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UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Ormco Corporation	)	Case No. CV 03-16 CAS (ANx)
)	
Plaintiff,	)	ORDER DENYING ALIGN'S
	)	MOTION FOR SUMMARY
vs.	)	JUDGMENT OF INVALIDITY OF
	)	ORMCO'S '444 PATENT; DENYING
Align Technology, Inc.	)	ORMCO'S MOTION FOR SUMMARY
	)	JUDGMENT OF NO INVALIDITY OF
	)	ORMCO'S '444 PATENT; AND
Defendant	)	DENYING ORMCO'S MOTION TO
	)	EXCLUDE OPINIONS IN THE
	)	DECLARATION OF E. DIANE
	)	REKOW

I. INTRODUCTION

Plaintiff Ormco Corp. ("Ormco") filed the instant action against defendant Align Technology, Inc. ("Align") on January 6, 2003, alleging that Align was infringing three related Ormco patents: (1) U.S. Patent No. 5,447,432 ("the '432 patent"); (2) U.S. Patent No. 5,683,243 ("the '243 patent"); and (3) U.S. Patent No. 6,244,861 ("the '861 patent"). Ormco later amended its complaint to allege infringement of a fourth patent, U.S. Patent No. 6,616,444 ("the '444 patent").

On May 13, 2004, the Court granted Align's motion for summary judgment of

1 noninfringement of Ormco's patents. See Ormco Corp. v Align Tech, Inc., 498 F.3d
2 1307, 1311 (Fed. Cir. 2007), citing Ormco Corp. v. Align Tech., Inc., No. 03-cv-00016
3 slip. op. (C.D. Cal. May 13, 2004). On August 20, 2004, the Court granted Align's
4 motion for summary judgment of nonenablement of Ormco's patents. See id., citing
5 Ormco Corp. v. Align Tech., Inc., No. 03-cv-00016, slip. op. (C.D.Cal. Aug. 20, 2004).

6 Ormco appealed to the Federal Circuit. On August 24, 2007, the Federal Circuit
7 affirmed the Court's grant of summary judgment of noninfringement and
8 nonenablement as to claims 1, 9, and 10 of the '432 patent, claims 1 and 2 of the '243
9 patent, claims 1, 3, 4, 9-12 and 16-18 of the '861 patent, and claims 1-5, 8-36, 41-44,
10 46-68, and 70-79 of the '444 patent. Ormco, 498 F.3d at 1320. However, the court
11 reversed the grant of summary judgment of noninfringement and nonenablement of
12 claims 37-40, 45, and 69 of the '444 patent, and remanded. Id.

13 On March 24, 2008, defendant moved for a Markman hearing, requesting
14 construction of terms in the remaining '444 patent claims at issue. On October 3, 2008,
15 this Court issued an order construing claims.

16 On January 16, 2009, Ormco and Align each filed motions for summary
17 judgment on the issue of the validity of the remaining claims in the '444 patent. On
18 January 21, 2009, Ormco and Align each filed oppositions thereto. Replies were filed
19 on February 2, 2009. A hearing was held on February 9, 2009. After carefully
20 considering the arguments set forth by the parties, the Court finds and concludes as
21 follows.

22 **II. THE '444 PATENT**

23 The '444 patent, which is the only patent at issue herein, is a patent for "a system
24 and method by which an orthodontic appliance is automatically designed and
25 manufactured from digital low jaw and tooth shape data . . ." The '444 Patent, Abstract.
26 The system involves scanning a model of the patient's mouth to "produce two or three
27 dimensional images and digitizing contours of selected points." Id. The system allows
28 for a computer to be programmed "to calculate finish positions of the teeth, then to

1 design an appliance to move the teeth to the calculated positions.” Id.

2 In its decision overturning the Court’s granting of summary judgment for
3 defendant on claims 37-40, 45, and 69 of the ‘444 patent, the Federal Circuit
4 distinguished these claims from the others on the ground that claims 37-40, 45, and 69
5 did not relate to “automatic design or automatic calculation of finish tooth positions.”
6 Ormco, 498 F.3d at 1317. Instead, the Court held, they relate to “the preliminary
7 gathering and organization of tooth data as an aid to further unspecified orthodontic
8 treatment or for use in creation of a digital model.” Id. Because defendant relies on
9 “skilled operators rather than a fully automated computerized process to determine
10 finish positions of the teeth,” summary judgment was proper as to those claims that
11 referred to automatic calculation or design but not to the six claims at issue. Id.

12 **III. LEGAL STANDARD**

13 **A. Summary Judgment**

14 Summary judgment is appropriate where “there is no genuine issue as to any
15 material fact” and “the movant is entitled to a judgment as a matter of law.” Fed. R.
16 Civ. P. 56(c). The moving party has the initial burden of identifying relevant portions
17 of the record that demonstrate the absence of a fact or facts necessary for one or more
18 essential elements of each cause of action upon which the moving party seeks judgment.
19 See Celotex Corp. v. Catrett, 477 U.S. 317, 323 (1986).

20 If the moving party has sustained its burden, the nonmoving party must then
21 identify specific facts, drawn from materials on file, that demonstrate that there is a
22 dispute as to material facts on the elements that the moving party has contested. See
23 Fed. R. Civ. P. 56(c). The nonmoving party must not simply rely on the pleadings and
24 must do more than make “conclusory allegations [in] an affidavit.” Lujan v. National
25 Wildlife Fed’n, 497 U.S. 871, 888 (1990). See also Celotex Corp., 477 U.S. at 324.
26 Summary judgment must be granted for the moving party if the nonmoving party “fails
27 to make a showing sufficient to establish the existence of an element essential to that
28 party’s case, and on which that party will bear the burden of proof at trial.” Id. at 322.

1 See also *Abromson v. American Pacific Corp.*, 114 F.3d 898, 902 (9th Cir. 1997).

2 In light of the facts presented by the nonmoving party, along with any undisputed
3 facts, the Court must decide whether the moving party is entitled to judgment as a
4 matter of law. See *T.W. Elec. Serv., Inc. v. Pacific Elec. Contractors Ass’n*, 809 F.2d
5 626, 631 n.3 (9th Cir. 1987). When deciding a motion for summary judgment, “the
6 inferences to be drawn from the underlying facts . . . must be viewed in the light most
7 favorable to the party opposing the motion.” *Matsushita Elec. Indus. Co. v. Zenith*
8 *Radio Corp.*, 475 U.S. 574, 587 (1986) (citation omitted); *Valley Nat’l Bank of Ariz. v.*
9 *A.E. Rouse & Co.*, 121 F.3d 1332, 1335 (9th Cir. 1997). Summary judgment for the
10 moving party is proper when a rational trier of fact would not be able to find for the
11 nonmoving party on the claims at issue. See *Matsushita*, 475 U.S. at 587.

12 **B. Invalidity**

13 Pursuant to 35 U.S.C. § 282, all patents are presumed valid, and the burden of
14 establishing invalidity, by reason of either lack of novelty (“anticipation”) or
15 obviousness, rests upon the party asserting invalidity.¹ The statute presumes each claim
16 of a patent to be valid independently of the validity of the other claims. *Id.* The
17 presumption of patent validity may be rebutted only by a showing of “clear and
18 convincing evidence.” *Saf-Gard Products, Inc. v. Service Parts, Inc.*, 532 F.2d 1266,
19 *1271 (9th Cir. 1976).* “The burden of persuasion on invalidity must, under the statute,
20 remain at all times on the party asserting invalidity, although that burden may be carried
21 more easily by evidence consisting of more pertinent prior art than that considered by

22 ¹ 35 U.S.C. § 282 states in pertinent part:

23
24 A patent shall be presumed valid. Each claim of a patent (whether in
25 independent or dependent form) shall be presumed valid independently of the
26 validity of other claims; dependent claims shall be presumed valid even
27 though dependent upon an invalid claim. The burden of establishing
28 invalidity of a patent or any claim thereof shall rest on the party asserting it.

