id.* Therefore, Wong teaches claim 9. Ex. 1005 at ¶¶ 320–21.

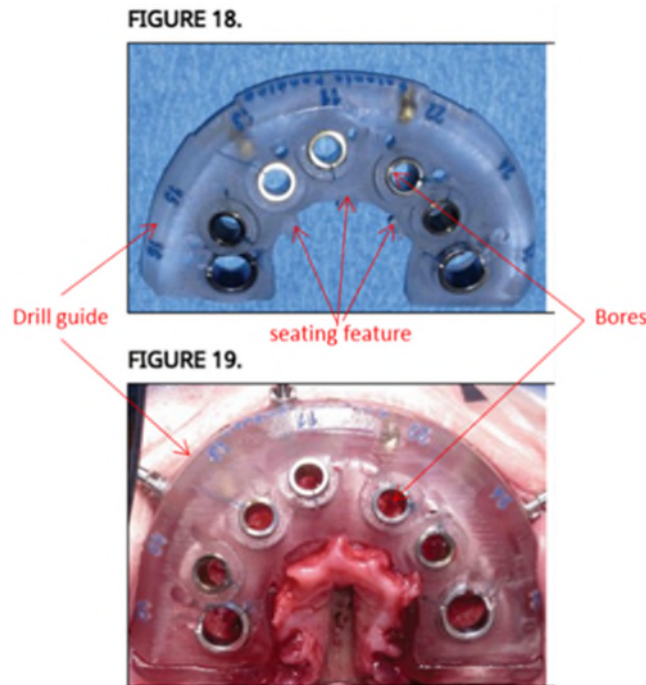
Accordingly, Wong in view of Zerhat renders claim 9 obvious.

**xxxi. Claim 10: "The apparatus of claim 6, further comprising a second dental guide, wherein the second dental guide is a drill guide for guiding drilling of holes for the implants, the drill guide attachable to the fixation base in a position wherein the drill guide is in vertical registry with the maxillary or mandibular jaw bone, the drill guide including a seating feature cooperating with the attachment elements of the fixation base, and a plurality of generally vertical bores corresponding in location to and in axial registry with intended implant sites"**

Like Zerhat, Wong discloses claim 10. Wong teaches its "implant placement guide was placed (Fig. 18) and indexed to fit into the bone foundation guide[.]" Ex. 1006 at 9 and Fig. 19. Like claim 10's drill guide, Wong's implant placement guide is attached to the bone foundation guide. *Id.* Wong discloses the "[s]leeves ...fit within the holes to guide the sequential osteotomy process in preparing the implant sites (Figs. 20, 21)." *Id.*



Figures 18 and 19 are illustrative:



*Id.* at Figs. 18, 19.

Wong's implant placement guide (drill guide): includes bores and a seating feature; is in vertical registry with the jawbone; and shows the bores are generally vertical and are in axial registry with the intended implant sites. Therefore, Wong teaches claim 10. Ex. 1005 at ¶¶ 322–24.

Accordingly, Wong in view of Zerhat renders claim 10 obvious.

**xxxii. Claim 12: "The apparatus of claim 6, further comprising a third dental guide, wherein the third dental guide is an abutment guide base including: bores sized and oriented to receive abutments and guide the abutments for placement against the implants, and wherein the abutment guide base is attachable to the fixation base in a position wherein**

**the bores are in vertical registry with the maxillary or mandibular jaw bone and the implants"**

Wong discloses claim 12. Wong teaches "an abutment placement guide...placed and indexed also to fit into the foundation guide." Ex. 1006 at 11. Wong discloses the third dental guide of claim 12. Ex. 1005 at ¶¶ 325–26.

Accordingly, Wong in view of Zerhat renders claim 12 obvious.

**xxxiii. Claim 13 [Preamble]: "A method of installing a fixation base in a maxillary or mandibular position in a mouth of a patient"**

The claim 13 preamble is irrelevant and disclosed in the prior art. *Supra* at 57.

**xxxiv. Claim 13[a]: "obtaining anatomical data of at least some of the surfaces of the maxillary or mandibular portion of the mouth of the patient"**

Wong discloses claim 13[a]. Wong teaches a scan is taken of the patient "at the ideal vertical dimension of occlusion using the bite registration." Ex. 1006 at 3. Therefore, Wong teaches claim 13[a]. Ex. 1005 at ¶¶ 328–29.

