

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD
4

5 ALIGN TECHNOLOGY, INC.,

6 Petitioner

7 v.

8 DENTAL MONITORING SAS,

9 Patent Owner

10
11 Case IPR2023-01369

12 U.S. Patent No. 10,755,409

13
14
15 REMOTE ORAL DEPOSITION OF

16 DR. MAUREEN VALLEY, D.M.D., M.P.H., M.S.

17 MONDAY, SEPTEMBER 16, 2024

18
19
20 REPORTED BY:

21 DEBRA A. DIBBLE, FAPR, RDR, CRR, CRC, Notary Public

22 JOB NO. SY009715

1

2 REMOTE ORAL DEPOSITION OF DR. MAUREEN VALLEY,
3 D.M.D., M.P.H., M.S., produced as a witness at the
4 instance of the Patent Owner and duly sworn, was
5 taken in the above-styled and numbered cause on the
6 above-referenced date, from 9:57 a.m. to 3:14 p.m.
7 PDT, before Debra A. Dibble, CSR, CCR, RDR, CRR,
8 Fellow of the Academy of Professional Reporters,
9 Notary Public, reported by realtime stenographic
10 means at the location of the witness, Elk Grove,
11 California, pursuant to 37 C.F.R. Section 42.53(d).

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P R O C E E D I N G S

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September 16, 2024, 9:57 a.m. PDT

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DR. MAUREEN VALLEY, D.M.D., M.P.H., M.S.,

6

having been duly sworn,

7

testified as follows:

8

9

EXAMINATION

10

11 BY MR. BLYTHE:

12

Q. Good morning, Dr. Valley.

13

A. Good morning.

14

Q. This is not your first deposition by

15

Zoom, correct?

16

A. Correct.

17

Q. So this will sound familiar, but I want

18

to go over some of the basics for deposition

19

procedure. You understand that my questions and

20

your answers are being transcribed today?

21

A. Yes.

22

Q. And you understand that you are under

1 oath and obligated to tell the truth?

2 A. Yes.

3 Q. Is there anything that would prevent you
4 from testifying truthfully and completely today?

5 A. No.

6 Q. If you don't understand a question of
7 mine, please ask me to clarify. If you don't ask me
8 to clarify, I'll assume that you understood the
9 question. Is that fair?

10 A. Yes.

11 Q. Where are you located today?

12 A. In my house.

13 Q. Is anyone else in the room with you?

14 A. No, other than my two dogs.

15 Q. Do you have any materials related to this
16 case present with you?

17 A. Yes.

18 Q. Which materials are those?

19 A. These are materials that I was sent by
20 counsel. They are two copies of the unmarked
21 materials that I have cited in my declaration.

22 One is loose copies in a file folder, and

1 one are the same copies, however in binder form.

2 Q. Do any of those materials have notes or
3 annotations?

4 A. No.

5 Q. Other than Zoom, do you have any other
6 files or programs open on your computer?

7 A. No.

8 In fact, bear with me -- I just want to
9 make sure that my e-mail that I connected to this
10 Zoom is off.

11 Let me turn off my e-mail that I
12 connected to this meeting with.

13 Okay. I'm disconnected from my e-mail.
14 The only thing on my screen is this Zoom meeting.

15 Q. Did you do anything to prepare for your
16 deposition today?

17 A. Yes.

18 Q. What did you do?

19 A. I reviewed all of the materials that I
20 cited in my declaration.

21 Q. Did you meet with counsel to prepare for
22 your deposition today?

1 A. Yes.

2 Q. With whom did you meet?

3 A. I spoke with Matthew and Patrick, and
4 also Maria Stubbings was part of that call.

5 Q. When did that call take place?

6 A. Yesterday.

7 Q. Was that a call or a Zoom?

8 A. It was a Zoom.

9 Teams meeting, Zoom, it was an online
10 video meeting.

11 Q. How long did it last for?

12 A. A few hours.

13 Q. Other than the meeting yesterday, did you
14 meet with counsel to prepare for this deposition on
15 any other days?

16 A. No.

17 Excuse me, let me recall. We spoke about
18 setting up the meeting yesterday, if that counts.

19 Q. When did you --

20 A. For anything.

21 Q. Sorry. When did you speak --

22 A. There were some e-mails. I believe it

1 was e-mails to set up yesterday's meeting.

2 MR. ARGENTI: So, Dr. Valley, I'm
3 just going to interject and caution you not to
4 discuss the substance of any communications
5 with counsel, okay?

6 THE WITNESS: Okay.

7 BY MR. BLYTHE:

8 Q. Other than the documents cited in your
9 declaration, did you review any other documents in
10 preparing for today's deposition?

11 A. No.

12 Q. Other than Matthew, Patrick, and Maria
13 Stubbings, did you speak with anyone else to prepare
14 for today's deposition?

15 A. No.

16 Q. When were you first retained by Align to
17 address the '409 patent in the district court
18 proceeding?

19 A. In this particular case?

20 Q. Do you understand that there are a
21 case -- there is a case pending in the district
22 court proceeding in which you have submitted a

1 declaration and a present action concerning the '409
2 patent in front of the patent office, correct?

3 A. The prior case I was involved in, is that
4 what you're asking about?

5 Q. Yes. And I'm asking when you were
6 retained in connection -- first retained in
7 connection with the '409 patent, whether that is the
8 district court proceeding or the inter partes review
9 proceeding.

10 A. My prior involvement, working with Align,
11 was I wrote a declaration and I did a deposition --

12 May I turn to my CV so I could give you
13 exact dates on that?

14 Q. Sure. In fact, let me introduce that
15 exhibit that has already been marked in this
16 proceeding as Exhibit 1036. I'm going to go ahead
17 and drop that in the Zoom chat.

18 You're welcome to use your paper copies
19 if -- as we all confirm we're talking about the same
20 exhibits. If I use the exhibit number identified in
21 the lower right-hand corner of the front page of an
22 exhibit, we'll understand we're talking about the

1 same exhibit today. Does that work for you?

2 A. That works for me.

3 Q. Were you referring to Exhibit 1036 as
4 your CV?

5 A. Yes.

6 Q. Does your CV refresh your recollection
7 regarding when you were first retained to address
8 the '409 patent?

9 A. Yes.

10 Q. And when was that?

11 A. April 2023, approximately, to
12 January 2024.

13 Q. When did you first become aware of the
14 current IPR proceeding at the patent office
15 concerning the '409 patent?

16 A. I couldn't say exactly. I don't remember
17 specifically. I believe it was -- I believe I was
18 told there may be the possibility that there would
19 be an IPR proceeding and that they would get in
20 touch with me if there was. That I might be
21 retained --

22 MR. ARGENTI: Dr. Valley, I just want

1 to caution you not to divulge the substance of
2 communications with counsel in this case,
3 please.

4 THE WITNESS: Thank you.

5 BY MR. BLYTHE:

6 Q. To clarify, Dr. Valley, my question is do
7 you recall when you first became aware of the '409
8 patent IPR proceeding?

9 A. I do not specifically recall, no.

10 Q. Do you know whether it was before you
11 submitted your declaration in December 2023 in the
12 district court proceeding?

13 A. I do not recall.

14 Q. You were also retained specifically in
15 connection with this IPR proceeding; is that
16 correct?

17 A. Can you repeat your question?

18 Q. Let me rephrase.

19 Were you retained under a separate
20 agreement in connection with this IPR proceeding?

21 A. I'm trying to understand your question.
22 Are you saying was I retained for this IPR

1 proceeding at the same time that I was retained for
2 the patent infringement and validity case?

3 Q. Let's go with that question, sure.

4 A. That's our question?

5 Q. Yes.

6 A. I do not recall being retained
7 simultaneously for both.

8 Q. Okay. So there came a time after being
9 retained for the district court proceeding that you
10 became retained for the IPR proceeding?

11 A. Yes.

12 Q. Do you recall when your retainer for the
13 IPR proceeding occurred?

14 A. No.

15 Q. Do you know whether it was this year?

16 A. Yes, it was this year.

17 Q. Was it this -- was it after May 28, 2024?

18 A. I don't recall.

19 Q. Do you recall whether it was before or
20 after the 4th of July?

21 A. Honestly, I don't recall.

22 Q. Do you recall when you first had contact

1 with counsel Wilson and Sonsini in connection with
2 this IPR?

3 A. I don't recall. It's kind of all a blur.

4 Q. When I refer to --

5 Oh, sorry. Please continue.

6 A. I'm sorry. I just wanted to say it's
7 been a very busy year for me, and not necessarily
8 because of the work I've done with expert witness,
9 so it's been a blur this year.

10 Q. When I refer to the '409 patent, you
11 understand that I'm referring to Dental Monitoring's
12 patent at issue in this proceeding?

13 A. Yes.

14 Q. I'm going to go ahead and drop into the
15 chat what has been previously marked as
16 Exhibit 1001.

17 Are you able to take a look at
18 Exhibit 1001?

19 A. I can look at it from my paper copy,
20 since I'm most comfortable dealing with paper, if
21 that's okay, instead of stumbling with technology.

22 Q. That's okay with me.

1 A. I have it in front of me.

2 Q. Okay. And you understand that
3 Exhibit 1001 is the '409 patent in this case?

4 A. Yes.

5 Q. I just want to make sure we're clear as
6 we talk about the patent today.

7 I also want to introduce what has been
8 marked as Exhibit 1035, which I believe should be
9 the copy of your declaration. If you want to refer
10 to your paper copy today, that's fine, I just want
11 to make sure we're both looking at Exhibit 1035.

12 A. Yes, I'm looking at it right now.
13 Exhibit 1035 is my declaration.

14 Q. Okay. Are you aware of any errors in
15 your declaration?

16 A. Yes, I am.

17 Q. Can you identify those errors for me?

18 A. Give me a moment as I find it.

19 [Document review.]

20 A. There was a section or a sentence where I
21 stated Carrier Provisional, and I meant to say
22 Carrier Publication. I'm trying to find that here.

1 Q. Would that be in paragraph 35?

2 [Document review.]

3 BY MR. BLYTHE:

4 Q. Maybe the second-to-the-last sentence.

5 A. Correct. Paragraph --

6 Q. Are you --

7 A. Pardon?

8 Q. I'm sorry. Please, didn't mean to cut

9 you off.

10 A. Paragraph 35, towards the bottom of
11 page 15, it states: And thus that the Carrier
12 Provisional discloses and enables each of these
13 elements as recited in claim 1 of the Carrier
14 Provisional.

15 That is a typo. It should be as recited
16 in claim 1 of the Carrier Publication.

17 Q. Are you aware of any other errors in your
18 declaration?

19 A. No, I am not aware of any other.

20 Q. Did you draft this declaration?

21 A. I did.

22 Q. When did you first begin drafting this

1 declaration?

2 A. And, again, I can't say specifically.

3 Let me -- if I may refer to the date that I signed
4 it.

5 Q. Absolutely.

6 A. Okay. I submitted the declaration
7 August 19, 2024. So I prepared the declaration,
8 definitely I know in the month of August. Whether I
9 began it in July, I can't recall. Or earlier than
10 that, I really can't recall.

11 Q. Approximately how many hours did you
12 spend in preparing this declaration?

13 A. I would have to estimate. I don't know
14 exactly. I haven't tabulated that, but if I were to
15 estimate, it would probably be in a range between
16 maybe 15 to 20 hours.

17 Q. If you could turn to page 22 where your
18 signature is.

19 A. Yes, I'm there.

20 Q. I think we just covered this, but I want
21 to confirm. You signed this version of your
22 declaration on August 19, 2024?

1 A. Correct.

2 Q. How did you sign this doc -- declaration?

3 A. Electronic signature.

4 Q. Is that with DocuSign?

5 A. I believe so. I can't recall for sure,
6 but I don't recall any other type of way of doing
7 that that I'm familiar with signing documents.

8 Q. Do you see on your signature on the by
9 line there's a little stamp around what appears to
10 be a hand-drawn signature that says DocuSigned by?
11 It's in very small text. Are you able to see that?

12 A. I see that. And that makes sense, from
13 what I can recall, yes.

14 Q. Did you personally enter your signature
15 via DocuSign?

16 A. I personally entered my signature on
17 DocuSign.

18 Q. Did you review your declaration
19 thoroughly before signing it on DocuSign?

20 A. Yes.

21 Q. Was the document available at the time
22 you entered the DocuSign signature?

1 A. Yes.

2 Q. Do you recall whether you reviewed the
3 document at that time?

4 A. I recall reviewing it at the time, yes.

5 Q. Was that on a computer or on a mobile
6 device?

7 A. Computer.

8 Q. I don't see a date or time stamp on the
9 DocuSign signature. Do you recall what time of day
10 you entered your signature via DocuSign?

11 A. No.

12 Q. Do you recall whether you were at work
13 that day?

14 A. No.

15 Q. Could you turn to paragraph 3 of your
16 declaration. Which is on page 1.

17 A. I'm on that page.

18 Q. In paragraph 3, it says: In preparing
19 this declaration, I have reviewed and am familiar
20 with the references cited herein, including the '409
21 Patent and the declaration of Dr. Budi Kusnoto,
22 Exhibit 2030, submitted by Dental Monitoring.

1 Did I read that correctly?

2 A. Yes, that is correct.

3 Q. In preparing this declaration, did you
4 review any materials that are not cited in this
5 declaration?

6 A. (No audible response.)

7 Q. Sorry. That wasn't audible on my end.

8 A. I apologize. No.

9 Q. Dr. Kusnoto's declaration, Exhibit 2030,
10 contains citations to exhibits that are not cited in
11 your declaration, correct?

12 A. I believe so, yes.

13 Q. And so to the extent those exhibits are
14 not cited in your declaration, you did not review
15 them in forming the opinions in your declaration?

16 A. No.

17 Q. To confirm, you have not reviewed the
18 declaration of Dr. Hassan Foroosh?

19 A. No.

20 Q. Have you ever spoken with Dr. Foroosh?

21 A. No.

22 Q. You haven't reviewed any of the papers

1 filed by the parties in this IPR proceeding?

2 Sorry, let me rephrase. You haven't
3 reviewed any of the papers filed by the parties in
4 the IPR proceeding?

5 MR. ARGENTI: Objection, form.

6 A. I have reviewed specifically only those
7 documents that I have cited in my declaration.

8 BY MR. BLYTHE:

9 Q. Let me be more specific. You have not
10 cited in your declaration Align's petition for inter
11 partes review, correct?