1 the examiner.” RCA Corp. v. Applied Digital Data System, Inc., 730 F.2d 1440, 1444
2 (Fed. Cir. 1984).

3 A patent claim is anticipated under 35 U.S.C. § 102, only when each and every
4 element of a claim at issue is found either expressly or inherently in a single prior art
5 reference. Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.,
6 976 F.2d 1559, 1565 (Fed. Cir. 1992); Bristol-Myers Squibb v. Ben Venue
7 Laboratories, Inc., 246 F.3d 1368, 1374 (Fed. Cir. 2001). In addition, “the prior art
8 reference . . . must not only disclose all elements of the claim within the four corners of
9 the document, but must also disclose those elements arranged as in the claim.” Net
10 Moneyin, Inc. v. Verisign, Inc., 545 F.3d 1359, 1369 (Fed. Cir. 2008). Furthermore,
11 “[t]o serve as an anticipating reference, the reference must enable that which it is
12 asserted to anticipate.” Elan Pharms, Inc. v. Mayo Found. For Med. Educ. & Research,
13 346 F.3d 1051, 1054 (Fed. Cir. 2003). In other words, “[t]o anticipate, the reference
14 must also enable one of skill in the art to make and use the claimed invention.”
15 Bristol-Myers Squibb, 246 F.3d at 1374.

16 “Whether an invention is anticipated is a question of fact.” Elan Pharms, 346
17 F.3d at 1054. “When the examiner considered the asserted prior art and basis for the
18 validity challenge during patent prosecution,” the burden on the party asserting
19 invalidity “becomes particularly heavy.” Impax Labs., Inc. v. Aventis Pharms. Inc., 545
20 F.3d 1312, 1314 (Fed. Cir. 2008).

21 A patent claim may also be invalid as obvious under 35 U.S.C. § 103 “if the
22 differences between the subject matter sought to be patented and the prior art are such
23 that the subject matter as a whole would have been obvious at the time the invention
24 was made to a person having ordinary skill in the art to which said subject matter
25 pertains.” Obviousness is ultimately a legal question, based on underlying factual
26 determinations. Eisai Co. Ltd. v. Dr. Reddy’s Labs., Ltd., 533 F.3d 1353, 1356 (Fed.
27 Cir. 2008). The factual determinations underlying the question of obviousness are “1)
28 the scope and content of the prior art, 2) the level of ordinary skill in the art, 3) the

1 differences between the claimed invention and the prior art, and 4) evidence of
2 secondary factors, also known as objective indicia of non-obviousness.” Id.

3 **IV. DISCUSSION**

4 **A. Align’s Motion for Summary Judgment of Invalidity of the Remaining** 5 **Claims of the ‘444 patent**

6 Align moves for summary judgment, arguing that, as a matter of law, the
7 remaining claims of the ‘444 patent – claims 37, 38, 39, 40, 45, and 69 (“the remaining
8 claims”) – are invalid.

9 **1. Prior Art References**

10 Align argues that the remaining claims in Ormco’s ‘444 patent are invalid,
11 because they are not novel as required by 35 U.S.C. § 102 and are therefore anticipated.
12 Align’s arguments of anticipation center around two particular prior art references: (1)
13 an article published by Denis Laurendeau entitled “A Computer-Vision Technique for
14 the Acquisition and Processing of 3-D Profiles of Dental Imprints: An Application in
15 Orthodontics” (the “Laurendeau reference”) and (2) U.S. Patent No. 4,611,288, issued
16 pursuant to a patent application filed by Francois Duret (the “Duret patent”).

17 The Laurendeau reference describes a system of computer-assisted classification
18 of skeletal and dental malocclusions, or misalignments of teeth. Mot. at 7-8; SUF ¶ 16;
19 SGI ¶ 16. Specifically, the Laurendeau reference describes a technique whereby a
20 patient bites into a piece of wax, and subsequently the wax impressions are scanned
21 using a laser scanner in order to generate 3D images of the dental imprints for the
22 detection of interstices between the teeth. See Laurendeau reference at 453, 461.

23 The Duret patent discloses a system whereby “[d]ental prostheses, such as
24 crowns, inlays or dentures are produced automatically based upon an optical impression
25 taken of the oral region with nontraumatic radiation.” Duret Patent, Abstract. The
26 optical device captures 3D data of a stump of a tooth where dental restoration, such as a
27 crown, was to be added. SUF ¶ 24; SGI ¶ 24. Data associated with the tooth stump is
28 identified in order to determine the shape of the interior portion of the crown to fit over

1 the stump. SUF ¶ 28; SGI ¶ 28. In addition, data relating to the teeth adjacent to the
2 stump is identified from the scan in order to determine the boundaries of the area for the
3 crown. SUF ¶ 27; SGI ¶ 27. The Duret patent was considered by the Patent Office
4 prior to issuing the ‘444 patent. Ormco’s Additional Undisputed Facts ¶ 84; Align’s
5 Response to Ormco’s Additional Undisputed Facts ¶ 84.

6 **2. Claim 37**

7 Align argues first that claim 37 in the ‘444 patent is anticipated by the
8 Laurendeau reference. Claim 37 provides:

9 A method of processing digital data for use in facilitating the
10 orthodontic treatment of a patient comprising: scanning three-
11 dimensional surfaces that have the shapes of a plurality of the teeth
12 of a patient and generating data thereof; from the generated data,
13 producing separate digital representations of the shapes of each of
14 a plurality of individual teeth of the patient.

15 ‘444 Patent, Col. 71: 21-29.

16 **a. First Element of Claim 37: “Scanning Three- 17 Dimensional Surfaces That Have the Shapes of a 18 Plurality of the Teeth of a Patient and Generating 19 Data Thereof”**

20 Align argues that the first element of claim 37 – “scanning three-dimensional
21 surfaces that have the shapes of a plurality of the teeth of a patient and generating
22 data thereof” – is anticipated, because the Laurendeau reference discloses scanning
23 3D wax impressions of the shapes of the occlusal surfaces (i.e. the biting or
24 chewing surfaces) of a plurality of teeth in a patient’s jaws using a 3D scanner and
25 generating data thereof. Mot. at 10. The Laurendeau reference, in its own words,
26 describes “a computer vision technique for the acquisition of the 3-D profiles of
27 dental imprints recorded on a wax dental bite wafer, and an algorithm for the
28 detection of the interstices between the teeth . . .” Mot. at 11; SUF ¶ 32;

1 Laurendeau Reference at 454. Align notes that Ormco’s expert, Dr. Roberts
2 (“Roberts”), has admitted that a scan of a wax bite, as disclosed in the Laurendeau
3 reference, would result in undifferentiated data of partial shapes of a plurality of
4 teeth. Mot. at 11; SUF ¶ 34; SGI ¶ 34.