Accordingly, Wong discloses claim 13[a].

**xxxv. Claim 13[b]: "utilizing a fixation base, wherein the fixation base comprises a generally arcuate shape with a front surface that has a plurality of openings through which fasteners can be passed through, a rear surface, and attachment elements, wherein the fixation base is configured and dimensioned to fit only in front of the maxillary or mandibular bone structure of a patient and itself does not include any portion which would otherwise extend in back of the maxillary or mandibular bone structure of a patient"**

Claim 13[b] is not materially different from claims 6[a]–6[g] and 1[b]. *Compare* Ex. 1001 at 11:7–16 *with id.* at 10:4–18 and 9:1–15; *see also* Ex. 1005 at ¶ 330. Therefore, claim 13[b] is disclosed in the prior art. *Supra* at 62–67.

Accordingly, the prior art discloses claim 13[b].

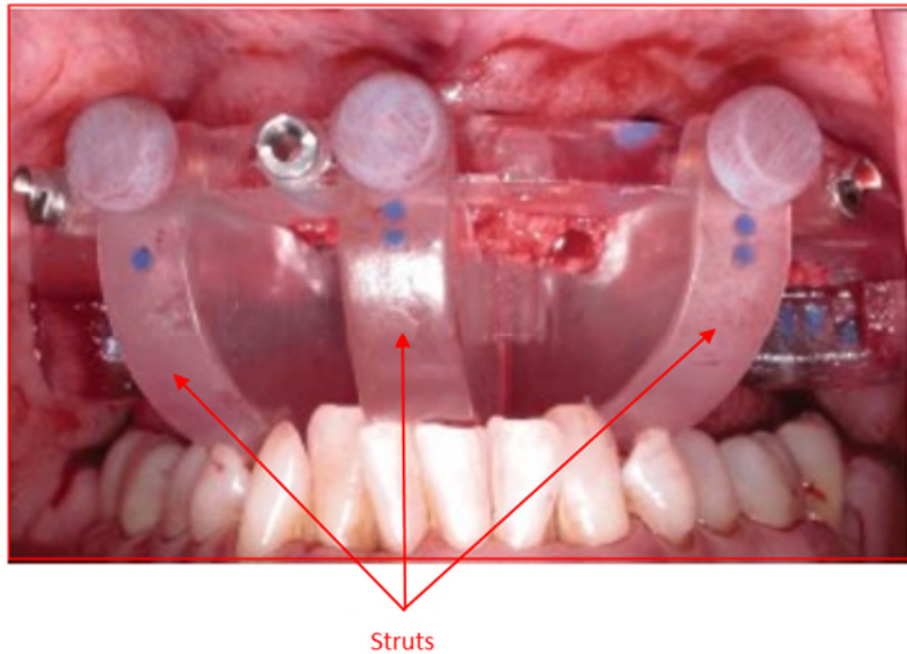
**xxxvi. Claim 13[c]: "utilizing a mouthpiece generated at least in part from the obtained anatomical data"**

Claim 13[c] is not materially different from claims 1[c] and 8. *Compare* Ex. 1001 at 11:17–18 *with id.* at 9:16–20 and 10:26–31; *see also* Ex. 1005 at ¶ 331. Therefore, claim 13[c] is disclosed in the prior art. *Supra* at 68, 77.

Accordingly, the prior art discloses claim 13[c].

**xxxvii. Claim 13[d]: "attaching the mouthpiece to the fixation base using said attachment elements"**

Wong discloses claim 13[d]. Wong teaches "three struts" that attach to its bone foundation guide "to stabilize and position the bone foundation guide" and are "removed" once the guide is seated. Ex. 1006 at 7–8. Figure 12 is illustrative:



*Id.* at Fig. 12. Therefore, Wong teaches attaching the mouthpiece as in claim 13[d].  
Ex. 1005 at ¶ 332.

Accordingly, Wong discloses claim 13[d].