12 A. No, it's not a part of the documents that
13 I cited that I have reviewed.

14 Q. And to confirm, you have not reviewed any
15 of the deposition testimony from this IPR
16 proceeding?

17 A. No.

18 Q. Can you please turn to paragraph 20 of
19 your declaration, which is on page 7.

20 A. Can you repeat where I should be?

21 Q. Yes. Paragraph 20 on page 7.

22 A. Okay, I'm there.

1 Q. Do you see that on the previous page,
2 we're in the section regarding person or -- person
3 of ordinary skill in the art?

4 A. Yes.

5 Q. And in paragraph 20, you state: I also
6 understand that Dental Monitoring has indicated that
7 these two definitions are not materially different.

8 And my question is: What is your basis
9 to understand what Dental Monitoring has indicated
10 regarding these definitions?

11 A. This is what my attorneys told me.

12 Q. Other than what counsel told you, do you
13 have any other basis for that understanding?

14 A. Only what my counsel told me.

15 Q. Going back to paragraph 2 on page 1.

16 A. I'm there.

17 Q. Okay. In paragraph 2, you indicate: I
18 have been asked to provide my independent review,
19 analysis, insights, and opinions regarding technical
20 aspects raised by Dental Monitoring during the
21 above-captioned proceeding relating to the '409
22 patent.

1 Correct?

2 A. Correct.

3 Q. Which technical aspects are you referring
4 to in this paragraph?

5 A. I'm referring to specific dental topics
6 or aspects that were given by Dr. Kusnoto in his
7 declaration.

8 Q. Which specific dental topics or aspects
9 given by Dr. Kusnoto in his declaration were you
10 asked to provide your review analysis, insight, and
11 opinion regarding?

12 A. It's the basis of my declaration. It's
13 all in my declaration.

14 Q. Is it fair to understand that if
15 Dr. Kusnoto has opinions in his declaration that you
16 have not addressed, that you were not asked to
17 consider or opine on those?

18 A. That is correct.

19 Q. When you say "I have been asked," do you
20 mean asked by counsel for Align?

21 A. Correct.

22 Q. Turn forward a few pages, back to page 6

1 of your declaration.

2 A. I'm on page 6.

3 Q. In this section in paragraph 18, you
4 provide a description -- sorry, let me rephrase
5 that.

6 In paragraph 18, you provide Align's
7 description of a person of ordinary skill in the
8 art, and in paragraph 19, you provide Dental
9 Monitoring's description of a person of ordinary
10 skill in the art; is that correct?

11 A. That's correct.

12 Q. And if I abbreviate person of ordinary
13 skill in the art as P-O-S-A or POSA, do you
14 understand I'm referring to a person of ordinary
15 skill in the art today?

16 A. Yes.

17 Q. Looking at Dental Monitoring's
18 description of a POSA: A POSA would have had a
19 bachelor's degree or higher in computer science,
20 bioinformatics, or a related engineering discipline.
21 Do you see that?

22 A. I see that.

1 Q. Do you have a bachelor's degree or higher
2 in computer science, bioinformatics, or related
3 engineering discipline?

4 A. No, I don't.

5 Q. Do you have several years' of work
6 experience relating to the development of machine
7 learning or artificial intelligent models or
8 algorithms?

9 A. No, I don't. I'm an orthodontist.

10 Q. Would you agree that you are not a person
11 of skill as defined by Dental Monitoring in
12 paragraph 19?

13 A. I would agree.

14 Q. Looking at Align's definition in
15 paragraph 18, do you have an advanced degree in
16 computer science or related field?

17 A. No.

18 Q. Do you have at least two years of work
19 experience in any of computer vision, image
20 analysis, medical imaging, or related areas?

21 A. (No audible response.)

22 Q. Sorry. That audio didn't pick up for

1 some reason.

2 A. No.

3 Q. Do you believe that any of your
4 professional experience in any of those fields would
5 compensate for lacking an advanced degree such that
6 you would qualify as a person of ordinary skill by
7 experience rather than education?

8 A. I do not feel I am a POSA in this case.

9 Q. Understood. So to confirm, you agree
10 that you are not a person of ordinary skill in the
11 art as defined by Align?

12 A. Correct.

13 Q. And these definitions of a person of
14 ordinary skill in the art, that's a person or --
15 person of ordinary skill in the art with respect to
16 the field of the '409 patent; is that right?

17 MR. ARGENTI: Objection, form.

18 A. I was not asked to opine on what a POSA
19 would be. My attorneys described this to me. But
20 what I do understand is, as an orthodontist with
21 experience in dentistry and orthodontics, that I was
22 brought into this case to give my opinions as if I

1 was part of an interdisciplinary or
2 multidisciplinary team that the POSA could have
3 called upon if they wanted to for extra knowledge.

4 BY MR. BLYTHE:

5 Q. Could you please turn to paragraph 13 of
6 your declaration.

7 A. I'm on that paragraph.

8 Q. Does paragraph 13 of your declaration
9 refresh your recollection that your description of
10 the POSA in Section 5 is with respect to the field
11 of the '409 patent?

12 A. Could you rephrase your question?

13 Q. Sure. Let me back up and ask my original
14 question.

15 The definitions of a person of ordinary
16 skill in the art set forth in Section 5 of your
17 report are persons of ordinary skill in the art with
18 respect to the field of the '409 patent, correct?

19 MR. ARGENTI: Objection, form.

20 A. In paragraph 13, page 4, yes, I stated:
21 My specific understanding of a POSA with respect to
22 the field of the '409 patent is summarized in

1 section V.

2 Again, I was not asked to opine on that.
3 Neither the '409 nor what a POSA is. I was told
4 what that is.

5 BY MR. BLYTHE:

6 Q. It's your understanding that the
7 definitions of a person of ordinary skill that you
8 have been -- let me rephrase that.

9 You do not have an understanding that the
10 person of ordinary skill recited in paragraphs 18 or
11 19 applies to a field other than the '409 patent.

12 MR. ARGENTI: Objection, form.

13 A. It's my understanding that it's with
14 respect to the field of the '409 patent that that
15 definition of the POSA that I was given -- the
16 definitions of the POSA I was given from my
17 attorneys that were Align and Dental Monitoring's.

18 I was not asked to take it any further
19 than that.

20 (Clarification by reporter.)

21 BY MR. BLYTHE:

22 Q. Recognizing that you do not consider

1 yourself a person of ordinary skill in the art, do
2 you have any experience with computer vision?

3 A. You have to explain what you mean by
4 computer vision.

5 Q. Sure. Do you have any experience with
6 the use of computers in analyzing the contents of
7 images?

8 A. No, it's not a field that I've studied or
9 have in my work. Certainly, I work with computers
10 every day, with personal and work-related things.
11 I'm not sure I understand exactly what you're
12 meaning or if my work has brought me into anything
13 that may entail that field. I don't say for sure,
14 but I have not been educated specifically in that
15 area, and I don't hold a job specifically in that
16 area.

17 Q. Do you have any experience working with
18 neural networks?

19 A. No.

20 Q. Okay. Let's change gears and take a look
21 at the section of your report -- sorry, section of
22 your declaration beginning on page 7.

1 A. I'm on page 7.

2 Q. Okay. This section is titled The Carrier
3 Provisional and extends to the end of paragraph 35
4 on page 16, correct?

5 A. Correct.

6 Q. And in the second to last sentence of
7 paragraph 35 that we were looking at earlier, as
8 corrected as you noted earlier, the latter half of
9 that sentence reads: And thus that the Carrier
10 Provisional discloses and enables each of these
11 elements as recited in claim 1 of the Carrier -- and
12 it should say publication.

13 Do you see that?

14 A. I see that sentence.

15 Q. Are you offering an opinion regarding the
16 effective filing date of the publication?

17 A. My opinions, as a dental professional
18 are -- are of what I believe would be their opinions
19 from -- what were the dates? The effective filing
20 date of the Carrier Provisional, which was
21 July 21st, '27 -- excuse me.

22 I've been told that I should, as a dental

1 professional, put myself into the shoes -- or of a
2 person, a dental professional from July 21st, 2017.

3 Q. And do you see on page 4 of your
4 declaration, there's a section titled Effective
5 Filing Date?

6 A. I see that.

7 Q. Is that the analysis that you were just
8 referring to?

9 MR. ARGENTI: Objection, form.

10 A. Yes.

11 BY MR. BLYTHE:

12 Q. And in paragraph 15, do you see that it
13 discusses the written description and enablement
14 requirements?

15 A. I see that first sentence.

16 Q. Is written description and enablement
17 what you were referring to when in paragraph 35 you
18 used the phrase "disclose and enable"?

19 [Document review.]

20 A. Can you repeat your question?

21 BY MR. BLYTHE:

22 Q. Sure. Is the written description and

1 enablement requirement what you were referring to
2 when in paragraph 35 you used the phrase "disclose
3 and enable"?

4 [Document review.]

5 A. Yes.

6 BY MR. BLYTHE:

7 Q. And in paragraph 15 of your declaration,
8 you recognize that the written description
9 requirement is satisfied if a person having skill in
10 the art reading the original patent application
11 would have recognized that it describes the full
12 scope of the claimed invention and so on?

13 Do you see that?

14 A. I see that.

15 Q. And do you see in the next sentence, it
16 also describes the enablement requirement as being
17 satisfied if a person of ordinary skill in the art
18 would be able to practice the claimed invention
19 based on the description?

20 A. Yes, I see that.

21 Q. And you recognize that if you are not a
22 person of ordinary skill in the art, that you are

1 not able to offer an opinion regarding the written
2 description or enablement of the patent -- of
3 Carrier Publication claim 1 in the Carrier
4 Provisional?

5 MR. ARGENTI: Objection, form.

6 A. Paragraph 35 what I was referring to is
7 it's my opinion that a dental professional, if asked
8 for their opinion, would conclude -- make these
9 conclusions. I'm not stating that a POSA -- or that
10 I was a POSA, I'm not stating that they would make
11 these conclusions. I'm stating a dental
12 professional would.

13 BY MR. BLYTHE:

14 Q. Do you have an opinion regarding how the
15 view of a dental professional regarding these
16 disclosures is relevant to the written description
17 or enablement requirements?

18 A. Repeat that one more time.

19 Q. Sure. Do you have an understanding
20 regarding how the view of a dental professional is
21 relevant to the written description and enablement
22 requirement?

1 A. What I know is that a POSA could call
2 upon -- possibly a member of their team that wasn't
3 mandatory, but they could call upon a dental
4 professional for their knowledge and experience.

5 Q. What is the field of technology of the
6 Carrier Publication?

7 A. I wasn't asked to opine on that.

8 Q. You have no opinion regarding the field
9 of technology of the Carrier Publication?

10 A. In a general sense, I can't answer that
11 question. I wasn't asked that. I was asked
12 specifically for my opinions regarding dental
13 aspects that were brought up by Dr. Kusnoto and his
14 opinion in his declaration.

15 Q. So to confirm, you do not have an opinion
16 regarding what the effective filing date is of the
17 Carrier Publication?

18 A. I do not have an opinion. I was told
19 what that was.

20 Q. Do you have an opinion regarding whether
21 the Carrier Publication is in the same field of
22 technology as the '409 patent?

1 A. I wasn't asked for my opinion on that.

2 Q. Is it fair to say you have no opinion on
3 that?

4 A. I would say if you're asking for my
5 opinion, again, I wasn't asked to opine on it. It
6 would take some time. I'd want to think about it
7 and put together an honest and well-thought-out
8 answer for you.

9 Q. That's fair. As of today, you have not
10 yet formed an opinion regarding whether the Carrier
11 Publication and the '409 are in the same field of
12 technology. Is that fair?

13 A. I'd be -- I could only -- my opinion is
14 there must be some relation because they're all a
15 part of this proceeding, but I wasn't asked
16 specifically how that -- how they work together.

17 Again, I -- the '409 patent I wasn't
18 asked to opine on.

19 MR. BLYTHE: I'm going to drop into
20 the chat what has been previously marked as
21 Exhibit 1006.

22 * * *

1 BY MR. BLYTHE:

2 Q. Let me know when you're able to take a
3 look at that or if you have a paper copy of
4 Exhibit 1006.

5 A. I have it in front of me.

6 Q. Do you recognize Exhibit 1006 as the
7 Carrier Provisional?

8 A. Yes, I do.

9 Q. And if you turn to what is page 17 in the
10 bottom right-hand corner where the paragraph
11 numbering of the Carrier Provisional begins.

12 Let me know when you've found that.

13 A. I'm on page 17.

14 Q. Okay. Do you see in paragraph 4 in the
15 Background section, the second-to-the-last sentence
16 beginning "If the camera"?

17 A. I don't see that. So we're on
18 Exhibit 1006, the Carrier Provisional.

19 Q. Page 17, paragraph 4, and that's marked
20 bracket 0004 closed bracket.

21 A. Oh, excuse me. I'm reading it as page 2
22 of 32, but I do see on the lower right-hand corner

1 it does say 0017th and I do see paragraph 0004
2 entitled Background.

3 Q. I will try to refer to the paragraphs
4 going forward, as I recognize there's two sets of
5 page numbers on this exhibit. But you're at
6 paragraph 4?

7 A. I see it.

8 Q. In the second-to-the-last sentence,
9 beginning "If the camera," do you see a reference to
10 the orthodontic standards?

11 A. This sentence -- would you like me to
12 read it?

13 If the camera --

14 Q. Sure.

15 A. "If the camera of the mobile phone is too
16 far to the teeth, dental photos cannot meet the
17 orthodontic standards."

18 Q. What is Carrier referring to when it says
19 the orthodontic standards?

20 [Document review.]

21 A. I believe he's referring to whatever
22 those standards may be that would allow the

1 orthodontist to glean the information they need to
2 achieve the goals for those dental photos.

3 Carrier did not define what those
4 orthodontic standards are, so I'm only -- I would
5 only have to believe this is a broad understanding
6 of what that could be.

7 BY MR. BLYTHE:

8 Q. Are you familiar with standards for
9 capturing orthodontic photos from your training and
10 experience?

11 MR. ARGENTI: Objection, form.

12 A. I'm familiar with standards. There are
13 quite a few standards depending on what standards
14 you're working with.

15 BY MR. BLYTHE:

16 Q. There are published guidelines from the
17 American Board of Orthodontics and the American
18 Association of Orthodontics regarding the capture of
19 dental photographs, correct?