5 Ormco, however, argues that the Laurendeau reference does not, in fact,
6 disclose the generation of data containing the “shapes” of a plurality of teeth.
7 Opp’n at 4. The crux of Ormco’s argument, as set forth by Roberts, is that the
8 Laurendeau reference fails to disclose the scanning of separate 3D tooth shapes and
9 does not produce 3D representations of individual teeth. Miotke Decl. Ex. 2
10 (Roberts Report) at 15. Roberts states that, in determining whether prior art
11 references disclosed the generation of data from an undifferentiated scan of a
12 plurality of teeth, Roberts looked for the disclosure of tooth shape data similar to
13 that disclosed in the ‘444 patent; in particular, Roberts looked for shape data that
14 included the tooth undercuts (the portion of the tooth that lies between its height of
15 contour and the gingivae), which, he argues, are necessary for modeling orthodontic
16 treatment. Opp’n at 5; Motke Decl., Ex. 2 (Roberts Report) at 14-15 (“even in its
17 most basic example, the ‘444 patent discloses a 3D shape that includes a precise 2D
18 profile, of the clinical crown from the occlusal surface to the gingival margin, as
19 well as its full width in the mesio-distal direction”). Ormco argues that the wax bite
20 scanned in the Laurendeau reference only captures the tooth’s occlusal surface, and
21 not the height of the tooth or the tooth’s shape below the occlusal surface. Opp’n at
22 4. Therefore, Ormco argues, the scan of the wax bite is not a scan of “three-
23 dimensional surfaces that have the shapes of a plurality of the teeth.” Opp’n at 4.
24 Ormco argues that this position is consistent with the testimony of both Roberts,
25 Ormco’s expert, and Dr. Rekow (“Rekow”), Align’s expert, who have testified that
26 an orthodontist referring to the “shape” of a tooth would commonly understand it to
27 refer to the entire exposed portion of the tooth, i.e. the clinical crown. Opp’n at 5;
28 Miotke Opp. Dec. Ex. 7 (Rekow Dep.) at 189:14-191:10 (confirming that the

1 typical or ordinary meaning for three-dimensional tooth shapes for orthodontists
2 would be either the “clinical crown,” “the clinical crown, plus the roots,” or the
3 “anatomical crown, plus the roots.”)

4 Align, however, argues that, in taking this position, Ormco is attempting to
5 add an additional limitation to the term “shape” so as to require that the term
6 include the “entire clinical crown” that is visible in the mouth. Mot. at 11; SUF ¶
7 37; Roberts Dep. at 338: 17-24 (“as I read it, that would imply the shape of a tooth,
8 the entire clinical crown of a tooth, yes”). Align argues that Ormco did not argue
9 for this construction of the term “shape” during the Markman hearing, and that
10 Roberts’ explanation for this construction is unsatisfactory. Mot. at 11-12; SUF ¶
11 38; Roberts Dep. 342:9-14 (“Q: So if I were to go to an orthodontic textbook and
12 look at how they use the word shape, you would expect that that would be the entire
13 physical clinical crown? A: I think that would probably be true for all of dental
14 anatomy, not just orthodontics”). Furthermore, Align argues that deposition
15 testimony of Ormco’s other expert, Dr. Hall (“Hall”), contradicts Ormco’s
16 argument that “shape” is limited to a shape necessary for orthodontic treatment:

17 Q: In a single prior art reference, would you need that prior art
18 reference to disclose the shapes of teeth necessary for orthodontic
19 treatment in order to anticipate claim 37?

20 A: I believe my answer is no. If it could still scan three
21 dimensional surfaces of teeth and allow those to be used as the
22 data to produce separate digital representation of the shapes of a
23 plurality of teeth, then that would seem to satisfy claim 37.

24 Mot. at 12; SUF ¶ 12; Hall. Dep. 101:4-23. Furthermore, Align argues, Hall
25 indicated that even if the term “shape” were to be limited to a shape needed for
26 orthodontic treatment, this would not necessarily require the full clinical crown.
27 Mot. at 12; SUF ¶ 41; Hall. Dep. 99:7-11 (“I can envision cases where I just need
28 one point of contact to attach a bracket. And other cases where maybe the full three

1 dimensional shape is needed to determine how much to rotate or tip a tooth”).

2 Therefore, Align argues, nothing in the patent requires “shapes” to be limited to the
3 “entire clinical crown,” because, even assuming it was necessary to have enough
4 shape for orthodontic treatment, the full clinical digital crown information is not
5 required.² Mot. at 12.

6 **b. Second Element of Claim 37: “From the Generated**
7 **Data, Producing Separate Digital Representations of**
8 **the Shapes of Each of a Plurality of Individual Teeth**
9 **of the Patient.”**

10 Align argues that the Laurendeau reference discloses the second element of
11 claim 37: “from the generated data, producing separate digital representations of the
12 shapes of each of a plurality of individual teeth of the patient.” First, Align argues,
13 the Laurendeau reference discloses detection and identification of interstices
14 between the teeth and association of data with individual teeth. Mot. at 13; SUF ¶
15 35; See Laurendeau Reference (“The 3-D image of each side of the imprint is
16 segmented by nonlinear filtering of the 3-D data, and the interstices between the
17 teeth are detected”). After the interstices between teeth are identified, Align argues,
18 the orthodontic parameters of each tooth within the scanned data can be identified.³

19
20 ²Align also argues that regardless, claim 37 is not directed to orthodontic treatment
21 of a patient, because the preamble “facilitating orthodontic treatment” is not a limitation
22 on the claim. Ormco disputes the assertion that the preamble should not be read into the
23 claim. The Court need not reach this issue in deciding the motions for summary judgment
24 herein.

25 ³ Align argues that Roberts testified to this effect:

26 Q. And by identifying interstices, wouldn't that enable one to identify the
27 position of each tooth within the scanned data?

28 [objection omitted]

(continued...)

1 Mot. at 14. Align argues that, in fact, the Laurendeau reference explicitly indicates
2 that positions of each individual tooth must first be identified from the
3 undifferentiated dental imprint, and that subsequently, the orthodontic parameters
4 are identified. Mot. at 14, citing Laurendeau Reference at 454 (“The computation
5 of the orthodontic parameters listed in Table 1 requires a prior knowledge of the
6 position of each tooth on the dental imprint”). Align argues that “identification of
7 the position of each tooth within the scanned data necessarily requires that data be
8 associated with particular teeth. As data is being associated with particular teeth,
9 separate digital representations are being produced.”

10 Mot. at 14.

11 Align also argues that Figure 8 in the Laurendeau reference identifies
12 particular teeth, which is confirmed by the discussion of the figure, which states
13 “The plots of f1(s) and f2(s) consist of peaks, valleys, and plateaus as shown in
14 figure 8. Peaks of large amplitude mostly correspond to the interstices between the
15 teeth . . . Valleys correspond to teeth.” Swanson Decl. Ex 4 (Laurendeau
16 Reference) at 457. Align further argues that Roberts confirmed this by testifying
17 that the occlusal surfaces of each individual tooth are disclosed in Figure 8, and that
18 the data in Figure 8 are segmented on a tooth-by-tooth basis. Mot. at 15; SUF ¶ 51;
19 Roberts Dep. 583: 17-23 (“so the valleys would be more the occlusal surface of the
20 tooth”) 584: 19-25 (confirming that the data in Figure 8 is “segmented on a tooth-
21 by-tooth basis”).

22 ³(...continued)

23
24 In theory, yes, you would be able to identify if the interstices, if you can – if
25 your interstices is accurate, you could just move from interstice to interstice
26 if you know that there are two incisors, if you know there is one canine. If
27 you already know that, you would know what this means; otherwise, you
28 would not know that. If there’s a missing incisor, or if there’s a missing
bicuspid, then you would not know that. All you would know there’s
interstices that is picked up that’s one of these peaks in the colorimetric chart.

1 Ormco, however, argues that while the Laurendeau reference discloses that
2 “[t]he 3-D image of each side of the [wax] imprint is segmented by nonlinear
3 filtering of the 3-D data, and the interstices between the teeth are detected,” this
4 segmentation does not create separate 3D representations of the individual teeth or
5 the shapes of those teeth, but instead results in nothing more than an identification
6 of the spaces between the occlusal surfaces of the teeth. Opp’n at 6; Miotke Decl.
7 Ex. 2 (Roberts Report) App. B at 3 (“Laurendeau et al. describes the identification
8 of interstices between teeth but does not provide any disclosure regarding the
9 production of separate digital representations of teeth from undifferentiated 3D
10 data”). Furthermore, Ormco argues, because the Laurendeau reference does not
11 identify individual teeth, the computer does not associate any data points with any
12 identifiable tooth. Opp’n at 7-8; Miotke Opp. Decl. Ex. 1 (Hall Report) at 15 (“The
13 tooth data that is taken from a scan of the wax bite is initially undifferentiated.
14 Although interstices between the teeth are later found, there is no disclosure in
15 Laurendeau that suggests that the underlying undifferentiated tooth data is altered in
16 any way. And given the goal of finding interstices rather than tooth data, there is no
17 reason to assume that such data processing is occurring.”)