**xxxviii. Claim 13[e]: "installing the mouthpiece onto at least some surfaces of the maxillary or mandibular portion of the mouth of the patient to assist in positioning the fixation base appropriately prior to installing the fixation base to maxillary or mandibular bone tissue of the patient"**

Claim 13[e] is not materially different from claims 1[c] and 8. *Compare* Ex. 1001 at 11:21–25 *with id.* at 9:16–20; and *id.* at 10:26–31; *see also* Ex. 1005 at ¶ 333. Therefore, claim 13[e] is disclosed in the prior art. *Supra* at 68, 77.

Accordingly, Wong discloses claim 13[e].

**xxxix.Claim 13[f]: "installing the fixation base to the maxillary or mandibular portions of the patient using fasteners through said plurality of openings in said front surface of the fixation base"**

Claim 13[f] is not materially different from claims 1[d], 2, 6[a], and 6[c]. *Compare* Ex. 1001 at 11:26–29 *with id.* at 9:21–22, 9:45–53, and 10:4–13; *see also* Ex. 1005 at ¶ 334. Therefore, claim 13[f] is disclosed in the prior art. *Supra* at 68–69, 74, 62, 63–64.

Accordingly, the prior art discloses claim 13[f].

**xl. Claim 13[g]: "detaching the mouthpiece from the fixation base using said attachment elements"**

Claim 13[g] is not materially different from claims 1[e] and 8. *Compare* Ex. 1001 at 11:30–31 *with id.* at 9:23; and 10:26–31; *see also* Ex. 1005 at ¶ 335. Therefore, claim 13[b] is disclosed in the prior art. *Supra* at 69, 77.

Accordingly, Wong discloses 13[g].

**d. GROUND FOUR: Claim 4 of the '016 Patent is rendered obvious under '255 Llop and/or Wong in view of Zerhat, and further in view of '881 Llop.**

**i. Overview of '881 Llop**

'881 Llop discloses a bone foundation guide and method for use in dental implant surgery. Ex. 1007, Abstract. '881 Llop's guide includes a base with additional guides (including a bone removal guide) that removably attach for use during the procedure. Ex. 1007, Abstract.

**ii. Reasons to Combine**

Zerhat, '255 Llop, Wong, and '881 Llop are in the same field of endeavor. *See* Ex. 1005 at ¶ 337. All are in the same technical field as the '016 Patent. *Id.* Each discloses methods and devices directed at guided oral surgery. *Id.* All are directed to the same type of oral surgery. *Id.* A POSITA implementing '881 Llop would have consulted references like Zerhat, '255 Llop, and/or Wong to identify alternative designs to perform guided oral surgery relating to dental prosthesis or implants. *Id.* The combination renders claim 4 invalid.

**iii. Claim 4: "The method of claim 1, wherein the step of recontouring the bone tissue comprises utilizing a fourth guide apparatus, wherein the fourth guide apparatus is a bone reduction guide that attaches to the installed fixation base to assure proper recontouring of the bone tissue"**

'881 Llop discloses claim 4. '255 Llop and/or Wong in view of Zerhat renders claim 1 obvious. *Supra* at 35–47, 67–73. '881 Llop teaches the additional limitations of claim 4.