20 A. Could you repeat that?

21 Q. Sure. There are guidelines from the
22 American Board of Orthodontics and the American

1 Association of Orthodontics regarding how to take
2 dental photographs, right?

3 A. That's correct, they have guidelines,
4 their guidelines.

5 Q. And in school, dental students are
6 instructed on standards for taking dental photos,
7 correct?

8 MR. ARGENTI: Objection, form.

9 A. Students are taught proper -- how to take
10 proper images. I guess you could say also
11 standards. There's just not one standard. There
12 could be many standards that were taught and also
13 that we practice in our profession.

14 BY MR. BLYTHE:

15 Q. Dental and orthodontic students are
16 taught to take a series of standard photographs of
17 patients, correct?

18 MR. ARGENTI: Objection, form, scope.

19 A. They're taught how to take dental
20 photographs. They're taught some photographs are
21 more common possibly than others, but there's no
22 absolute, one gold standard of a series of

1 photographs that we're taught.

2 BY MR. BLYTHE:

3 Q. Would you agree that you were taught to
4 take a series of standard photographs of patients?

5 A. I wouldn't put it that way. I was taught
6 how to take dental photographs for use in the field
7 of dentistry and orthodontics. There's many types
8 of photographs that can be taken.

9 Q. I'm going to drop into the chat what has
10 been marked previously as Exhibit 2037.

11 Do you have that exhibit with you today
12 in paper?

13 A. Exhibit 2037?

14 Q. Yes.

15 A. And what's the title of that exhibit?

16 Q. The title of that exhibit would be:
17 Declaration of Maureen Valley, D.M.D., M.P.H., M.S.
18 as filed on January 4, 2024, in the United States
19 District Court For the Northern District of
20 California.

21 A. I don't have that, and I didn't refer to
22 that.

1 Q. Understood.

2 I've put Exhibit 2037 in the chat as a
3 PDF. Are you able to click on that and download it
4 to your computer?

5 A. Let's see.

6 Q. I can also share my screen, if that's
7 helpful.

8 A. Pardon?

9 Q. I can also share my screen to guide along
10 if that's helpful, but I want to make sure you have
11 access to this exhibit.

12 A. If you'd like to share it, that might
13 save us time because I'm looking at this sidebar and
14 it's a little confusing.

15 Q. Okay. Let me make sure I'm sharing the
16 right exhibit, one moment.

17 Are you able to see my screen?

18 A. I can see your screen.

19 Q. Do you see that this document in the
20 lower right corner of what is marked as page 1 of 6
21 says Dental Monitoring EX. 2037?

22 A. I see that.

1 Q. Do you recognize this cover page as from
2 your declaration of January 2024 in the district
3 court litigation?

4 A. It's been quite a while. As I said, it's
5 been a busy year. Just by looking at this, I could
6 only assume that this is my document. It's been a
7 while. I really don't -- I'd have to take some time
8 to read through this.

9 Q. Okay. Does it -- do you recall being
10 asked by counsel for Align to offer opinions as an
11 expert witness regarding the state of the art
12 related to the '409 and '248 patents?

13 A. I recall I was asked that, yes.

14 MR. ARGENTI: I'm just going to point out
15 for the record that this Exhibit 237 is a partial
16 copy of Dr. Valley's declaration -- it's excerpts --
17 Which might not be immediately apparent to her since
18 she doesn't have the full document in front of her,
19 rather, doing the screen share.

20 BY MR. BLYTHE:

21 Q. Okay. Well, Dr. Valley, I want to make
22 sure you have a complete copy of this exhibit, so if

1 we need to go offline and work out you downloading
2 and/or printing a copy of this, we can do so. But
3 we're going to proceed in looking at this. So if
4 you would like to have a complete copy of this, let
5 me know and we will work to make sure that you have
6 access to it.

7 A. If this is something that is to be
8 discussed, I would like the complete copy. I'm a
9 little uncomfortable --

10 MR. ARGENTI: Just to be clear, my
11 objection was just to point out that the
12 complete copy of Exhibit 237 is a partial copy
13 of your declaration, Dr. Valley.

14 So this is the complete copy of --

15 MR. BLYTHE: This is not --

16 MR. ARGENTI: -- an exhibit --

17 MR. BLYTHE: This is not an objection
18 to my question. You've made your objections
19 on the record to the exhibits. If Dr. Valley
20 wants to have a complete copy of Exhibit 2037,
21 we can arrange for that. But that's it, with
22 respect to making objections. I'm not

1 introducing a new exhibit into this record.

2 MR. ARGENTI: I wasn't suggesting
3 that. I was only clarifying -- I think your
4 suggestion to download the complete copy was
5 confusing in and of itself. So that was my
6 clarification.

7 BY MR. BLYTHE:

8 Q. Dr. Valley, do you -- would you like
9 access to a complete copy of the PDF that is
10 Exhibit 2037?

11 A. Now I'm really confused.

12 Q. Sure.

13 A. I can't follow along what you're both
14 saying. I wasn't asked to review this document for
15 my declaration, my testimony.

16 Q. Okay.

17 A. And I don't want to proceed with this.

18 Q. So I have a question for you about this
19 document, and I need to be able to introduce
20 exhibits in this deposition whether they're part of
21 your declaration or not. So I want to make sure
22 that we get a copy of this to you in a way that

1 you'll be able to have as much information as is in
2 Exhibit 2037, and we'll go from there.

3 So are you able to download and view this
4 PDF on your computer? Or do you have access to be
5 able to print one of these?

6 A. You know, it's my understanding that
7 today's deposition is to discuss my declaration,
8 which is my testimony. I don't understand why --
9 why we're bringing in new documents for me to
10 discuss with you.

11 Q. Respectfully, Dr. Valley, you can discuss
12 that with your counsel after the deposition has
13 concluded. In this deposition, I am allowed to
14 introduce exhibits, particularly those that are
15 already in the record. I'm not limited to that
16 either, but I just want to clear the logistical
17 order.

18 This is a remote deposition. And if we
19 need to go off the record and make sure you have
20 access to this, again, we'll do it. But you tell me
21 how you'd like to proceed with being able to review
22 this exhibit, because I'm going to ask you questions

1 about it.

2 MR. ARGENTI: Dr. Valley, I'm going
3 to suggest, if you can, why don't you try to
4 download the exhibit of Exhibit 2037 that
5 should be available in the chat so that you
6 have control over the document and can see
7 what it does and does not contain.

8 THE WITNESS: I can do that. I just
9 may need some guidance as to how to download
10 the document.

11 I'm looking at the right-hand
12 sidebar. And --

13 BY MR. BLYTHE:

14 Q. My understanding is that if you click on
15 the -- what looks like the little image of the --

16 A. Okay.

17 Q. -- it will open up.

18 Did that work?

19 A. Okay. When I click on it, it's asking me
20 to save it somewhere. Can I save it to my desktop?
21 Is that okay?

22 Q. Yes, wherever is convenient for you.

1 A. Okay.

2 I've opened up the document on my
3 desktop.

4 Q. And my question was whether you recognize
5 the cover page as corresponding to your declaration
6 submitted on January 4, 2024, in the district court
7 proceeding.

8 A. So, again, without having reviewed this,
9 I see the document in front of me states this is my
10 declaration. The United States District Court,
11 Northern District of California, San Francisco
12 Division.

13 I'm scrolling down to the end. I'm
14 looking for a date.

15 I see on the very top in blue font, it
16 says this was filed January 4, 2024.

17 Q. Yes. This excerpt does not contain your
18 signature page, but I have a question about it and
19 we'll go from there, if -- I don't know that that
20 will be necessary, but let me ask my question and
21 then we'll go from there.

22 Could you turn to what is marked as

1 page 4 of 6 in the bottom right-hand corner of
2 Exhibit 2037.

3 A. I'm on page 4.

4 Q. Okay. Do you see paragraph 14 in the
5 second sentence beginning "We were taught"?

6 A. Yes.

7 Q. Would you agree that you were taught to
8 take a series of standards photographs of patients?

9 A. In that sentence, I stated: We were
10 taught to take a series of standard photographs of
11 patients (the same that we still take today), both
12 extraoral (exterior of the face) and intraoral
13 (interior of the mouth) for initial, progress, and
14 final records.

15 That's what I stated. We were taught in
16 dental school, and I have practiced that there are
17 some very common photographs that we take, and
18 that's what I was referring to when I said standard
19 photograph, common photographs. That does not
20 exclude different types of photographs.

21 And, once again, when you say standard of
22 photographs, there's no golden standard of

1 photographs. It depends on whose standard you're
2 talking about, whose standard you're practicing.
3 They can be different. When I ...

4 Q. Okay. With reference to the series of
5 standard photographs, for what purpose are dental
6 students taught to take those photographs?

7 A. Is your question asking dental
8 photographs in general or specific photographs?

9 Q. My question is with reference to the
10 series of standard photographs as you used that term
11 in Exhibit 2037.

12 A. Can you repeat your question, then,
13 again?

14 Q. Sure. With reference to the series of
15 standard photographs, for what purpose are dental
16 students taught to take those photographs?

17 A. It depends on what the purpose -- it
18 depends on whose standards they are and what the
19 goal of those photographs are for.

20 Dental photographs are used for
21 diagnostic purposes, treatment planning purposes,
22 tracking treatment and progress, and also final

1 photographs and tracking after treatment is
2 complete, so it's pretty broad.

3 Q. You mentioned it depends on whose
4 standards. Who might be a source of standards?

5 A. It could be in -- as a practicing
6 orthodontist or dentist, it could be -- I'm going to
7 give examples. You're going to take your board
8 certification examination for the ABO. They'll have
9 their standard photographs, their standard series of
10 photographs.

11 I could be in my practice and I've
12 determined a standard series of photographs, a
13 standard commonly used, type of photographs, types
14 of views that I would like in my practice.

15 Or another orthodontist or -- could
16 define what their standard is. Or a dental school
17 in a residency program could define what their
18 standard series of photographs are.

19 Q. What do you mean you --

20 A. In my sente --

21 Pardon?

22 Q. Please, I'll let you finish.

1 A. In my sentence here, I state: We were
2 taught to take a series of standard photographs of
3 patients (same that we take today).

4 In here, I'm explaining that that
5 includes both extraoral and intraoral. Exterior of
6 the face, and interior of the mouth. That's
7 standard. Or it could be standard. As opposed to
8 we're not taking pictures of the back of the head.

9 Q. You mentioned that one purpose might be
10 diagnostic. Can you clarify what you mean by
11 diagnostic?

12 A. Looking at so-called dental photographs.
13 Could you explain your question a little
14 bit more so I could answer it?

15 Q. Sure. I had asked about what the purpose
16 might be of taking that series of standard
17 photographs; and if I had this correct, you
18 mentioned several reasons, one of which was
19 diagnostic. So I was asking what you meant by
20 diagnostic as a reason for taking a series of
21 standard photographs?

22 A. It's -- the way you're asking the

1 question, to me, is a little bit challenging to
2 answer. As I've explained, the word "standard" can
3 be different standard of photos in many different
4 cases. So I could give examples of a standard for a
5 certain --

6 Again, I would be just giving speculative
7 examples and -- of standard pictures and then how
8 that would relate to the information that you would
9 get for diagnostic purposes.

10 Q. I think I understand. I'd like to make
11 this easier. If I'm understanding correctly, a
12 series of standard photographs could be taken for
13 many different purposes; is that correct?

14 A. Correct.

15 Q. Is one of those purposes diagnosing a
16 patient?

17 A. Correct.

18 Q. And you mentioned another purpose to be
19 treatment planning?

20 A. Correct.

21 Q. I believe you also mentioned that a
22 purpose could be tracking a treatment?

1 A. Correct.

2 Q. Are there any other purposes that you can
3 identify right now?

4 A. As I stated before, we'll take
5 photographs to -- final photographs to document
6 where the patient's finished in their treatment. We
7 will sometimes then continue taking photographs
8 after treatment has completed, to track the
9 stability of the work that we've performed. Just
10 off the top of my head, other reasons. And here I'm
11 talking about dental photographs in general, why we
12 take them.

13 Another one could be determining whether
14 or not the patient would be eligible for treatment
15 or would they be a good candidate for treatment,
16 before we even begin treatment.

17 Q. In each of the purposes that you've
18 mentioned, is it the dental professional who is
19 evaluating the photos after they're taken?

20 MR. ARGENTI: Objection, form.

21 A. These photographs -- let me state it this
22 way. Dental professional, yes, definitely uses

1 dental photographs in each of these -- for each of
2 these purposes.

3 BY MR. BLYTHE:

4 Q. Does a patient use these photographs for
5 any of those purposes?

6 A. They -- hard to say. It depends -- it
7 depends.

8 Q. What would it depend on?

9 A. At this point, I'd be speculating.

10 Q. Okay.

11 Is the training in dental school -- does
12 the training in dental school with regard to dental
13 photography address making the photos available for
14 analysis by a patient?

15 MR. ARGENTI: Objection, form.

16 A. That's very broad question.

17 BY MR. BLYTHE:

18 Q. Let me make it more specific.

19 For each of the purposes that we've just
20 been discussing, you mentioned that which photos are
21 taken could depend on whose standards are being
22 applied. Who would determine which standards or

1 which photos to take in addressing these purposes?

2 MR. ARGENTI: Objection, form.

3 A. It depends. It depends on -- it's --
4 there's so much it depends upon.

5 BY MR. BLYTHE:

6 Q. Let's take your experience for a moment.
7 You were in private practice for a significant
8 period of time as an orthodontist; is that correct?

9 A. Yes, I owned -- well, I've been in many
10 practices. I owned my own practice -- I'd have to
11 look at my CV to say exactly what years, but I owned
12 my own practice for several years.

13 Q. When you owned your own practice, did you
14 have a standard practice for taking dental photos?

15 A. I had a common series of photographs that
16 I had on my patients. And I say common because
17 quite often -- I was the doctor. I was the one that
18 made decisions on exactly what photographs needed to
19 be taken depending on what information was
20 necessary.

21 Q. Do you agree that there are standards for
22 taking dental photographs?

1 A. I would agree there are -- it depends on
2 how you define standards, but, yes, I would agree
3 there are standards. There are standards on what
4 makes for a good photograph of teeth. Then you
5 could see there are standards as to what views of
6 teeth might be -- might be wanted.