18 Furthermore, Ormco argues that Figure 8, referenced by Align, does not
19 support Align’s argument; although Figure 8 presents a chart showing the data
20 generated, and states that the valleys of the functions depicted in Figure 8
21 “correspond to teeth,” Figure 8 does not capture the actual shapes of the teeth and
22 does not generate individual tooth shape representations, and, Ormco argues, “one
23 could note a correspondence between the depressions in the wax bite and teeth
24 without creating any digital representations of anything.” Opp’n at 8.

25 Ormco also argues that Align has not met its burden in showing by clear and
26 convincing evidence that a person of ordinary skill in the art could make and use the
27 claimed invention based on the prior art without undue experimentation. See
28 Amgen, 457 F.3d at 1306-07. Specifically, Ormco notes that the conclusion of the

1 Laurendeau references states that “the next step in the development of the automatic
2 diagnosis system will be to identify the type of teeth and measure the orthodontic
3 parameters.” Miotke Decl, Ex. 7 (Laurendeau Reference) at 461. Ormco argues
4 that the failure to teach the step of identifying teeth renders the Laurendeau
5 reference incapable of serving as an anticipatory reference.

6 With regard to the second element of claim 37, the Court agrees with Ormco
7 that Align has not met its burden to establish by clear and convincing evidence that
8 claim 37 is anticipated by the Laurendeau reference.⁴ In particular, the Court is not
9 convinced that the Laurendeau reference discloses the production of “separate
10 digital representations of the shapes of each of a plurality of individual teeth.” See
11 ‘444 patent. Instead, it appears that the Laurendeau reference may, as Ormco
12 argues, primarily disclose the identification of interstices between the teeth, which
13 may not in and of itself be sufficient to anticipate claim 37. Furthermore, the
14 Laurendeau reference’s statement that “the next step in the development of the
15 automatic diagnosis system will be to identify the type of teeth and measure the
16 orthodontic parameters” further contradicts Align’s argument that the Laurendeau
17 reference teaches the second element of claim 37. Therefore, the Court concludes
18 that Ormco has demonstrated that there are genuine issues of material fact regarding
19 anticipation, and summary judgment is inappropriate.

20 Because claims 38, 39, and 40 are dependent claims of claim 37, the Court
21 notes as a preliminary matter that its finding with regard to claim 37 would
22 generally preclude Align from establishing that the dependent claims are
23 anticipated. See, e.g., In re Royka, 490 F.2d 981, 985 (“The dependent claims
24 rejected with claim 28, as anticipated under § 102, are not anticipated since claim
25

26 ⁴ Because Align has not met its burden with regard to the second element of claim
27 37, the Court need not reach the question of whether it met its burden with regard to the
28 first element of claim 37. However, the Court notes that it declines to find as a matter of
law that the term “shape” necessarily requires the full clinical crown.

1 28 is not anticipated.”) Nevertheless, the Court considers the merits of Align’s
2 arguments with regard to these dependent claims as well.

3 **3. Claim 38**

4 Align argues that claim 38 is also anticipated by the Laurendeau reference.
5 Claim 38, a dependent claim of claim 37, states:

6 The method of claim 37 wherein: the producing of the separate
7 digital representations from the generated data includes the
8 operator-interactive selection on a computer display of landmark
9 parameters of individual teeth.

10 Align argues that the Laurendeau reference anticipates claim 38, because it
11 discloses the operator interactive selection of landmark parameters of individual
12 teeth, including: (1) the interstices between the teeth and (2) orthodontic parameters
13 that define relationships between the teeth. Mot. at 16. In particular, Align argues,
14 “the Laurendeau reference disclosed a system where an automated algorithm along
15 with limited operator interaction determined interstices in the teeth (attributes of the
16 teeth derived from locations on the teeth that can be used for modeling tooth
17 movement).” Mot. at 16. Align cites Table 1 of the Laurendeau reference, which
18 identifies “orthodontic parameters” and notes that Roberts, Ormco’s expert,
19 confirmed that the sagittal canine relation and sagittal molar relation parameters,
20 both listed in Table 1 of the Laurendeau reference, are attributes of teeth that could
21 be used to model tooth movement, and that, to determine these attributes used for
22 modeling tooth movement, one would have to identify points on teeth (i.e. landmark
23 parameters). Mot. at 16, citing Roberts Dep. at 395:11-396:3 (“[the sagittal molar
24 relation is] primarily for looking at the orthopaedic change and the way that the
25 patient actually bites . . . [but] could provide some information under some
26 circumstances . . . for modeling tooth movement”).

27 Align argues that Roberts has attempted to avoid invalidity by adding a new
28 requirement to claim 38: that the attributes derived from locations on teeth must be

1 used to actually move teeth to final positions. Mot. at 16; SUF ¶ 61; Roberts Dep.
2 762:17-763:5 (“[Q:] But in terms of actually modeling within the computer tooth
3 movement, is it your view that in order to be a landmark parameter, the locations on
4 the tooth must be able to successfully model the movement of the teeth from initial
5 position to some final position . . . [A:] I think so. . . There could be multiple
6 landmark parameters that, according to the definition of the Court, that is a
7 possibility, yes.”). Similarly, Align cites Ormco’s other expert, Hall, who stated
8 “as I understand it, the locations on the tooth would have to be used to derive
9 attributes of the tooth for modeling tooth movement, so some deliberate attributes
10 that could be used in modeling tooth movement would have to be present.” Mot. at
11 17; Hall Dep. 129:15-20. Align argues that this is contrary to the Court’s claim
12 construction order, which, although holding that landmark parameters are defined
13 as “locations on the tooth used to derive attributes of the tooth for modeling tooth
14 movement,” held that the landmark parameters requirement “merely defines which
15 specific locations on the tooth are chosen in the step described in claim 38,
16 regardless of whether or not representations of the teeth are eventually moved to
17 finish tooth positions.” Mot. at 17, citing October 3, 2008 order.

18 Ormco, however, argues that the Laurendeau reference does not disclose
19 “landmark parameters.” Ormco notes that it is undisputed that the Laurendeau
20 reference does not disclose movement of teeth or modeling the movement of teeth.
21 Opp’n at 13. Furthermore, Ormco argues, Align’s argument that the sagittal canine
22 relation and sagittal molar relation parameters, both listed in Table 1 of the
23 Laurendeau reference, are attributes of teeth that can be used for modeling tooth
24 movement does not lead to the conclusion that landmark parameters are disclosed in
25 the Laurendeau reference, because “applying hindsight to state the attributes ‘can
26 be’ used for modeling tooth movement” is not consistent with the court’s
27 construction that landmark parameters be attributes of the tooth “for modeling tooth
28 movement.” Opp’n at 13-14. Ormco argues that Align’s expert, Rekow, has

1 admitted that he is essentially reading in “*capable* of modeling tooth movement” as
2 a clause into the claim. Mot. at 13; SUF ¶ 67. Furthermore, Rekow stated that, in
3 determining whether specific attributes of teeth qualify as landmark parameters, he
4 did not take into account how much work it would take to model tooth movement.
5 Mot. at 13; SUF ¶ 68. Ormco argues that even if the parameters listed in the
6 Laurendeau reference could, in hindsight, be used to model tooth movement, the
7 reference does not teach claim 38, because it has nothing to do with modeling
8 movement of teeth and does not even express this possible use of the tooth
9 locations. Opp’n at 14. Ormco argues that to read “capable of” into the claim is
10 unduly expansive and against the Court’s construction. Opp’n at 14.