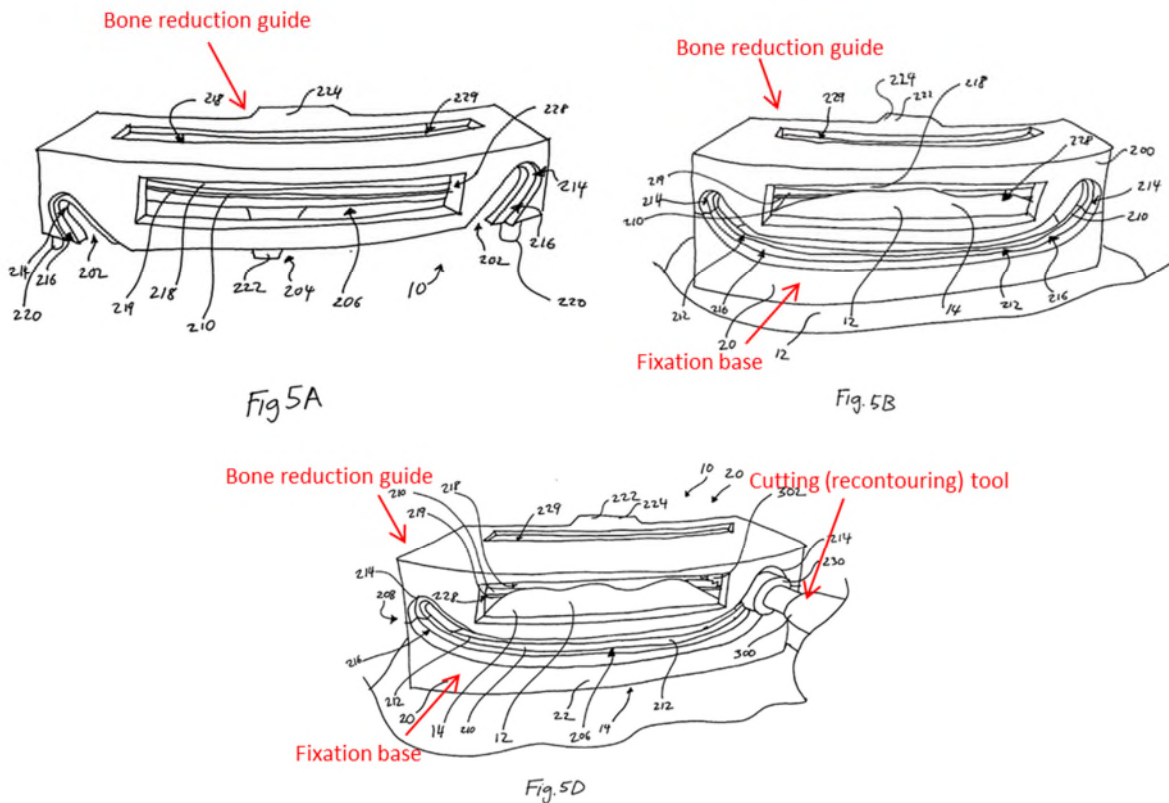
'881 Llop discloses a fourth "cutting containment guard" (200) that teaches the bone reduction guide of claim 4. Ex. 1007 at [0054]. The containment guard (200) combines "with the body 22 of the bone foundation guide 20 [and]...creates a side-located cutting slot 202." *Id.* This cutting slot (202):

substantially directs and limits the action and movement of a cutting edge 302 (e.g., of reciprocally moving saw blade 302) of a cutting

implement 300 (e.g., bone saw) that is used to cut a portion of a bone 14 of the dental surgical site 12 upon which the body 22 is located.

*Id.*

Figures 5A, 5B, and 5D are illustrative:



**XII. CONCLUSION**

There is a reasonable likelihood that Petitioner will prevail with respect to at least one Challenged Claim. Petitioner respectfully requests that Trial be instituted and that the Challenged Claims be cancelled as unpatentable.

DATED this 8th day of November, 2022.

Respectfully submitted,

/s/ Ryan K. Simmons

Ryan K. Simmons  
(Reg. No. 45848)



**CERTIFICATE OF COMPLIANCE**

I hereby certify that this petition complies with the type-volume limitations of 37 C.F.R. § 42.24, because it contains 13,952 words (as determined by the Microsoft Word word-processing system used to prepare the brief), excluding the parts of the petition exempted by 37 C.F.R. § 42.24.

This is the 8th day of November, 2022.

Respectfully submitted,

/s/ Ryan K. Simmons

Ryan K. Simmons  
(Reg. No. 45848)

**CERTIFICATE OF SERVICE**

I hereby certify, pursuant to 37 C.F.R. §§ 42.6 and 42.105, that a complete copy of the attached PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO. 11,173,016, including all Exhibits (33) and related documents, was served on the 8th of November, 2022 via UPS Overnight Delivery upon the Patent Owner by serving the correspondence address on record with the USPTO as follows:

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A courtesy copy is also being served via Email on the 8th of November, 2022 upon counsel of record for the Patent Owner in the litigation pending before the U.S. District Court Civil Case No. 22-cv-00558, *Watson Guide IP, LLC & Roe Dental Laboratory, Inc. v. Absolute Dental Services, Inc.*, as follows:

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