7 MR. BLYTHE: We've been going for
8 over an hour now. Why don't we take a
9 five-minute break. Does that work for
10 everybody?

11 MR. ARGENTI: Sounds good to me.

12 (Recess taken, 11:14 a.m. to
13 11:21 a.m. PDT)

14 BY MR. BLYTHE:

15 Q. Turning back to Exhibit 1006, at
16 paragraph 4 where we were first looking at the
17 reference to the orthodontic standards, does Carrier
18 define orthodontic standards?

19 A. So I'm pulling up Exhibit 1006,
20 paragraph 4.

21 Q. Yes.

22 A. Is that correct?

1 Q. Yes.

2 A. And looking at paragraph 4, so I
3 understand your question correctly, are you asking
4 me about a sentence in this paragraph?

5 Q. Yeah. Let me direct your attention to
6 the second-to-the-last sentence we were looking at
7 earlier that ends, "the orthodontic standards."

8 A. So I'll read this sentence to make sure
9 we're talking about the same thing:

10 "If the camera of the mobile phone is too
11 far to the teeth, dental photos cannot meet the
12 orthodontic standards."

13 Q. Correct. And my question is: Does
14 Carrier define the orthodontic standards?

15 A. In this paragraph, no.

16 Q. Does Carrier define the orthodontic
17 standards anywhere in the disclosure of the Carrier
18 Publication -- or excuse me, the Carrier
19 Provisional?

20 A. I'd like to answer that question
21 precisely. I'd like to -- it would take me a --
22 kind of refresh my memory and go back and see where

1 he mentioned the word "standard," or "orthodontic
2 standards."

3 Q. I believe I --

4 A. Just might --

5 Q. I'm sorry. Please, I didn't mean to
6 interrupt.

7 A. Sorry. I was just saying it just might
8 take me some time to do that.

9 Could you point me to other parts of the
10 paper that you might be thinking about?

11 Q. Sure. Let's start with paragraph 15.

12 A. I see paragraph 15, page 4 of 32.

13 Q. Do you see that the second sentence says:
14 The predetermined view can comprise a set of dental
15 images according to the orthodontic standards?

16 A. I see that sentence.

17 Q. Is the orthodontic standards defined in
18 this paragraph of Carrier?

19 A. He does not define what he -- what
20 orthodontic standards he's referring to in this
21 paragraph, no.

22 Q. Turning to paragraph 35.

1 A. I see paragraph 35, page 8 of 32.

2 Q. Okay. And the first sentence of
3 paragraph 35 begins: Figures 4A-4H illustrate 8
4 specific overlay images for the required types of
5 photos according to the orthodontic standard.

6 Do you see that?

7 A. I see that.

8 Q. Does Carrier define the orthodontic
9 standard in this paragraph?

10 [Document review.]

11 A. To answer your question specifically,
12 does he define orthodontic standard in this
13 paragraph, no. He is describing the Figures 4A
14 through 4H and stating that these are eight specific
15 overlay images. He states for the required types of
16 photos required by the orthodontic standard, but he
17 doesn't define what that orthodontic standard is.

18 BY MR. BLYTHE:

19 Q. Do you see, if you'd turn to
20 paragraph 74.

21 A. I'm on paragraph 74, page 15 of 32.

22 Q. Do you see that the first sentence of

1 paragraph 74 contains a very similar statement:
2 Figures 4A-4H illustrate 8 specific overlay images
3 for the required types of photos according to the
4 orthodontic standard?

5 A. It's a very similar sentence, yes.

6 Q. Okay. Is the orthodontic standard
7 defined in connection with paragraph 74?

8 A. It does not define in paragraph 74 what
9 orthodontic standard is.

10 Q. In paragraph 75, the next paragraph, the
11 last sentence on the page, do you see that it says:
12 The predetermined views can include a set of dental
13 images according to known orthodontic standards?

14 A. I see that sentence.

15 Q. Are you aware of any definition for
16 orthodontic standards as used in paragraph 75?

17 A. Can you repeat your question?

18 Q. Sure.

19 Does Carrier define orthodontic standards
20 as used in paragraph 75?

21 A. Does he define it in this paragraph? Is
22 that what you're saying?

1 Q. Are you aware of whether there's a
2 definition of orthodontic standards anywhere within
3 the Carrier Provisional?

4 A. I don't recall there being a specific
5 definition for what Carrier meant by orthodontic
6 standards, but what I do see is that he states
7 orthodontic standards in relation to certain
8 specific images of the teeth.

9 Q. Which images of those?

10 A. Well, going back to the paragraphs that
11 you just cited, for instance, paragraph 0074,
12 he's -- he's referring to -- in that first sentence,
13 where he mentioned orthodontic standard, he's
14 referring to Figures 4A through 4H.

15 Q. Is it your understanding that the photos
16 in Figures 4A to 4H are the photos according to the
17 orthodontic standard as defined by Carrier?

18 MR. ARGENTI: Objection, form.

19 A. Could you repeat your question again?

20 BY MR. BLYTHE:

21 Q. Yes. Is it your understanding that the
22 photos in Figure 4A to 4H are the photos according

1 to the orthodontic standard as defined by Carrier?

2 MR. ARGENTI: Objection, form.

3 A. Are we discussing paragraph 0074 when
4 you're asking me that question?

5 BY MR. BLYTHE:

6 Q. That's one instance. My question was
7 more general. We were talking about whether Carrier
8 defines orthodontic standards, and I had understood
9 that you referred to the photos in Figures 4 as
10 corresponding to what Carrier indicates are the
11 photos according to the orthodontic standards, and
12 I'm asking whether I understood that correctly.

13 A. What I understand, Figure 4A through 4H,
14 these are eight specific images, and Carrier states
15 that -- that these images are according to
16 orthodontic standard. He doesn't say what
17 orthodontic standard. He doesn't define that. But
18 he states that these are according to an orthodontic
19 standard.

20 Q. So according to Carrier, the orthodontic
21 standard requires the eight specific photos in
22 Figures 4A to 4H?

1 A. No, that's not how I would state it. He
2 does not define what -- you know, he also, when he
3 talks about the orthodontic standard, he's looking
4 at other images, also.

5 Q. Okay. So I'll go back to my original
6 question, which is does -- are you aware of anywhere
7 in the Carrier Provisional that defines the
8 orthodontic standard as used in paragraph 74 or 75?

9 A. I think, as I stated before, I don't
10 recall any section in the Carrier Provisional that
11 explicitly defines the orthodontic standard.

12 Q. When reviewing the Carrier Provisional,
13 did you have an understanding of what Carrier meant
14 by the orthodontic standard?

15 A. When reviewing the Carrier Provisional, I
16 understood it to be that these were predefined views
17 or images of teeth that Carrier felt were common
18 views that he was teaching as part of his method.

19 I did not read it to -- with the
20 understanding that these were the only views to his
21 teaching or his method or they were all required.
22 For instance, Figures 4A through 4H, I didn't

1 understand him -- his method to require all of these
2 views in order to practice his method. In fact,
3 there are -- I recall there were other sections of
4 his -- of the provisional which even talked about
5 custom photos. So it kind of left a lot of
6 flexibility.

7 There were some more common images, but
8 it also -- I did not feel that the method taught
9 required images or a required set or a required set
10 of standard photos.

11 Q. Is it your opinion that when Carrier uses
12 the term "orthodontic standards," he was referring
13 to a standard that -- let me rephrase that.

14 Is it your understanding that when
15 Carrier uses the term "orthodontic standards," he's
16 referring to a standard that he has decided?

17 MR. ARGENTI: Objection, form.

18 A. I don't think Carrier was -- was defining
19 an orthodontic standard. I think he was stating
20 that these images are according to orthodontic
21 standards that I interpreted it to mean maybe the
22 views. Again, there are just common ways we have

1 been taught, standards we've been taught, where you
2 take a picture of the front teeth at a right angle
3 as opposed to commonly taking it from a different
4 angle. I would say that's a standard.

5 Or it's commonly taught standards of
6 practice to take an image of the side teeth in a
7 certain way. So that could be interpreted as
8 standards.

9 Or standard as in, these are just
10 standard photos, these are common photos that are
11 commonly taken for many purposes in the dental
12 field.

13 BY MR. BLYTHE:

14 Q. Whether or not Carrier was appealing to
15 some specific standard as governed by one body or
16 another or implemented by one practitioner or
17 another, you would agree that by referring to the
18 orthodontic standard, Carrier was appealing to a
19 standard external to his patent, right?

20 MR. ARGENTI: Objection, form.

21 A. I don't feel Carrier was trying to invent
22 his own standard for required photos in the dental

1 field. I feel he was working within certain
2 commonly taught standards of taking dental
3 photographs.

4 BY MR. BLYTHE:

5 Q. And those standards of taking dental
6 photographs are commonly taught in the field of
7 dentistry and orthodontics, correct?

8 A. In the field of dentistry and
9 orthodontics, we are taught how to take dental
10 photographs of various kinds. We're taught what
11 makes for good images and what makes for not good
12 images. We're taught common views, but we're not
13 bound by those views.

14 Q. Do you agree --

15 A. We know --

16 Q. Sorry. Please continue.

17 A. We're taught what makes for a -- good
18 dental photographs, a good diagnostic photograph and
19 what isn't a good diagnostic photograph.

20 Q. Would you agree that the views in
21 Figures 4A to 4H are common views?

22 A. Interesting that you should bring that

1 up. Yes, these are common views. Just in my own
2 experience, like, for instance, Figure 4F and
3 Figure 4H, typically, when we take photographs, or
4 in my experience, in all of my years and in
5 teaching, this is just another way of doing a buccal
6 view on the right or left is to have them open.
7 Now, that's -- certainly, if that's something that
8 the dental professional feels is important to take,
9 they will take that, and they might define that as a
10 part of their standard photographs.

11 But when I look at this, you know,
12 certainly Figure 4A is a very, very common
13 photograph, Figure 4B is also somewhat common.
14 Figure 4E is very, very common, as is 4G. Figure 4F
15 is less so and so is Figure 4H, but that's just my
16 experience.

17 Q. Going again within Exhibit 1006, would
18 you turn back to paragraph 6. The first paragraph
19 in the Summary of The Disclosure.

20 A. I see paragraph 6, page 3 of 32.

21 Q. Okay. In the middle of that paragraph,
22 do you see the sentence that reads: The method can

1 further comprise displaying, on the screen, an
2 overlay comprising an outline of teeth in a
3 predetermined view, wherein the overlay is displayed
4 atop the view of the patient's teeth?

5 A. I see that sentence.

6 Q. We've addressed the overlay in Carrier
7 Provisional in your declaration, correct?

8 A. Yes, I've discussed the overlay in my
9 declaration.

10 Q. And is it your understanding that the
11 overlay works to align the photo with the patient's
12 teeth to capture the desired view?

13 Sorry. Let me rephrase.

14 Is it your understanding that the overlay
15 works for align the camera with the patient's teeth
16 to capture the desired view?

17 A. Could you repeat that one more time?

18 Q. Is it your understanding that the overlay
19 works to align the camera with the patient's teeth
20 to capture the desired view?

21 A. It's my understanding that the overlay
22 assists the user in capturing a predetermined view.

1 Q. How does it do that?

2 MR. ARGENTI: Objection, form.

3 A. So you want me to describe how this --
4 how that -- how the overlay is used just in a
5 general sense?

6 BY MR. BLYTHE:

7 Q. What's your understanding of how the
8 overlay assists the user in capturing a
9 predetermined view?

10 A. I'd like to kind of, maybe go back to my
11 declaration --

12 Q. Okay.

13 A. -- and see where I discuss this. I want
14 to make sure I give an accurate answer.

15 [Document review.]

16 A. So in my declaration, paragraph 23,
17 page 7, I state: The Carrier Provisional describes
18 "methods and apparatuses to obtain an image of a
19 patient's teeth for therapeutic use." This can
20 include "displaying an overlay comprising an outline
21 of teeth in a predetermined view" on a device such
22 as a mobile phone, "moving the mobile phone so that

1 the overlay approximately matches the patient's
2 teeth in the view of the patient's teeth" and
3 "capturing an image of the view of the patient's
4 teeth."

5 And I am citing the Carrier Provisional
6 in the abstract on page 47.

7 BY MR. BLYTHE:

8 Q. When you say displaying an overlay
9 comprising an outline of teeth, that means
10 displaying on the screen of the device such as a
11 mobile phone, correct?

12 A. Pretty much what it says here, which is
13 what I took from the abstract, that displaying an
14 overlay, which comprises an outline of teeth, and
15 this is displayed on a device such as a mobile
16 phone.

17 Q. And if it's displayed on a mobile phone,
18 it would have to be displayed on the screen of the
19 mobile phone, right?

20 A. On the screen.

21 Q. When you say -- or when Carrier says
22 "moving the mobile phone so the overlay

1 approximately matches the patient's teeth," you
2 understand that the user is moving the mobile phone
3 so that the overlay approximately matches the
4 patient's teeth, correct?

5 A. I would understand that to be that the
6 user can move the mobile phone so that the overlay
7 approximately matches the patient's teeth.

8 Q. Are you aware of anyone other than the
9 user who could move the mobile phone so that the
10 overlay approximately matches the patient's teeth?

11 A. Are you saying according to the Carrier
12 Provisional?

13 Q. Correct.

14 A. It's my understanding that the user is
15 the person -- let me back up. Can you repeat your
16 question again?

17 Q. Yes. You understand that the user is
18 moving the mobile phone so that the overlay
19 approximately matches the patient's teeth, correct?

20 MR. ARGENTI: Objection, form.

21 A. I understand in the Carrier Provisional
22 that the user is the one operating the mobile phone.

1 BY MR. BLYTHE:

2 Q. Okay. And whomever is operating the
3 mobile phone would have to move the phone in order
4 to have the overlays align with the patient's teeth,
5 correct?

6 A. I understand the user is the one
7 operating the phone. They're holding the phone and
8 they're moving the phone.

9 Q. And they are moving the phone so that the
10 overlay approximately matches the patient's teeth,
11 correct?

12 A. They're moving the phone so that the
13 overlay approximately matches the patient's teeth.

14 Q. And in order for the user to move the
15 phone so that the overlay approximately matches the
16 patient's teeth, the user would need to be able to
17 see the overlays on the screen, correct?