11 The Court finds that Ormco is correct that Align has failed to establish that
12 claim 38 discloses the selections of landmark parameters. Align’s reading of
13 landmark parameters as an attribute of the tooth “capable” of modeling tooth
14 movement appears to be contrary to the Court’s October 3, 2008 claim construction
15 order, which construed landmark parameters as “locations on the tooth used to
16 derive attributes of the tooth for modeling tooth movement.” As the Court stated in
17 that order, this construction is not contrary to the holding of the Federal Circuit,
18 because this construction does not require that the teeth actually be moved to finish
19 tooth positions, but instead “defines which specific locations on the tooth are
20 chosen in the step described in claim 38.” In other words, the “for modeling tooth
21 movement” construction reflects the purpose for which the attributes of the specific
22 teeth are selected. Therefore, Align’s argument that this construction includes any
23 attributes of the tooth which, in hindsight, could have been “capable of modeling
24 tooth movement,” even if the attributes were not selected for that purpose, appears
25 overly broad. As a result, the Court finds that Align has failed to meet its burden in
26 establishing that the Laurendeau reference teaches the selection of landmark
27 parameters.

28 4. Claim 39 and Claim 40

1 Align also argues that the Laurendeau reference discloses the additional
2 limitations of claim 39 and claim 40. Claim 39 states:

3 The method of claim 37 wherein: the producing of the separate
4 digital representations from the generated data includes
5 representing each of the plurality of teeth by a two-dimensional
6 contour.

7 Claim 40 states:

8 The method of claim 37 wherein: the producing of the separate
9 digital representations from the generated data includes separating
10 an image of the plurality of teeth into individual data-sets each
11 representing an individual tooth

12 Specifically, Align argues that claim 39 is anticipated, because the
13 Laurendeau reference discloses that during the producing of the separate digital
14 representations, 2D contours, used to represent teeth, are generated from the 3D data
15 along the curved axis of the dental imprint. Mot. at 17; SUF ¶¶ 49, 64, 65. Align
16 also argues that claim 40 is anticipated by the Laurendeau reference, because the
17 Laurendeau reference discloses using an image on a screen to produce separate
18 digital representations. Mot. at 18; SUF ¶ 43; Laurendeau reference at 457 (“the
19 first segmentation step is to complete the coordinates of the center point of the top
20 horizontal line of the WR-image”).

21 However, the Court finds that because Align has failed to establish that the
22 Laurendeau reference discloses the production of separate digital representations of
23 individual teeth, summary judgment with regard to claims 39 and 40 is
24 inappropriate.

25
26 **5. Claim 45**

27 Align argues that claim 45 is anticipated by the Duret patent. Claim 45 states:

28 A method of processing digital data for use in facilitating the

1 orthodontic treatment of a patient comprising: scanning the shapes
2 of the teeth of a patient directly from the mouth of a patient and
3 generating data thereof; grouping the generated data into separate
4 digital representations of the shapes of each of a plurality of
5 individual teeth.

6 Align first argues that the Duret patent discloses the first part of claim 45, in
7 that it teaches using a three-dimensional laser optical probe to scan a plurality of
8 teeth directly from the mouth. SUF ¶ 69.

9 Align further argues that the Duret patent discloses the second part of claim
10 45: “grouping the generated data into separate digital representations of the shapes
11 of each of a plurality of individual teeth.” Mot. at 19. Specifically, Align argues
12 that the Duret patent

13 . . . disclosed the necessity of grouping data into separate digital
14 representations in order to determine the volume defined by six
15 planes to create the outer surface of the prosthesis. Moreover, the
16 data associated with the shape of the tooth stump was identified to
17 determine the shape of the interior portion of the crown designed to
18 fit over the stump. This process requires separation of the data
19 relating to the shapes of the teeth adjacent to the stump and using
20 that data (which includes ‘zones of contact or the boundaries
21 defined by the adjoining teeth’) to define the volume of the
22 prosthesis.

23
24 Mot. at 19.⁵

25
26 ⁵ Again, Align argues that the preamble of claim 45, which has the same “facilitating
27 orthodontic treatment” as claim 37, is not limiting, and that regardless, the Duret patent
28 itself teaches that it should “not be considered to be limited to the dentistry field . . . since
(continued...) ”

1 Ormco, however, argues that, like the Laurendeau reference, the Duret patent
2 discloses scans that generate 3D data of only one surface of the teeth – in this case the
3 surfaces that border the void to be filled with a prosthetic crown – and does not scan
4 or generate data about the occlusal surface or the other sides of these teeth. Opp’n at
5 4.

6 Furthermore, Ormco argues that, even assuming that the first part of claim 45
7 is satisfied, the second part of the claim is not, because the Duret patent “does not
8 purport to teach how to group that data into separate digital representations of the
9 shapes of each of the plurality of individual teeth.” Opp’n at 11. Ormco argues that
10 the volume of the prosthesis in the Duret patent is calculated without creation of
11 separate digital representations of each tooth. Opp’n at 12. Furthermore, Ormco
12 argues that while Duret discloses scanning the tooth stump in a scan separate from
13 the scan which captures the extended region used to determine the volume, claim 45
14 requires production of separate digital representations of each of the *plurality* of teeth
15 scanned, not just one tooth. Opp’n at 12.

16 The Court notes that, because the Duret patent was considered by the Patent
17 Office during prosecution of the ‘444 patent, Align’s burden is particularly high in
18 establishing anticipation. Opp’n at 11; SGI ¶ 118; Impax Labs., Inc. v. Aventis
19 Pharms. Inc., 545 F.3d at 1314 (Fed. Cir. 2008) (“When the examiner considered the
20 asserted prior art and basis for the validity challenge during patent prosecution,” the
21 burden on the party asserting invalidity “becomes particularly heavy”). The Court
22 finds that Ormco has raised significant issues regarding whether the Duret patent in
23 fact discloses separate digital representations of a plurality of teeth, and that,
24 therefore, Align has failed to meet this heavy burden of demonstrating that it is
25 entitled to summary judgment with regard to claim 45.

26
27 ⁵(...continued)
28 it is also applicable . . . to the taking of an impression or generating a model in dental
applications which are not followed by fabrication of a prosthesis.” Mot. at 20; SUF 76.

1 **7. Claim 69**

2 In addition, Align argues that claim 69 is anticipated by the Laurendeau
3 reference for the same reasons that claim 37 is. Mot. at 20. Claim 69 states:

4 A computer-implemented method for use in generating digital
5 models of a patient’s teeth, the method comprising: receiving initial
6 data that contains a 3D representation of a plurality of the patient’s
7 teeth; identifying multiple groups of data, each group containing a
8 plurality of points from the initial data that separately digitally
9 represent the shape of one of the teeth.

10 Align argues that claim 69 differs from claim 37 only in that it merely requires
11 “receiving initial data that contains a 3D representation of a plurality of the patient’s
12 teeth” whereas claim 37 requires that scanning be done to create data which is
13 “received” in claim 69. Mot. at 20; SUF ¶ 78. Because the Court finds herein with
14 regard to claim 37 that Align has failed to demonstrate that the Laurendeau reference
15 teaches “separate digital representations” of teeth, the Court finds that summary
16 judgment with regard to claim 69 is also inappropriate.

17 **B. Ormco’s Motion for Summary Judgment of No Invalidity of the**
18 **Remaining Claims of the ‘444 patent**

19 Align set forth its position on invalidity in its sixth supplemental response to
20 Ormco’s first set of interrogatories, in which it cites 76 prior art references; these prior
21 art references, Align argues, render the remaining claims anticipated or obvious. See
22 Opp’n at 5; Swenson Decl. Ex. 1. Align also sets forth its arguments on how prior art
23 invalidates the remaining claims in Ferraro’s expert report. Opp’n at 5.