18 A. Well, not necessarily. I know that the
19 Carrier Provisional does teach that there are, for
20 instance, audible and tactile features that can
21 assist the user in matching the overlay with the
22 teeth.

1 Q. What is your understanding as to how an
2 audible or tactile feature could assist the user in
3 matching the overlay with the teeth?

4 A. I'm going to find that section in my
5 declaration here where I describe that.

6 Bear with me as I find that.

7 [Document review.]

8 BY MR. BLYTHE:

9 Q. If it helps, I believe you address
10 audible and tactile guidance in paragraph 33.

11 A. Thank you.

12 [Document review.]

13 A. Yes, thank you. I see that I mentioned
14 that in paragraph 33 where I said: And even if some
15 images may be more difficult for some patients to
16 take due to difficulty seeing the screen, such as an
17 occlusal image of an upper or lower arch, the
18 Carrier Provisional teaches that audible or tactile
19 guidance may be used to aid in alignment.

20 And I was referring to the Carrier
21 Provisional paragraph 63 when I stated that.

22 * * *

1 BY MR. BLYTHE:

2 Q. Can you clarify what is an occlusal image
3 of an upper or lower arch?

4 A. An occlusal image of an upper or lower
5 arch is an image of, for instance, in the upper
6 arch, of the occlusal surface, as we say, of the
7 teeth in that dental arch.

8 So it's, I guess you could say, like the
9 biting surfaces of the teeth.

10 Q. Would that correspond generally to
11 Figure 4C?

12 A. 4C in the Carrier Provisional?

13 Q. Yes.

14 A. Yes.

15 Q. Okay.

16 A. Or 4D.

17 Q. Going back to my original question, what
18 is your understanding as to how an audible or
19 tactile feature could assist the user in matching
20 the overlay with the teeth?

21 A. I'm going to take a look at the
22 Provisional paragraph 63.

1 As I do that, I'm just going to reach
2 over and turn off a fan that I have blowing on me,
3 and I'm getting kind of cold. So bear with me one
4 second as I turn off that fan.

5 Q. No problem.

6 [Document review.]

7 A. Could you please repeat your question?

8 BY MR. BLYTHE:

9 Q. What is your understanding as to how an
10 audible or tactile feature could assist the user in
11 matching the overlay with the teeth?

12 [Document review.]

13 A. I understand that it would assist the
14 user with either a sound or a vibration when the
15 overlay is aligned with the patient's teeth, and
16 that could guide the user in then capturing the
17 image, because it's indicating to them that you --
18 the overlay now approximates the view of the teeth.

19 BY MR. BLYTHE:

20 Q. So I want to make sure I understand we're
21 on the same page about the hypothetical here. If
22 the patient is taking an image where they're unable

1 to see the screen and they need to align the overlay
2 with the teeth, the only indication that the
3 visual -- excuse me, audible or tactile feedback
4 would give is when the overlay is in fact aligned
5 with the teeth; is that correct?

6 MR. ARGENTI: Objection, form.

7 A. I understand it could be when the overlay
8 approximately matches the teeth.

9 BY MR. BLYTHE:

10 Q. The Carrier Provisional does not disclose
11 that the audible or tactile guidance would guide the
12 user as to how to achieve that approximate match,
13 correct?

14 MR. ARGENTI: Objection, form.

15 A. I don't think I understand your question.

16 BY MR. BLYTHE:

17 Q. Sure. If a patient can't see the screen
18 and needs to align a visual overlay with the visual
19 outlines of their teeth, they're doing so blindly,
20 right?

21 MR. ARGENTI: Objection, form.

22 A. If the patient can't see what's on the

1 screen, they can't see what's on the screen.

2 BY MR. BLYTHE:

3 Q. Okay. So the patient is trying to align
4 the overlay with their teeth. They can't see what's
5 on the screen. Other than by happenstance aligning
6 it with their teeth and getting audible and tactile
7 feedback that that approximate alignment has been
8 achieved, Carrier Provisional does not disclose
9 giving any other audible or tactile guidance to
10 achieve that approximate alignment?

11 MR. ARGENTI: Objection, form.

12 A. If we're discussing, for instance,
13 figures -- I forget which figures those are. The
14 occlusal views? In my experience, a patient taking
15 these pictures of themselves with a cellphone can
16 begin with some visual cues to bring the camera
17 approximately to a position where the overlay can
18 match the teeth. But maybe the final adjustment,
19 they would rely on audible or tactile cues to get
20 that proper angle and that proper distance, but they
21 could probably start with a visual assessment of
22 where that is.

1 BY MR. BLYTHE:

2 Q. So they could start with a visual
3 assessment, but Carrier Provisional does not
4 disclose getting audible or tactile guidance to
5 achieve the approximate alignment, only audible and
6 tactile guidance that that approximate alignment has
7 been achieved?

8 [Document review.]

9 A. What I understand is that these
10 indicators such as the audible and tactile
11 indicators are there to help guide the user to
12 approximately match the overlay with the teeth.
13 They're guidance.

14 BY MR. BLYTHE:

15 Q. In paragraph 63, the sentence states:
16 For example, any of the methods and apparatuses
17 described herein may be used to indicate (e.g., by
18 visual and/or audible and/or tactile) image, that
19 the teeth are aligned in the frame with the overlay.

20 Is it your understanding that "indicate
21 that the teeth are aligned" is a disclosure that
22 those methods can indicate how to align?

1 A. Which sentence in paragraph 63 did you
2 just quote?

3 Q. I'm looking at the sentence in
4 paragraph 63 that refers to audible and/or tactile.

5 A. The second sentence?

6 Q. Yes.

7 A. And, again, repeat your question?

8 Q. Is it your understanding that when
9 Carrier indicates that the methods and apparatuses
10 described herein may be used to indicate that the
11 teeth are aligned in the frame with the overlay
12 discloses that those methods and apparatuses can be
13 used to indicate how to align the teeth in the frame
14 with the overlay?

15 A. It's my understanding the Carrier
16 Provisional teaches methods that may include these
17 indicators, and the indicators will, for instance,
18 if it's audible, create an audible sound or if
19 tactile will create some type of vibrational feeling
20 that -- from the smartphone itself, it comes from
21 that. These indicators are triggered when the
22 overlay matches the teeth.

1 Now, I don't recall -- your question is
2 does -- correct me if I'm wrong. You're asking me
3 does the provisional teach how this works?

4 I wasn't asked to opine -- or is your
5 question does the provisional -- yeah, teach how
6 that works? I wasn't asked to opine on that.

7 What I understand and what I -- yeah,
8 what I understand is that these features are there,
9 and they can help guide the user of the cellphone to
10 take photographs by guiding them, and these
11 indicators will alert the user when, again, the
12 overlay approximates the teeth.

13 I wasn't asked to opine on whether or not
14 this method teaches how that's done.

15 Q. Okay. I don't mean for this to be
16 cryptic, so I want to explain what I'm getting at
17 here and then I'll ask my question and maybe this
18 will clear it up.

19 I'm reading in the second sentence of
20 paragraph 63 that the audible or tactile indicators
21 are used to indicate that the teeth are aligned.
22 And I had heard your opinion, and your opinion in

1 paragraph 33, to be that they may be used to aid in
2 alignment. And I'm trying to confirm whether it's
3 your opinion, your understanding of the Carrier
4 Provisional that the audible and tactile indicators
5 are doing anything other than indicating that the
6 teeth are in alignment.

7 A. And my viewpoint is nothing more than
8 stating my understanding is that the indicators will
9 create, for example, sounds and vibrations that
10 communicate to the user that that overlay is
11 approximately -- approximating the teeth of the
12 predetermined view, or that -- it's just
13 approximating the teeth in the predetermined view,
14 correct. And that's -- I'm not saying anything more
15 than that.

16 Q. I want to confirm: It's not your opinion
17 that the Carrier Provisional is teaching that the
18 mobile device would, for example, speak instructions
19 to the user how to move their phone such that the
20 overlay will get closer to alignment, correct?

21 A. I don't know.

22 MR. ARGENTI: Object to the form.

1 BY MR. BLYTHE:

2 Q. Okay. That was not what you intended
3 when you indicated in your declaration that audible
4 and tactile guidance may be used to aid in
5 alignment?

6 A. Oh, excuse me. Are you saying when I
7 said "audible," as in referring to actual audible
8 instructions?

9 Q. I'm just asking what you mean when you
10 say: The Carrier Provisional teaches that audible
11 or tactile guidance may be used to aid in alignment.

12 A. What I was referring there to was not
13 actual verbal instructions in this particular
14 example, in this particular paragraph. I was
15 referring to, for instance, a sound or a vibration.

16 Now, I did not give an opinion here
17 regarding verbal instructions, audible/verbal
18 instructions.

19 Q. And you're not aware of the Carrier
20 Provisional discussing such verbal instructions,
21 correct?

22 A. I was not asked to give an opinion on

1 that.

2 Q. And as a result, you are not aware of
3 anywhere in the Carrier Provisional that discusses
4 giving verbal instructions to aid in alignment,
5 correct?

6 MR. ARGENTI: Objection. Form,
7 scope.

8 A. I was not asked to give an opinion on
9 that.

10 BY MR. BLYTHE:

11 Q. My question is slightly different. I
12 just want to know whether you are aware, sitting
13 here today, of anywhere in the Carrier Provisional
14 that refers to such guidance.

15 MR. ARGENTI: Objection, form, scope.

16 A. I honestly can't give you a "yes" or "no"
17 answer to that question because it wasn't something
18 that I focused on or was asked to give an opinion
19 on.

20 I'm sorry. I just don't know.

21 BY MR. BLYTHE:

22 Q. Understood. So to clarify, whether or

1 not there is such disclosure in the Carrier
2 Provisional, you are not aware of whether there is
3 such a disclosure sitting here today?

4 MR. ARGENTI: Objection. Form,
5 scope.

6 A. Once again, I was not asked to opine on
7 whether or not the provisional disclosed such
8 methods; and, therefore, I couldn't say whether or
9 not it did.

10 BY MR. BLYTHE:

11 Q. In paragraph 33 of your declaration, you
12 cite the Carrier Provisional at paragraph 63 in
13 connection with the audible and tactile guidance.
14 Is there anywhere else in the Carrier Provisional
15 that you are aware of that teaches that audible or
16 tactile guidance may be used to aid in alignment?

17 A. I can't say for sure. I'm recalling
18 there were probably more than just that paragraph --
19 there was more than just that paragraph. I'd have
20 to kind of comb through the provisional, and I'd
21 probably be able to give you a better answer to
22 that.

1 Q. Do you recall deciding not to cite
2 certain support in the Carrier Provisional for your
3 statement in paragraph 33?

4 A. No, I do not recall.

5 Q. In the first sentence of paragraph 33,
6 you indicate that: Some images might be more
7 difficult for some patients to take due to
8 difficulty seeing the screen, such as an occlusal
9 image of an upper or lower arch.

10 And my question is: When you say more
11 difficult, do you mean that the patient would not be
12 able to see the screen?

13 A. What I was referring to here is certainly
14 some images would be probably a little more
15 challenging than others for a patient to take on
16 themselves, maybe not impossible. I know some
17 images could be very easy for a patient to take on
18 themselves, and I disclose that, what those images
19 were in my declaration.

20 And what I'm saying here is even if those
21 images which were more -- which are probably more
22 difficult for the patients to take, it's because

1 it's probably harder to view the image from the
2 cellphone screen at some point.

3 Q. Could you take a look at Figure 6B of
4 Carrier Provisional? It's on page marked as 54 in
5 the lower right-hand corner.

6 A. Figure 6B?

7 Q. 6B, yes.

8 A. Correct, I see it.

9 Q. So setting aside the overlay and what's
10 indicated on this screen, which I understand to be
11 requesting an upper jaw image where this photo
12 appears to depict a lower jaw image, my question is
13 just about the position of the camera with respect
14 to the patient's teeth.

15 So my question is: Is what's seen on the
16 camera screen here approximate to what we were
17 discussing with respect to an occlusional image of
18 the lower arch?

19 A. From -- first of all, the image is kind
20 of blurry. I don't know if there's a better image
21 of Figure 6B than the one that I have here. And I
22 don't think I understood your question entirely.

1 Q. Let's start by getting a better image.
2 I'm going to introduce into the chat what has
3 already been marked as Exhibit 1005, which is the
4 Carrier Publication.

5 Do you have a copy of that printed with
6 you today?

7 A. 1005.

8 I do have a paper copy of that, a hard
9 copy.

10 Q. Okay.

11 A. Are you referring to Figure 6B --

12 Q. Yes.

13 A. -- in Exhibit 1005?

14 I see it.

15 Q. Setting aside the overlay and the
16 indication on the bottom part of the screen that
17 says upper jaw, do you recognize the general view of
18 the patient's mouth as one of an occlusional image
19 of the lower arch?

20 A. I certainly see this as an occlusal view.

21 I'd like to maybe skip to where in this
22 document they describe this illustration, because I

1 have to refresh my memory. I'm not sure if, you
2 know, we see the teeth on the top of the image.
3 Those are the upper teeth. I recognize what upper
4 teeth look like. And then the arch of teeth, if
5 you're telling me to ignore what I believe to be the
6 overlay, what set of teeth are under that.

7 And just to clarify, you're saying that
8 those are lower teeth?

9 I'm just trying to --

10 Q. That's my question. I'm just trying to
11 set up an example, so we're working with an actual
12 rough image of what might appear on the camera
13 screen if a patient is directing the phone towards
14 the occlusal view of the lower arch.

15 A. Okay. And what I'm trying to determine
16 is in this illustration is there -- is this
17 illustration including that there's a mouth mirror
18 that was placed in the mouth so that we're actually
19 seeing a mirror image of the upper teeth? As
20 opposed to what you stated, these are lower teeth.

21 Q. Excellent question. That might be a
22 difference between Figure 6B in the Carrier

1 Provisional and the Carrier Publication that I had
2 not appreciated. But either way, if you want to
3 take a look at the description, the -- to determine
4 that, if it makes it easier to answer. I'm not sure
5 that it will be necessary to answer the question I
6 have about this figure, but we can look for where
7 Figure 6B is described.

8 Let me check. I might be able to find
9 that for you quickly.

10 [Document review.]

11 BY MR. BLYTHE:

12 Q. Yes, if you turn to what's marked at the
13 top as page 11, paragraph 127 of Exhibit 1005.

14 A. Page 11 of 17?

15 Q. That --

16 A. I'm sorry. That --

17 Q. Yeah, of Exhibit 1005. I believe is --

18 A. Page 17? I'm on page 17 now.

19 Q. Sorry, page 11.

20 A. Oh, I'm sorry.

21 Q. Paragraph 127. If that's easier.

22 A. I see that paragraph 127. Yes.

1 I'll read this.

2 Q. Okay.

3 [Document review.]

4 A. So looking at the Figure 6B, according to
5 paragraph 0127, it's stating that the apparatus also
6 indicates that a dental mirror should be used to
7 take the upper jaw image, and that dental mirror is
8 designated number 609.

9 I know Figure 6B is an illustration, and
10 there's lots of lines and angles in this picture,
11 but if you'd like for the purpose of our discussion
12 to assume that there's, in this image, a dental
13 mirror reflecting the image of the upper teeth onto
14 it, so what we're looking at is the actual upper
15 teeth, and then the reflection of the upper teeth in
16 the dental mirror, I'll -- we can do that.

17 BY MR. BLYTHE:

18 Q. Okay. Great.

19 And so my question is: Would the patient
20 be able to see the screen in the orientation
21 depicted in Figure 6B?

22 A. If the patient was the user holding the

1 camera? Yes, they may be able to.

2 Q. Which camera on the phone would -- let me
3 rephrase that.

4 Is it your understanding that the Carrier
5 Provisional discloses the use of a front-facing
6 camera?

7 A. I do not recall if Carrier defined which
8 face of the camera is part of the method. I would
9 assume patients would know how to do this. Even in
10 2017, people were quite proficient with operating
11 cell phones and taking selfies and flipping the
12 screen back and forth.

13 Q. Are you aware of any discussion in the
14 Carrier Provisional of the use of the front-facing
15 camera?

16 A. Off the top of my head, I don't recall.
17 I have to look at the Provisional.

18 Q. Are you aware of anywhere in the Carrier
19 Provisional that refers to the term "selfie"?

20 A. I know I used the term in my declaration.
21 I do not recall the Carrier Provisional -- I could
22 be wrong, but I don't recall it being spoken of or

1 written in the provisional.

2 Q. Okay. So let's take the --

3 Oh, sorry. Please.

4 A. As we all know, it's -- selfie is a
5 common term used, people taking pictures of
6 themselves. On their cellphones usually, or other
7 types of devices they may own.

8 Q. Let's take this one camera at a time.

9 If the patient were using the back-facing
10 camera in taking a photo with an alignment similar
11 to that in Figure 6B, is it your understanding that
12 the patient would be able to see the screen?

13 MR. ARGENTI: Objection to form.

14 A. Just common sense, they wouldn't be able
15 to.

16 BY MR. BLYTHE:

17 Q. Okay. Do you have an understanding of
18 how close the camera would need to be to the
19 patient's mouth in order to acquire a photo from a
20 view similar to that pictured in Figure 6B using the
21 front-facing camera?

22 MR. ARGENTI: Objection, form.

1 A. Could you repeat that one more time,
2 please.

3 BY MR. BLYTHE:

4 Q. Yes. Do you have an understanding of how
5 close the camera would need to be to the patient's
6 mouth in order to acquire a photo from a view
7 similar to that pictured in Figure 6B using the
8 front-facing camera?

9 MR. ARGENTI: Objection, form.

10 A. I have a general sense. Certainly, from
11 the outer limit, it's not going to be any further
12 than your arm's length. And I -- from my
13 experience, it's within the range of how far your
14 arm can hold the camera.

15 BY MR. BLYTHE:

16 Q. And your experience with taking let's say
17 a selfie using the front-facing camera, if the
18 camera is held at arm's length, common sense would
19 dictate that you could see your entire face, maybe
20 even your friend in the photo, right?

21 MR. ARGENTI: Objection, form.

22 A. I want to make sure I understand your

1 question correctly.

2 So you're discussing an example of taking
3 a photo of yourself and your friend. You're the one
4 holding the camera in your hand. And your question
5 is if you flipped it so that it's a front-facing
6 screen on your camera, meaning you can actually see
7 what's on the screen if you're taking a photo of
8 yourself -- and what was your question?

9 BY MR. BLYTHE:

10 Q. My question is, if the camera phone was
11 held at arm's length, you would be able to see
12 your -- at least your entire face, right?

13 MR. ARGENTI: Objection, form.

14 A. I would say it's possible.

15 BY MR. BLYTHE:

16 Q. Is it your understanding based on your
17 review of the Carrier Provisional that the distance
18 of the camera of the mobile device to the patient's
19 teeth is important in -- important to the quality of
20 the dental photos acquired?

21 A. So I wasn't really asked in my
22 declaration to make opinions on how distances of

1 cameras from objects, how they work and what's
2 visible; and right now I'm speculating, I'm just
3 giving you my thoughts on what I think, and I'm
4 unsure how this relates to my declaration or what
5 part of my declaration we're really talking about
6 here.

7 Q. Sure. Let me refocus that.

8 Were you speculating when you suggested
9 the level of difficulty that would be required to
10 take the photos disclosed in the Carrier Provisional
11 as the patient acquiring those photos of their own
12 teeth?

13 MR. ARGENTI: Objection, form.

14 A. And, again, can you refer me back to that
15 part of my declaration where I say that?

16 BY MR. BLYTHE:

17 Q. Yes. Paragraph 33.

18 A. In paragraph 33, I was stating: And even
19 if some images might be more difficult for a
20 patient.

21 And from my experience, I know that
22 occlusal views might be one of those. That's what

1 is what I was referring to here. I was not
2 speculating. I was going off of my experience.

3 And not only that, I was just stating
4 that I know some photos are much easier for a
5 patient to take than others. Some photos are very
6 easy for patients to take. As I mentioned in my
7 declaration, they're similar to just commonly taken
8 selfies.

9 But even if the patient found some other
10 photo images more difficult, there were these ways
11 that they could be guided. And I cited the example
12 of occlusal views as being maybe a little trickier
13 for the patients to take, a little more difficult;
14 and I know that just by taking them throughout my
15 career and my experience.

16 Q. To clarify, when you say "taking them
17 throughout your career and your experience," do you
18 mean taking images of an occlusal view of your own
19 teeth with a cellphone camera?

20 A. It's not something that I do every day,
21 is take images of my own teeth; but I've taken
22 enough occlusal images that I have a pretty good

1 understanding of how I might be able to do that
2 myself on myself.

3 MR. ARGENTI: We've been going for
4 over an hour. Are we coming up at a good time
5 for a break?

6 MR. BLYTHE: Yeah, we can pause at any
7 time. And we should discuss whether, you
8 know, Dr. Valley, if you want to make this a
9 lunch break. But we can go off the record.

10 (Recess taken, 12:35 p.m. to
11 1:07 p.m. PDT).

12 BY MR. BLYTHE:

13 Q. Dr. Valley, we were looking at
14 paragraph 33 of your declaration which is
15 Exhibit 1035. Can you please turn back to
16 paragraph 33.

17 A. I'm on that paragraph.

18 Q. Do you agree that a patient taking an
19 image -- sorry, let me rephrase.

20 Do you agree that a patient taking an
21 occlusal image of their own lower arch using a
22 cellphone would be unable to see the screen of the

1 cellphone at the time the image is captured?

2 MR. ARGENTI: Objection, form.

3 A. I couldn't say for sure whether or not
4 they could see the screen.

5 BY MR. BLYTHE:

6 Q. You don't have an opinion one way or
7 another as to whether a patient could see the screen
8 in that circumstance?

9 A. I certainly feel, again, with my
10 experience taking these types of photos that the
11 patient would be able to see the screen. For the
12 most part, it just might be difficult to see the
13 precise image on the screen, but I'm not disputing
14 that they couldn't see an image on the screen.

15 Q. A couple of points of clarification.
16 When you say with your experience taking these types
17 of photos, do you mean in the clinical setting using
18 your in-office equipment?

19 A. I'm not sure I understand your question.

20 Q. Sure. When you say "in my experience
21 taking these types of photos that the patient would
22 be able to see the screen," is your experience in

1 taking photos of your own teeth using a cellphone?

2 A. As I explained before, I don't commonly
3 take this type of picture of my own teeth. I have
4 taken thousands of these -- of occlusal photos on
5 patients, and I understand the method that it
6 requires and I am -- I am confident that patients
7 could certainly at least give it a try. They --
8 some patients might be successful at it; some may
9 find difficulty doing it.

10 But, as I also mentioned before, this is
11 just one of many photographs; and I know there are
12 certain photographs that I'm highly confident
13 patients would be able to take on their own.

14 Q. So my question is a little more narrow
15 than that, and it's just whether the patient would
16 be able to see the screen at the time the image is
17 captured in taking an occlusal image of their own
18 lower arch.

19 MR. ARGENTI: Objection, form.

20 A. I'd be speculating here. They may or may
21 not be able to see the screen at the time the image
22 is captured. They may be able to; maybe not.

1 My declaration in paragraph 33 discusses
2 that, for instance, this type of image, that they
3 could use other forms besides imagery to help guide
4 them and aid them in the alignment.

5 BY MR. BLYTHE:

6 Q. Still looking at paragraph 33, in the
7 middle of the page, do you see the sentence that
8 begins, Indeed?

9 A. Yes, I see.

10 Q. It says: Indeed, the Carrier Provisional
11 teaches that users can select which images to take,
12 and also allows for images from custom angles.

13 Do you see that?

14 A. I see that sentence.

15 Q. Focusing on your opinion that Carrier
16 teaches that users can select which images to take,
17 what is your basis for indicating that the Carrier
18 Provisional teaches that?

19 [Document review.]

20 A. In paragraph 33 of my declaration, the
21 sentence beginning with indeed that you're asking
22 about, I referenced the Carrier Provisional

1 Exhibit 1006, paragraphs 75 through 78. And in
2 paragraph 75, it states: For example, Figure 5A
3 shows an example of a user interface to enable a
4 user to select one of a plurality of overlays.

5 BY MR. BLYTHE:

6 Q. Other than that statement in
7 paragraph 75, are you relying on any other
8 disclosure from the Provisional that it teaches that
9 users can select which images to take?

10 A. In this particular paragraph, I was
11 relying on that.

12 Q. Are you relying on any other disclosure
13 from paragraphs 75 to 78?

14 A. I would have indicated if I was; but for
15 this explanation in my declaration, I was relying on
16 this one right here.

17 Q. Do you see in the preceding sentence in
18 Carrier Provisional paragraph 75, it says: The
19 method and apparatus may walk the user through
20 taking a complete or partial set of these images?

21 A. I see that.

22 Q. And then, would you turn to Figure 5A.

1 A. I'm on that page, or at that figure.

2 Q. Do you see that in Figure 5A, there are,
3 I believe, 11 total views, eight of which are of the
4 teeth?

5 A. I see that.

6 Q. And do those eight views of the teeth
7 appear to correspond to the views in Figures 4A
8 through 4H?

9 A. Yes.

10 They're not the exact images, but they do
11 correspond to views of teeth that are similar.

12 Q. Right. And in Figures 4A through 4H,
13 these are the overlays that correspond to the views
14 that are pictured in Figure 5A, right?

15 A. I understand the images in 4E through 4H
16 correspond to -- or illustrate eight specific
17 overlay images, and the images in 5A -- or the
18 Illustration 5A is an example of a user interface to
19 enable a user to select one of a plurality of
20 overlays.

21 Q. What's your understanding of what the
22 application shown in Figure 5A would do if a user

1 selects one of those views?

2 MR. ARGENTI: Objection, form.

3 A. Repeat that question one more time?

4 BY MR. BLYTHE:

5 Q. Looking at Figure 5A, what is your
6 understanding of what the application would do when
7 a user selects one of those views?

8 MR. ARGENTI: Objection, form.

9

10 A. My understanding from the Carrier
11 Provisional, and I'm referring to paragraph 75, is
12 that it will show the user what images they should
13 take.

14 BY MR. BLYTHE:

15 Q. Figure 5A is showing the user what images
16 they should take?

17 A. Let me clarify. Excuse me.

18 Figure 5A is an example of a user
19 interface that would enable the user to select
20 certain images. And once those images are selected,
21 then those would be the selected images that the
22 user would know to take.

1 Or a user would know to take.

2 Q. Is it your understanding that the

3 Figure 5A --

4 Is it your understanding that Figure 5A
5 is showing a selection of views that can be added to
6 a set to be taken?

7 MR. ARGENTI: Objection, form.

8 A. You may have to elaborate. I don't
9 understand what you mean by added to a set.

10 BY MR. BLYTHE:

11 Q. Let me rephrase that. I'll ask a
12 different question. And let me rotate my own paper
13 so I don't have to...

14 One moment.

15 Okay. Figure 5A shows a little plus sign
16 in the upper right-hand portion of each of the
17 views. Do you see that?

18 A. I see that.

19 Q. What is your understanding of what the
20 plus sign indicates?

21 [Document review.]

22 A. I would understand that to be -- I would

1 be speculating here, but I think it would have
2 something to do with the selection, the selection of
3 which views. Whether that means it was already
4 selected or whether or not the user clicks on that
5 and it's selected, I don't know. It wasn't defined,
6 but I would assume it may have something to do with
7 the overall concept of ability to select views.

8 BY MR. BLYTHE:

9 Q. Going back to paragraph 33 of your
10 declaration, in that same sentence, you also refer
11 to allowing for images from custom angles.

12 Do you see that?

13 A. I see that.

14 Q. Where in the Carrier Provisional does --

15 (Clarification by reporter.)

16 BY MR. BLYTHE:

17 Q. Where in the Carrier Provisional does it
18 discuss taking images from custom angles?

19 [Document review.]

20 A. I was referring to paragraph 79. So all
21 apologies, I guess this could be considered a second
22 typo in my declaration. And I was aware of this,

1 but this morning when you asked me about were there
2 any typos or mistakes, I forgot to include this.
3 But I was aware of this reviewing my materials prior
4 to this deposition.

5 So in paragraph 33, I cite Exhibit 1006,
6 instead of it reading 75 through 78, I should have
7 said 75 through 79, because I was referencing custom
8 images from paragraph 79. And I apologize I didn't
9 bring that up earlier this morning. I was aware of
10 that in reviewing prior to this deposition.

11 BY MR. BLYTHE:

12 Q. When it says "custom angles," it says:
13 Have a user interface to allow a user to input an
14 angle and a distance of his or her choice.