24 Ormco argues that Align has failed to raise any issue of material fact with
25 regard to the invalidity of the remaining claims, and that, therefore, the Court should
26 grant summary judgment finding that, as a matter of law, the remaining claims are
27 valid.

28 **1. Ferraro’s Expert Report**

1 First, Ormco argues that the expert report on invalidity submitted by Ferraro,
2 Align's expert, should not be considered, because Ferraro is not an orthodontist, and
3 therefore is not a person of ordinary skill in the art. However, as stated in the Court's
4 order on Ormco's motion to strike Ferraro's testimony, the Court finds that Ferraro is
5 qualified as an expert, and therefore considers Ferraro's opinions on invalidity
6 presented in his report.

7 **2. Anticipation**

8 Ormco next argues that, even if Ferraro's report is considered, summary
9 judgment should nonetheless be granted in favor of Ormco on the issue of invalidity,
10 because Align's evidence of invalidity fails to raise any genuine factual issue so that a
11 reasonable fact finder could find that the claims are invalid due to anticipation.

12 **a. Anticipation of Claims 37, 45, and 69**

13 Ormco first argues that none of the prior art cited by Align discloses separation
14 of undifferentiated 3D scans of the shapes of a plurality of teeth into individual 3D
15 representations of tooth shapes, as required by claims 37, 45, and 69. Mot. at 8. For
16 example, Ormco argues that the prior art references Ricketts 39, Brook 74, and Brook
17 75 disclose only multiple views of 2D data, rather than 3D data.⁶ Mot. at 9.
18 Furthermore, Ormco argues that Yamamoto 50, Yamamoto 51, Yamamoto 52, and
19 Lemchen 59 do not disclose undifferentiated 3D scans of a plurality of teeth, because
20 Yamamoto 50 and 52 disclose only scanning one tooth at a time, Yamamoto 51 does
21 not disclose any relevant details regarding the scanning method employed, and
22 Lemchen 59 does not disclose a single 3D scan of multiple teeth that would result in
23 undifferentiated data. Mot. at 9. Furthermore, Ormco argues that Laurendeau 26 (also
24 referred to herein as the Laurendeau reference), Duret 12, Duret 54 (also referred to
25 herein as the Duret patent), Duret 55 and Rekow 62 do not disclose separating

26
27 ⁶ Both parties refer to prior art references by the name of the author/inventor and a
28 number assigned to each reference in the Ferraro report appendix (e.g. "Yamamoto 50").
The Court uses this convention herein as well.

1 undifferentiated data into individual tooth representations. Mot. at 10.

2 Align, however, disputes Ormco's characterization of the remaining claims and
3 the prior art references. First, Align argues that prior art references that disclose
4 multiple 2D scans do, in fact, disclose the creation of 3D data. Opp'n at 8; Swenson
5 Decl. Ex. 2 (Hall Dep.) at 54:9-15 (stating that "the wonder of a CT scanner is we can
6 produce a two-dimensional slice and then do that in different levels . . . to stack up a
7 full three-dimensional description of an object."). Next, Align disputes Ormco's
8 position that the Yamamoto references do not disclose undifferentiated 3D scans of a
9 plurality of teeth, arguing that Hall, Ormco's expert, admitted that they in fact do.
10 Opp'n at 9; Swenson Decl. Ex 2 (Hall Dep.) at 176:12-18 ("Q: So, with respect to
11 Yamamoto reference 50, do you believe that it discloses scanning three-dimensional
12 surfaces that have the shapes of a plurality of the teeth of the patient and generating
13 data thereof according to claim 37. A: Yes."), 174:22-175:9 (stating that the
14 Yamamoto references 51 and 52 describe the same system as Yamamoto 50.)
15 Furthermore, Align argues that Lemchen 59 disclosed more than scans of a single
16 tooth and instead disclosed generation of digital information about the entire jaw.
17 Opp'n at 10; Miotke Decl. Ex. 12 (Lemchen 59) at col 1: 54-69 ("generating digital
18 information which defines the shape and location of the maloccluded tooth in the
19 patient's jaw, from which a mathematical model of the tooth and jaw is generated").
20 With regard to the second step of claim 37, Align argues that Laurendeau, Duret,
21 Yamamoto, and Lemchen all disclose separate digital representations of the shapes of
22 a plurality of teeth.⁷ Opp'n 9-10.

23 **b. Anticipation of Claim 38**

24
25

⁷ Align's arguments with regard to Laurendeau and Duret 54 are discussed in more
26 detail in reference to Align's motion for summary judgment of no invalidity. Although the
27 Court denied summary judgment for Align with regard to the question of whether
28 Laurendeau discloses the second step of claim 37, the Court finds that Align has raised a
sufficient issue of fact so as to survive Ormco's motion for summary judgment.

1 Ormco further argues that Align has failed to demonstrate that claim 38 is
2 anticipated, because, contrary to Align’s arguments, neither Laurendeau, Ricketts,
3 Duret, or Brook disclose “landmark parameters.” Mot. at 13. Specifically, Ormco
4 argues that (1) Yamamoto 50, Yamamoto 52, and Ricketts 39 relate to tooth movement
5 after orthodontic treatment, and none teaches how to prospectively model tooth
6 movement for orthodontic treatment, (2) Rekow and Duret are directed to restorative
7 dentistry, not orthodontics, (3) the Laurendeau reference only identified parameters
8 concerning tooth relationships instead of locations on the teeth, and (4) Brook 74 and
9 Brook 75 were concerned with measuring the size of teeth, not modeling tooth
10 movement. Mot. at 15.

11 Align, however, argues that its references cited, do, in fact, disclose landmark
12 parameters. The essence of part of the dispute between Align and Ormco appears to
13 be whether a reference that discloses retrospective, rather than prospective, tooth
14 movement, can anticipate claim 38. Align argues that one of skill in the art would
15 understand that tooth movement could be modeled either prospectively or
16 retrospectively. Opp’n at 15; Rekow Decl. ¶ 16 (“It is often necessary to create a
17 prospective model or series of models that indicate the desired path of tooth
18 movement for a particular orthodontic treatment. Likewise, retrospective modeling of
19 tooth movement by modeling and measuring differences in models over a period of
20 time can provide critical information about a particular orthodontic treatment and can
21 be used to confirm, change, or modify further orthodontic treatment as well as
22 expanding the evidence base of the science of tooth movement.”). Align notes that,
23 for example, Yamamoto 50, Yamamoto 51, and Yamamoto 52 each describes a
24 system “where the computer calculates the change in position and orientation of teeth
25 and creates a simulations (or “model”) of tooth movement.” Opp’n at 15. Align
26 further argues that, in so doing, each discloses landmark parameters. Opp’n at 15; see,
27 e.g., Ferraro Decl ¶ 90 (“Yamamoto [50] disclosed an interactive selecting of
28 landmark parameters (e.g., locations from which the centroid of the occlusal surface

1 and orientation of the tooth could be derived)”), ¶ 93, ¶ 96. Ormco, however, counters
2 that the ‘444 patent only discloses modeling prospective treatment. Reply at 16.

3 **c. Conclusion**

4 In considering the arguments of the parties, the Court finds that Align has
5 presented sufficient evidence of anticipation to raise a question of fact as to whether
6 the prior art references anticipate the remaining claims. First, contrary to Ormco’s
7 argument, Align has raised an issue of fact as to whether various prior art references
8 disclose separation of undifferentiated 3D scans of the shapes of a plurality of teeth
9 into individual 3D representations of tooth shapes.

10 Furthermore, the Court finds that Align has raised a question of fact as to
11 whether the prior art references anticipate the landmark parameters disclosed in claim
12 38. Specifically, the Court declines to find as a matter of law that a prior art reference
13 disclosing the use of landmark parameters for retrospective modeling of tooth
14 movement cannot anticipate claim 38. Ormco did not argue for a limitation requiring
15 prospective modeling at the claim construction hearing, and nothing on the face of the
16 Court’s construction would appear to require prospective, rather than retrospective,
17 modeling. Furthermore, Align’s expert, Rekow has stated that a person of ordinary
18 skill in the art would understand the term modeling to include both prospective and
19 retrospective modeling, and that retrospective modeling could be used to “confirm,
20 change, or modify further orthodontic treatment.” See Rekow Decl. ¶ 16. Therefore,
21 the Court finds that summary judgment is inappropriate.^{8 9}

22
23 ⁸ Ormco also argues that summary judgment should be granted in its favor, because
24 Align has failed to demonstrate how the references it relies upon as anticipatory enable the
25 inventions claimed by Ormco. In particular, Ormco argues, Yamamoto 50, Yamamoto 52,
26 and Lemchen fail to enable the remaining claims. “A reference is enabled when its
27 disclosures are sufficient to allow one of skilled in the art to make and use the claimed
28 invention.” Amgen Inc. v. Hoechst Marion Roussel, Inc., 457 F.3d 1293, 1306 (Fed. Cir.
2006). “When considering whether or not a prior art reference requires undue
(continued...)

3. Obviousness

1
2 Ormco also argues that although Align “asserts that literally hundreds of
3 combinations of the prior art render obvious the asserted claims,” that Ferraro’s
4 opinions are “general and not applied with particularity to show how identified
5 teachings from specific prior art references could be combined and why there would
6 be a motivation to make that specific combination.” Mot. at 15. First, Ormco argues,
7 none of the prior art discloses undifferentiated scans of a plurality of teeth that
8 includes the dental undercuts, which, Ormco argues, must be included in any model of
9 tooth movement for use in facilitating orthodontic treatment. Mot. at 17.
10 Furthermore, Ormco reiterates its argument that none of the prior art discloses
11 landmark parameters, identification of which, Ormco argues, is “the key to creating a
12 3D computer model that could be used to facilitate the orthodontic treatment of a
13 patient” and without which “a person of ordinary skill would be completely adrift in
14 attempting to define a usable 3D digital representation of individual tooth shapes.”
15 Mot. at 18.

16
17

⁸(...continued)

18 experimentation we look at the reference from the perspective of a person of ordinary skill
19 in the art.” *Id.* at 1306-07. In its reply with regard to Align’s motion for summary
20 judgment, however, Align argues that Ormco’s argument that Align’s experts did not
21 consider whether the prior art references were enabling is incorrect, because “Align’s
22 experts reviewed the prior art from the perspective of one of skill in the art and determined
23 that they disclosed each of the elements of the asserted claims.” Reply at 12, n. 10. “While
24 enablement is ultimately a question of law, it is based on underlying factual findings.”
Bruning v. Hirose, 161 F.3d 681, 686 (Fed. Cir. 1998). The Court finds that, despite
Ormco’s arguments, it cannot determine as a matter of law that Align’s prior art references
fail to enable the remaining claims.

25 ⁹ Align and Ormco dispute whether the “for facilitating orthodontic treatment”
26 language should be read into the claim. Because the Court finds herein that, even if the
27 “for facilitating orthodontic treatment” language is read into the claims, that Align has
28 raised an issue of fact as to whether the claims are invalidated, the Court need not reach
this issue.

1 Align responds that summary judgment in favor of Ormco is not warranted,
2 because Ormco’s motion fails to address all of the prior art references asserted by
3 Align and its experts. Opp’n at 8. Moreover, Align disputes Ormco’s characterization
4 of its expert report, arguing that it contains a detailed discussion of all of the
5 references and provides information on the exact combination of references that
6 render each claim invalid, discusses which elements of the claims are present in the
7 references, and discusses, both generally and with respect to particular references,
8 why one would be motivated to combine references in the way described in the report.
9 Opp’n at 16; Ferraro Decl. ¶¶ 39-83. Furthermore, Align disputes Ormco’s argument
10 that prior art references would have to disclose scans of a plurality of teeth *including*
11 the dental undercuts, arguing that “orthodontic treatment can be readily accomplished
12 without full clinical crown digital information or dental undercut information.” Opp’n
13 at 17; Swenson Decl. Ex. 2 (Hall Dep.) (“I can envision cases where I just need one
14 point of contact to attach a bracket. And other cases where maybe the full three-
15 dimensional shape is needed to determine how much to rotate or tip a tooth”). Align
16 also disputes Ormco’s assertions that the prior art references fail to disclose “landmark
17 parameters” as discussed herein, and notes that “landmark parameters” are only
18 contained in claim 38.

19 Because the Court finds that Align has raised a genuine issue of material fact as
20 to whether (1) the prior art discloses undifferentiated scans that have the shapes of a
21 plurality of teeth¹⁰ and (2) the prior art discloses landmark parameters, the Court finds
22 summary judgment inappropriate.¹¹

24 ¹⁰ As the Court has stated herein, the Court declines to find that as a matter of law
25 that shape requires inclusion of dental undercuts.

26 ¹¹ At the hearing, Ormco argued that Align has failed to set forth any evidence that
27 someone of ordinary skill in the art would have a reasonable expectation of success in
28 making the claimed invention. See Medichem, S.A. v. Rolabo, S.L., 437 F.3d 1157, 1165
(continued...)

1 **4. Invalidity of Claim 40 Due to Indefiniteness**

2 “Indefiniteness is a matter of claim construction, and the same principles that
3 generally govern claim construction are applicable to determining whether allegedly
4 indefinite claim language is subject to construction.” Praxair, Inc. v. ATMI, Inc., 543
5 F.3d 1306, 1319 (Fed. Cir. 2008). “A claim will be found indefinite only if it is
6 insolubly ambiguous, and no narrowing construction can properly be adopted
7 On the other hand, if the meaning of the claim is discernible, even though the task
8 may be formidable and the conclusion may be one over which reasonable persons will
9 disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness
10 grounds.” Id. “Indefiniteness, like claim construction, is a question of law.” Praxair,
11 Inc. v. ATMI, Inc., 543 F.3d 1306, 1319 (Fed. Cir. 2008).

12 Align has asserted that Ormco’s claim 40 is invalid as indefinite, because it has
13 identical scope to claim 37.

14 Claim 37 reads:

15 _____
16 ¹¹(...continued)
17 (Fed. Cir. 2006) (“If all the elements of an invention are found in a combination of prior
18 art references, a proper analysis under 35 U.S.C.S. § 103 requires, *inter alia*, consideration
19 of two factors: (1) whether the prior art would have suggested to those of ordinary skill in
20 the art that they should make the claimed composition or device, or carry out the claimed
21 process; and (2) whether the prior art would also have revealed that in so making or
22 carrying out, those of ordinary skill would have a reasonable expectation of success”);
23 PharmaStem Therapeutics, Inc. v. ViaCell, Inc., 491 F.3d 1342, 1360 (Fed. Cir. 2007) (“the
24 burden falls on the patent challenger to show by clear and convincing evidence that a
25 person of ordinary skill in the art would have had reason to attempt to make the
26 composition or device, or carry out the claimed process, and would have had a reasonable
27 expectation of success in doing so”). A reasonable expectation of success is a question of
28 fact. Id. at 1165. The Court finds that although Ferraro’s expert report does not appear to
explicitly address the issue of reasonable expectation of success, the Court cannot find,
based on the totality of the opinions asserted by Ferraro regarding the obviousness of the
remaining claims, that a reasonable juror could not find that a person of ordinary skill in
the art would have a reasonable expectation of success in making the claimed invention.

1 A method of processing digital data for use in facilitating the
2 orthodontic treatment of a patient comprising: scanning three-
3 dimensional surfaces that have the shapes of a plurality of the teeth of
4 a patient and generating data thereof; from the generated data,
5 producing separate digital representations of the shapes of each of a
6 plurality of individual teeth of the patient.