15 Do you have an understanding of what it
16 means to have an interface that allows a user to
17 input an angle and a distance?

18 A. I wasn't asked to give an opinion on the
19 interface and how something like this may work.
20 What I understand is that the provisional allows for
21 flexibility and the ability to capture custom
22 images.

1 Q. Is there anywhere else in the Carrier
2 Provisional besides that sentence in paragraph 79
3 that informs your understanding that the Carrier
4 Provisional allows for images from custom angles?

5 A. I'd have to look at the entirety of the
6 Provisional to find out if there are other areas,
7 but that is what I referenced in my declaration in
8 paragraph 35. I'd have to look. I'm not saying
9 there is; I'm not saying there isn't.

10 Q. Fair enough.

11 A. At this -- but at this spot, I'm not
12 sure. But I felt it clear for the point I was
13 making that paragraph 79, the citation, was useful
14 for the point I was making.

15 Q. Is it safe to assume, typos aside, that
16 where you have cited disclosure of the Carrier
17 Provisional in support of your opinions, that that
18 is the part of the Carrier Provisional that has
19 informed the basis for your opinion?

20 A. I want to be able to understand your
21 question correctly, so all typos aside, in this
22 particular citation, that was the paragraph I was

1 referring to when making an opinion that I discussed
2 in paragraph 33. I just did not include -- I cited
3 paragraph 75 through 78. I meant to say 75 through
4 79.

5 Q. Other than in paragraph 79, you have not
6 identified any other places in the Carrier
7 Provisional that teach allowing for images from
8 custom angles, correct?

9 A. I did not cite any other areas, as I
10 mentioned before, and I feel I answered the
11 question. That's not to say there are or aren't. I
12 just felt that this particular paragraph in fact
13 because I was making a point from paragraph -- I was
14 referring back to 78 through -- 75 through 79, it
15 was sufficient citation for the point I was trying
16 to make.

17 Q. Okay. So setting aside whether or not
18 there are in fact other parts of the Carrier
19 Provisional that might discuss this, you're not
20 presently aware of, nor have you cited, any such
21 other places in the Carrier Provisional?

22 A. Correct, I have not cited in my

1 declaration any other parts of the provisional that
2 state giving the user freedom to capture custom
3 images.

4 Q. And that citation -- or, sorry. That
5 sentence in paragraph 79 is the only support for
6 that proposition within paragraphs 75 through 79,
7 right?

8 There's no other place in paragraphs 75
9 through 79 that you are relying on as indicating
10 that the Carrier Provisional allows for images from
11 custom angles, correct?

12 A. I'm just going to review.

13 Q. Please do.

14 A. And read through 79 and refresh my
15 memory.

16 [Document review.]

17 A. And, again, we're focusing on my sentence
18 in paragraph 33 starting with the word "indeed"; is
19 that correct?

20 BY MR. BLYTHE:

21 Q. Specifically, the Carrier provisional
22 allows for images from custom angles.

1 A. Dissecting that sentence and taking just
2 those words, The Carrier Provisional, dot, dot, dot,
3 allows for images from custom angles.

4 That would be taken directly from
5 paragraph 79 of the Carrier Provisional.

6 Q. Okay.

7 A. That portion of that sentence that I
8 wrote.

9 Q. Okay.

10 A. And it's my -- the provisional method
11 offers the flexibility for the user to also do that,
12 use -- or capture custom images. That was my point,
13 the flexibility.

14 And when I say flexibility because when I
15 read paragraph 75 through 79, these are methods that
16 may include -- are certain words, they can include,
17 may include. That's the terminology that's used
18 throughout 75 through 79. So it's about the
19 flexibility that this method allows, and that even
20 includes taking images from custom angles.

21 Q. And you do not have an understanding of
22 what it means to allow a user to input an angle and

1 a distance of his or her choice, correct?

2 A. I was not asked to opine on -- I think
3 before you asked a little more technical question
4 along that line.

5 Q. So is that a, no, you do not presently
6 have an understanding of what it means to allow a
7 user to input an angle and a distance of his or her
8 choice?

9 MR. ARGENTI: Objection, form.

10 A. What I understand is they, with this
11 method, would have -- there is that ability to
12 capture these custom images. I understand that
13 would be images that are possibly outside the ones,
14 the predetermined views. That's what I understand.

15 And it depends on the custom images, the
16 goal of custom -- excuse me. It would depend on
17 what custom images we're talking about.

18 BY MR. BLYTHE:

19 Q. I understand that you have an opinion
20 about custom images. My question is far more
21 specific, and that is as to the sole basis that
22 you've identified in the Carrier Provisional for

1 allowing images from custom angles. And the
2 question is just whether you understand what that
3 sentence means when it says allowing a user to input
4 an angle and a distance of his or her choice?

5 MR. ARGENTI: Objection, form.

6 [Document review.]

7 A. Repeat your question one more time. I
8 apologize.

9 BY MR. BLYTHE:

10 Q. You do not presently have an
11 understanding of what it means to allow a user to
12 input an angle and a distance of his or her choice,
13 correct?

14 MR. ARGENTI: Objection, form.

15 A. I'm really not sure what -- I don't
16 understand your question.

17 The point I was making was the ability to
18 take custom images, whatever those custom images may
19 be, or whatever was chosen to be the teeth selected
20 to be taken or that part of the mouth that they
21 wanted an image of.

22 * * *

1 BY MR. BLYTHE:

2 Q. Did you intend to opine in paragraph 33
3 that the Carrier Provisional allows for images from
4 custom angles?

5 MR. ARGENTI: Objection, form.

6 A. Only in that the end -- the main point
7 being some images of teeth. The main point was not
8 about angles, it was more about custom -- custom
9 images, what photos of what teeth or what part of
10 the mouth you want to take a photo of. It's
11 whatever you determine that custom image to be.

12 BY MR. BLYTHE:

13 Q. In paragraph 79, the second sentence says
14 that giving the user freedom to capture custom
15 images flows from the method having a user interface
16 that allows a user to input an angle and distance of
17 his or her choice, correct?

18 [Document review.]

19 A. That's what that sentence reads, correct.

20 BY MR. BLYTHE:

21 Q. And as of now, you're not able to tell me
22 what it means by: The method can have a user

1 interface to allow a user to input an angle and a
2 distance of his or her choice?

3 A. I wasn't asked to opine on that --

4 MR. ARGENTI: Objection --

5 A. -- So I --

6 BY MR. BLYTHE:

7 Q. I understand you weren't asked to opine
8 on it, I'm asking whether you have an understanding
9 of it.

10 MR. ARGENTI: Objection, form.

11 [Document review.]

12 A. In referencing paragraph 79 in my
13 declaration, it was really just to point out that
14 Carrier method allows you just to take more images
15 of their choice, and they have the freedom to
16 capture custom images. I didn't go into detail on
17 angles or distances. I didn't have an opinion on
18 that.

19 BY MR. BLYTHE:

20 Q. Are you able to answer my question today
21 "yes" or "no" as to whether you have an
22 understanding of what Carrier means in paragraph 79

1 when it says the method can have a user interface to
2 allow a user to input an angle and a distance of his
3 or her choice?

4 MR. ARGENTI: Objection, form.

5 A. I answered the question to the best of my
6 ability.

7 BY MR. BLYTHE:

8 Q. So no, you are not able to answer that
9 question with a "yes" or a "no" as to whether you
10 understand, correct?

11 MR. ARGENTI: Objection, form.

12 A. I'm going to answer your question to say
13 that I understand this paragraph to say exactly what
14 it says. The method, it can allow the user to take
15 more images of their choosing. The method can have
16 a user interface. And this user interface can allow
17 the user to input an angle, a distance of their
18 choice, thus enabling them the freedom to capture
19 custom images.

20 BY MR. BLYTHE:

21 Q. What is an angle and a distance of the
22 user's choice in that context?

1 MR. ARGENTI: Objection, form.

2 A. It's not defined in this paragraph.

3 BY MR. BLYTHE:

4 Q. Do you have an understanding of it,
5 notwithstanding the lack of definition?

6 MR. ARGENTI: Objection, form.

7 A. I do not have an in-depth understanding
8 of the user interface. I do not have an in-depth
9 understanding of how inputting an angle and a
10 distance would work. I wasn't asked to opine on
11 that.

12 BY MR. BLYTHE:

13 Q. Do you have -- what understanding do you
14 have of what it means to allow a user to input an
15 angle and a distance of his or her choice?

16 MR. ARGENTI: Objection, form.

17 A. I don't feel I can answer that question
18 any more than I already have.

19 BY MR. BLYTHE:

20 Q. In paragraph 33, the last sentence
21 begins: A dental professional reading the Carrier
22 Provisional would have appreciated that in many

1 cases it would be useful to obtain fewer than all of
2 the images depicted in the figures.

3 And my question is: Are you aware of
4 anywhere in the Carrier Provisional that indicates
5 that it would be useful to obtain fewer than all of
6 the images depicted in the figures?

7 A. My sentence reads a dental professional
8 who's reading the provisional would have appreciated
9 that they have the option to take as many or as few
10 of the images as they wanted, and to have that
11 freedom.

12 Q. That's an understanding that comes from
13 the dental professional, not from the disclosure of
14 the Carrier Provisional, correct?

15 A. That's what I stated, a dental
16 professional who reads the provisional, in my
17 opinion, would have appreciated -- I believe a
18 dental professional would have appreciated that
19 ability to take as many or as few photos as they
20 wanted.

21 Q. Would you please turn to paragraph 60 of
22 the Carrier Provisional, Exhibit 1006?

1 A. Page 11 of 32, paragraph 60, Carrier
2 Provisional.

3 Q. Correct. Do you see that the first
4 sentence says: The overlay with an outline of teeth
5 in a predetermined view can further provide
6 information such as required visible teeth in the
7 predetermined view?

8 A. I see that sentence.

9 Q. Was it your understanding in forming your
10 opinions regarding Carrier that the outline, or the
11 overlay, shows the required visible teeth in the
12 predetermined view?

13 A. Yes, that's my understanding.

14 Q. If the overlay is matched to the outline
15 of the patient's teeth, then all required teeth are
16 visible in the -- from the predetermined view,
17 correct?

18 MR. ARGENTI: Objection, form.

19 A. Repeat that question.

20 BY MR. BLYTHE:

21 Q. Yeah, I'll try to clean it up as I do so.
22 If the overlay is matched to the outline

1 of the patient's teeth, then all the required teeth
2 are visible in the photograph?

3 MR. ARGENTI: Objection, form.

4 A. Just so I understand your question, if
5 you're seeing the overlay, every single line and
6 outline of that overlay matches every single line
7 and outline of the corresponding teeth, then --

8 You may have to help me here.

9 BY MR. BLYTHE:

10 Q. Let's start there, since you brought up
11 the point about how accurately it's aligned.

12 If the overlay, if every line in the
13 overlay is matched to the corresponding outline of
14 the patient's teeth when taking the photo using the
15 Carrier Provisional overlay, then all of the
16 required teeth are in fact visible in that image,
17 correct?

18 A. That may not be correct. You could have
19 a match between the overlay and the teeth, and for
20 the sake of this example, saying that the required
21 teeth as outlined in the overlay are definitely the
22 teeth that the patient has and it's that match.

1 There could be other things that may -- when you
2 capture the picture, that may not ultimately result
3 in the required teeth being in that image.

4 Q. Could you give me an example of such a
5 thing that may happen such that the required teeth
6 would not be in the image?

7 A. Sure. I believe I discussed this in my
8 declaration. I'm going to find that.

9 [Document review.]

10 A. I'm referring to my declaration, page 17,
11 paragraph 39, where I address this.

12 Here I state: From the point of view of
13 a dental professional, it is easy to appreciate that
14 even if a camera is perfectly aligned to a
15 particular predetermined viewpoint -- that's the
16 overlay -- it may not capture all of the teeth that
17 are intended to be visible from that viewpoint.
18 Notwithstanding perfect alignment, some teeth may be
19 obscured by objects, such as the patient's tongue or
20 lips, or a retractor that has been positioned in an
21 incorrect angle, or hand or finger of the operator
22 mistakenly inserted in front of the camera lens.

1 For example, depending on the tightness (or
2 looseness) of the patient's lips and cheeks when
3 using a cheek retractor and whether or not the
4 patient squeezes the side of the cheek retractors
5 with their lips and cheeks when in place, the actual
6 number of visible teeth within the cheek retractors
7 can vary. Other reasons some "required" teeth may
8 not be visible could be the presence of shadows, for
9 example, if the lighting source was partially
10 obstructed, casting a shadow over one or more teeth
11 or improper focus.

12 BY MR. BLYTHE:

13 Q. Let's start at the beginning of that
14 list.

15 If the patient's tongue were obscuring
16 the teeth, the outline of those teeth would not be
17 matched to the overlay, correct?

18 MR. ARGENTI: Objection, form.

19 A. It could be possible that the tongue
20 partially covers a surface of the tooth, and that
21 would still be -- it was a good alignment of the
22 overlay over the teeth.

1 BY MR. BLYTHE:

2 Q. So let's use a concrete example. Let's
3 refer to Figure 4B of the Carrier provisional.

4 Do you have that figure in front of you?

5 A. I do.

6 Q. If the tongue were to obscure part of any
7 of the teeth visible in this view, the tongue would
8 necessarily have to cover at least one of the edges
9 depicted in this overlay, correct?

10 A. Correct.

11 Q. And in that case, the overlay would not
12 be perfectly matched to the outlines of the teeth,
13 correct?

14 MR. ARGENTI: Objection, form.

15 [Document review.]

16 A. I'm trying to explain in paragraph 39
17 that even if the camera is perfectly aligned --
18 okay? -- it may not capture all of the teeth.
19 Certainly, if a tongue is covering a tooth, which is
20 what I'm describing here, the -- every single line
21 on the outline of that overlay isn't going to match
22 that particular tooth that the tongue is covering.

1 What I'm saying here is not necessarily
2 that. What I'm saying is if the camera is perfectly
3 aligned to a predetermined viewpoint -- okay? --
4 that there could be objects obscuring teeth that are
5 required, or that have been selected to be required
6 in that view.

7 I'm trying to explain that just perfectly
8 aligning a camera, that the required teeth aren't
9 just those teeth that are visible, for instance, if
10 a tongue is covering one of those teeth. That's the
11 point I'm trying to make here.