7 Claim 40 reads:

8 The method of claim 37 wherein: the producing of the separate
9 digital representations from the generated data includes separating an
10 image of the plurality of teeth into individual data-sets each
11 representing an individual tooth.

12 Ormco argues that claims 37 and 40 are not identical, because claim 37 requires
13 separation of “data” as part of the second step, which could involve separation of an
14 image that is generated on a screen or manipulation of data within a computer that is
15 not reflected as an image on a screen. Miotke Decl. Ex. 2 (Roberts Report) at 26.

16 Ormco argues that claim 40 is more restricted than claim 37, because it requires an
17 “image” so that separation of data not reflected in “image” form would not meet claim
18 40's requirements. Miotke Decl. Ex. 2 (Roberts Report) at 26-27.

19 Align, however, counters that claim 40 should be found indefinite as a matter of
20 law because, in fact, the ‘444 patent uses the terms “data” and “image”
21 interchangeably, and one of skill in the art would not understand how claim 40 differs
22 from claim 37. Opp’n at 19; Ferraro Decl. ¶ 35. Specifically, Align argues that the
23 term “image” as used in the ‘444 patent refers not to an image on a computer screen
24 but instead, more generally, a representation of something. Opp’n at 19. For example,
25 Align argues,

26 the ‘444 patent talks about three-dimensional images being a
27 representation of the teeth, not a picture displayed on a computer
28 screen: “scanning a model of the patient’s mouth to produce two or

1 three dimensional images . . .”; and “three dimensional imaging of
2 the teeth and jaw of the patient is carried out with laser or other
3 scanner to form full three dimensional images of the teeth and jaw of
4 the patient. The images may be formed from the patient’s teeth and
5 jaw or from a model thereof.”

6 Opp’n at 19.

7 The Court finds that Align has failed to set forth clear and convincing evidence,
8 other than vague references to sections of the patent, that demonstrate that the term
9 “data” and “image” are interchangeable, so as to render claim 40 identical to claim 37.
10 Therefore, the Court grants summary judgment in favor of Ormco on the issue of
11 indefiniteness of claim 40.

12 **C. Exclusion of Rekow’s Declaration**

13 On January 26, 2009, Ormco filed a motion to exclude the “new” opinions in the
14 declaration of Diane E. Rekow, which was submitted in support of Align’s motion for
15 summary judgment of invalidity. Align filed an opposition on February 2, 2009. A
16 reply was filed on February 5, 2009. Ormco argues that, to support its motion for
17 summary judgment on invalidity of the remaining claims of the ‘444 patent, Align has
18 improperly submitted a declaration from Rekow, Align’s expert, four paragraphs of
19 which, Ormco argues, assert substantial new opinions on invalidity not contained in
20 Rekow’s expert report. Mot. to Exclude at 1.

21 Under Fed. R. Civ. P. 26(a)(2)(B), a submitted expert report must contain a
22 “complete statement of all opinions to be expressed and the basis and reasons for
23 them” and “the data or other information considered by the witness in forming them.”
24 Mot. to Exclude at 2. Under Fed. R. Civ. P. 37(c)(1), a party who fails to properly
25 disclose information as required by Fed. R. Civ. P. 26(a) “is not allowed to use that
26 information or witness to supply evidence on a motion, at a hearing or at a trial” unless
27 the party’s failure to disclose was “substantially justified” or “harmless.”

28 In its opposition, Align counters that Rekow’s declaration does not, in fact,

1 contain any new or different opinions than those disclosed in her expert report and
2 deposition testimony. Opp'n at 4. Align's opposition presents a side-by-side
3 comparison of statements made in Rekow's declaration and in her expert report to
4 bolster its argument that Rekow's declaration does not present any new opinions, but
5 instead, merely paraphrases her opinions as presented in her expert report.

6 The Court first notes that, regardless of the opinions contained in the Rekow
7 declaration, the Court herein determines that Align has failed to set forth clear and
8 convincing evidence of invalidity with regard to the Laurendeau reference and the
9 Duret patent. Therefore, with regard to Align's motion for summary judgment,
10 striking the Rekow declaration would not in any way change the denial of summary
11 judgment for Align, and therefore, the motion to strike need not be decided in
12 connection with Align's motion.

13 The Court further notes that Align has also submitted some of the disputed
14 portions of the declaration in support of its opposition to Ormco's motion for summary
15 judgment of no invalidity. In declining to grant summary judgment in favor of Ormco
16 on the issue of invalidity, the Court does not rely on any portion of the Rekow
17 declaration, with the exception of paragraph 16 of the declaration submitted in support
18 of Align's opposition (paragraph 17 in the declaration submitted in support of Align's
19 motion), in which Rekow states her opinion that both retrospective and prospective
20 modeling of tooth movement can be useful for orthodontic treatment. Therefore, the
21 Court need only reach the issue of whether the opinions in this particular paragraph
22 were disclosed in Rekow's expert report.

23 Specifically, the disputed portion of the Rekow declaration states:

24
25 It is often necessary to create a prospective model or series of
26 models that indicate the desired path of tooth movement for a
27 particular orthodontic treatment. Likewise, retrospective modeling
28 of tooth movement by modeling and measuring differences in

1 models over a period of time can provide critical information about a
2 particular orthodontic treatment and can be used to confirm, change,
3 or modify further orthodontic treatment as well as expanding the
4 evidence base of the science of tooth movement. In either situation,
5 models of tooth movement are useful in performing orthodontic
6 treatment.

7 Rekow Decl. in Support of Align’s Opposition to Ormco’s Motion for Summary
8 Judgment ¶ 16.

9 In examining Rekow’s expert report, the Court concludes that Rekow’s expert
10 report does in fact disclose the essence of the opinions stated in paragraph 16, and that,
11 regardless, any failure to disclose the level of detail contained in the Rekow declaration
12 is nonetheless harmless to Ormco.

13 Two passages of Rekow’s expert report specifically discussed retrospective
14 tooth movement related to orthodontic treatment:

15 Separate digital tooth representations were routinely used prior to
16 1991 to model tooth movement (including quantifying tooth
17 movement in response to orthodontic treatment) . . .

18 Rogaski Decl. (Rekow Report) at 8; and:

19 The mathematical techniques described to move teeth [i.e. prospective
20 tooth movement] are identical to those used to quantify tooth
21 movement [i.e. retrospective tooth movement] in response to
22 orthodontic treatment.

23 Rogaski Decl. (Rekow Report) at 2.

24 Although these statements do not necessarily disclose the full detail of Rekow’s
25 opinion as stated in her declaration, her statement that retrospective modeling of tooth
26 movement can be used to “quantify tooth movement in response to orthodontic
27 treatment,” would, by logical extension, indicate that she would view such modeling as
28 providing “critical information about a particular orthodontic treatment” and useful to

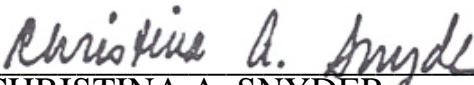
1 “confirm, change, or modify further orthodontic treatment.” Therefore, the Court
2 declines to strike paragraph 16 in Rekow’s opposition declaration.

3 **IV. CONCLUSION**

4 For the foregoing reasons, the Court DENIES Align’s motion for summary
5 judgment of invalidity of the remaining claims. The Court DENIES Ormco’s motion
6 for summary judgment of no invalidity of the remaining claims, except that the Court
7 GRANTS Ormco’s motion for summary judgment on the issue of indefiniteness of
8 claim 40. The Court DENIES Ormco’s motion to strike opinions in the Rekow
9 Declaration.

10 IT IS SO ORDERED.

11
12 Dated: February 23, 2009


13 CHRISTINA A. SNYDER
14 UNITED STATES DISTRICT JUDGE