12 BY MR. BLYTHE:

13 Q. I think I appreciate the difference
14 between what you've described in paragraph 39 and
15 the question I was asking, so I'll just go back to
16 my original question, which was if the overlays
17 are -- if the outlines in the overlay are all
18 perfectly matched to the edges of a patient's teeth
19 when the photo is taken, then all of the required
20 teeth are in fact visible in that instance?

21 MR. ARGENTI: Objection, form.

22 A. Can you repeat that one more time?

1 BY MR. BLYTHE:

2 Q. Sure. To clarify, my question is not
3 about whether the camera is aligned. My question is
4 if the outline in the overlay is matched to the
5 outlines of the patient's teeth at the time the
6 picture is taken, then all required teeth are in
7 fact visible in the image, correct?

8 MR. ARGENTI: Objection, form.

9 A. Yes, but I'm trying to be careful here
10 because I disagreed with Dr. Kusnoto's opinion that
11 the required teeth are whatever teeth end up being
12 visible when an image is taken with the right camera
13 position.

14 BY MR. BLYTHE:

15 Q. Right. And my question is not about just
16 the camera being in the right position, but the
17 camera being in the right position because the
18 outlines in the overlay are in fact matched to the
19 outlines in the teeth.

20 MR. ARGENTI: Objection, form.

21 A. And I guess what I'm saying is, if we're
22 talking about capturing required teeth in an image,

1 that in this part of my declaration, I'm trying to
2 distinguish Dr. Kusnoto's statements when being that
3 the required teeth are the teeth -- are the teeth
4 that should be visible in the predetermined view,
5 and I agree with that, as opposed to required teeth
6 are just whatever teeth end up being visible when
7 the image is taken, even if you have the right
8 camera position.

9 BY MR. BLYTHE:

10 Q. I understand, and I wasn't necessarily
11 intending to limit my question to paragraph 39 of
12 your declaration. I'm asking a broader question,
13 actually more specific, about the required teeth,
14 which is that if the outlines in the overlay are in
15 fact aligned with the outlines of the patient's
16 teeth at the time the image is captured, then all
17 required teeth are visible in the photo in that
18 instance?

19 MR. ARGENTI: Objection, form.

20 A. The overlay is telling us which teeth
21 should be required; and, therefore, if the overlay
22 is a perfect match with those -- the teeth --

1 I -- I apologize. Can you repeat your
2 question? This is...

3 BY MR. BLYTHE:

4 Q. If the outline of the overlay is in fact
5 in alignment with the outlines of the patient's
6 teeth, the required teeth are visible in the photo
7 in that instance, correct?

8 MR. ARGENTI: Objection, form.

9 A. I would say if the outline of the overlay
10 is a perfect match to the teeth, then those -- to
11 the teeth, then the required teeth are visible in
12 that view.

13 BY MR. BLYTHE:

14 Q. Conversely, if the -- some of the teeth
15 are obscured by a tongue or hand or finger or lips
16 or cheeks or shadows or improper focus, the outlines
17 in the overlay would not be able to be perfectly
18 matched to the outlines of the patient's teeth in
19 the photograph, correct?

20 MR. ARGENTI: Objection, form.

21 A. You could still get alignment of the
22 teeth in that predetermined view for the most part.

1 Even if there is something blocking or obstructing
2 maybe a portion of the tooth, you could still get an
3 acceptable alignment. It depends on how much
4 something is obstructing your view.

5 BY MR. BLYTHE:

6 Q. So you --

7 A. -- some of the times, all of the teeth
8 you're not going to get a picture at all of teeth.

9 Q. Yeah, my question wasn't to dispute that
10 alignment is possible, just that the outlines in the
11 overlay would not match to the outlines of the teeth
12 because some of the tooth outlines would not be
13 visible in that image, right?

14 MR. ARGENTI: Objection, form.

15 A. In my opinion, it depends on how much the
16 required teeth are obstructed, according to my
17 examples. But it could be, you know, a little bit,
18 but it could still, even a portion of a tooth, a
19 tiny portion of a tooth that is obstructed, you may
20 not get that part of the tooth that you want to get
21 to analyze; but you can still get a very good
22 alignment of your overlay with the majority of the

1 teeth.

2 BY MR. BLYTHE:

3 Q. So you mentioned a very good alignment
4 over the overlay. Are you referring to allowing for
5 approximate alignment of the overlay with the
6 outlines of the teeth?

7 A. Again, it depends on the obstruction.
8 You could get a nearly perfect alignment depending
9 on the obstruction.

10 Q. Right. So not -- the question is not
11 about alignment, which I take --

12 When you say "alignment," you're
13 referring to the relationship between the camera and
14 the patient's teeth regardless of intervening
15 obstruction. Am I understanding that correctly?

16 A. As I explained in paragraph 39, it's the
17 alignment of the camera to a particular
18 predetermined viewpoint that we're trying to
19 capture.

20 Q. Right. So even if the camera was
21 perfectly aligned to that viewpoint, there could be
22 an obstruction. Obstructions that obscure the tooth

1 outlines prevent a match between the outline of the
2 overlay and the outline of teeth wherever that
3 outline of the teeth is obscured, right?

4 MR. ARGENTI: Objection, form.

5 [Document review.]

6 A. To be sure I answer your question to the
7 best of my ability, can you repeat that one more
8 time?

9 BY MR. BLYTHE:

10 Q. Even if the camera was perfectly aligned
11 to that viewpoint, there could be an obstruction.
12 And obstructions that obscure the tooth outlines
13 prevent a match between the outline of the overlay
14 and the outline of the teeth wherever the outline of
15 the teeth is obscured, correct?

16 MR. ARGENTI: Object to the form.

17 A. When I was describing these
18 obstructions --

19 I -- I don't know if I can answer your
20 question, because I'm not sure I understand it in
21 the context of paragraph 39 of my declaration.

22 When I cited these possible obstructions,

1 the reason I was citing these was more to describe
2 that the teeth that are intended to be visible may
3 not necessarily be the teeth that are actually
4 visible. And that there are image recognition
5 algorithms, I understand, that can be used to make
6 sure that the teeth that are intended to be visible
7 are the teeth that are actually visible in the
8 image.

9 BY MR. BLYTHE:

10 Q. Do you have an opinion as to whether
11 Carrier's overlays are in fact an image recognition
12 algorithm that determines whether all the required
13 teeth are present in the image?

14 MR. ARGENTI: Objection.

15 Withdrawn.

16 A. I have an understanding that Carrier
17 teaches their image recognition algorithms that can
18 be used in his method to make sure that the teeth
19 that are required -- intended to be visible that are
20 required are the teeth that are actually visible in
21 the image.

22 * * *

1 BY MR. BLYTHE:

2 Q. Do you have an understanding whether it
3 would be redundant to run an additional such
4 algorithm if the camera has already been aligned by
5 aligning the outlines of the overlay with the
6 outlines of the teeth?

7 A. I don't have an opinion on that.

8 Q. Are you aware of any other techniques for
9 aligning the images in Carrier other than using an
10 overlay reflecting the outlines of the teeth
11 intended to be captured in the view?

12 A. Are you asking me algorithms -- about
13 algorithms here --

14 Q. No, sorry --

15 A. -- or --

16 Q. Sorry.

17 A. -- imaging or computer imaging methods in
18 Carrier?

19 Q. No, just a more general question.

20 We've been discussing Carrier's
21 disclosure. I believe we have cited to the
22 abstract of using an overlay and moving the overlay

1 to approximately match the patient's teeth in a view
2 of the patient's teeth.

3 And my question is: In general, are you
4 aware of any other disclosure in Carrier in which
5 Carrier discusses a method for aligning the photos
6 that are to be taken from these predetermined views?

7 A. If I'm understanding your question
8 correctly, there's no optional features such as the
9 auditory or tactile indicators that can assist in
10 moving the mobile phone and getting the overlays --
11 that guide the user in taking these photos.

12 Q. If you turn to paragraph 63 of Carrier
13 that we were discussing earlier, where it refers to
14 visual and/or audible and/or tactile, do you see
15 that the context in which the audible or tactile
16 indicator is used is in aligning the teeth with the
17 overlay?

18 A. Paragraph 63 --

19 Q. Second sentence.

20 A. For example? That sentence?

21 Q. Yes.

22 [Document review.]

1 A. Yes, I read that sentence.

2 BY MR. BLYTHE:

3 Q. And do you agree that that sentence is
4 indicating that the audible or tactile indicia are
5 associated with use of the overlay for alignment?

6 A. I understand from this sentence that
7 these visual or audible or tactile indicators can
8 be -- may be used as a part of the apparatuses and
9 part of the methods being taught in Carrier, and
10 they may be used to indicate if the teeth are
11 aligned in the frame of the overlay, just as it's
12 stated.

13 Q. Are you reading the word "may" in that
14 sentence to indicate that the audible or tactile
15 feedback can be used outside the context of aligning
16 the teeth with the overlay?

17 A. I'm reading it and understand it to mean
18 it's an optional feature.

19 Q. Right. And when it is used, the sentence
20 in Carrier is indicating that audible or tactile
21 indicators indicate alignment with the overlay,
22 correct?

1 A. They indicate if the teeth are aligned in
2 the frame with the overlay.

3 Q. Okay. Are you aware of any other
4 disclosures in Carrier that address methods or
5 techniques or apparatuses for aligning a camera to
6 capture the predetermined view other than through
7 the use of overlays?

8 A. Just other than what I mentioned before,
9 that the user has the flexibility to take custom
10 images.

11 Q. Does the Carrier Provisional indicate
12 that those custom photos would be aligned using a
13 technique other than overlays?

14 A. It did -- I wasn't asked to give my
15 opinion of that, and thus my understanding is really
16 that there is that flexibility with this method,
17 that a user can take custom images or they can take
18 predetermined images that involve overlays.

19 MR. BLYTHE: Okay. I think we've
20 been going over an hour. Why don't we take a
21 five-minute break.

22 MR. ARGENTI: Sounds good.

1 (Recess taken, 2:25 p.m. to
2 2:35 p.m. PDT)

3 BY MR. BLYTHE:

4 Q. Would you please turn to page 19 of your
5 declaration, Exhibit 1035.

6 A. I'm on page 19, paragraph 41 and 42?

7 Q. Yes. Starting in paragraph 41, you
8 address registration marks. Do you recall?

9 A. Yes.

10 Q. What's your understanding of a
11 registration mark in the context of Salah?

12 A. That registration marks were placed on
13 cheek retractors to help the user capture a photo
14 and get the right -- correct alignment.

15 Q. Do you have an understanding as to any
16 other ways that the registration marks are used in
17 the process disclosed in Salah?

18 MR. ARGENTI: Objection, form.

19 A. Not off the top of my head.

20 BY MR. BLYTHE:

21 Q. Starting in paragraph 42, you discuss
22 Carrier's teaching regarding patient-specific

1 overlays. And my question is: Do you have an
2 opinion regarding whether registration marks are
3 advantageous compared to generic overlays rather
4 than patient-specific overlays?

5 A. In general, my opinion is that overlays
6 would be a better method of alignment than
7 registration marks on cheek retractors, even if
8 using generic overlays. But --

9 Q. And why would that be --

10 Sorry. Didn't mean to interrupt.

11 A. Because you are doing an alignment of
12 the -- with the actual object that you're intending
13 to capture a photo of. And the user has the option
14 of selecting whether it's a generic overlay or a
15 categorical type overlay or even more specific
16 precise overlays such as patient specific or
17 treatment specific.

18 So you have that option; but even with a
19 generic overlay, if that was chosen, depending on
20 the situation, I still feel that would be superior.

21 Q. A generic overlay would be more than
22 1 millimeter difference than a patient's teeth --

1 Let me rephrase that.

2 Even if an over -- generic overlay is as
3 well aligned with a patient's teeth as possible, the
4 patient's teeth may in fact be more than a
5 millimeter off from the generic overlays, correct?

6 MR. ARGENTI: Objection, form.

7 A. There is that possibility that the
8 overlay compared to the actual teeth, there would be
9 some differences. But when you're looking at the
10 cheek retractor method, I feel that there could be
11 discrepancies, also, or even more than a millimeter,
12 as I described in my declaration.

13 BY MR. BLYTHE:

14 Q. And on that subject, in paragraph 44, you
15 refer to patients inserting a retractor at an angle.
16 Would you please clarify what you mean by at an
17 angle.

18 A. When placing a cheek retractor like the
19 type discussed in Salah, it's made out of plastic,
20 and you have -- and it is flexible. It needs to be
21 flexible because you have to be able to insert it
22 into a patient's mouth. And upon inserting it,

1 you -- it's just not a straight, perpendicular
2 insertion into a patient's mouth. You have to
3 deform that plastic. You have to sometimes bend it
4 at an angle, get it to fit one side of the mouth.
5 The -- for instance, the right lips and then get it
6 to fit on the left lips.

7 So you're deforming this plastic
8 retractor as you're putting it into the patient's
9 mouth, and it's quite often not -- it's not
10 comfortable for the patient, sometimes. Other
11 patients adapt to it just fine.

12 But you do have to somewhat deform it.
13 It's not a rigid piece of plastic, and rightfully
14 so, it shouldn't be. Some patients, the opening of
15 their mouth is smaller than others. We have to
16 deform it, angle it, insert it on one side, get it
17 on the other side, and then lip -- make sure the
18 lips get around there.

19 Q. So when you say that it will depend on
20 the way it's inserted -- or, sorry, depend on the
21 way it's worn, if a patient inserts the retractor at
22 an angle, do you mean that the retractor may be off

1 center of the teeth to the left or to the right?

2 A. I see you referring to paragraph 44?

3 Q. Yes.

4 A. The fourth line?

5 Q. It would be just below the middle of that
6 paragraph in the sentence beginning, "Further, the
7 position of the registration marks."

8 A. The sentence, "as a result"?

9 Q. Just the one after that.

10 A. "Further"?

11 Q. Correct?

12 A. Yes, I see that sentence.

13 Q. And my question is, when you say that:
14 If the patient inserts the retractor at an angle,
15 the registration marks at the edges of the retractor
16 will move significantly relative to the patient's
17 teeth, do you mean that the registration marks at
18 the edges of the retractor will move to the left or
19 to the right compared to the center line of the
20 patient's teeth?

21 A. What I'm meaning in that sentence is
22 after the patient -- or the patient will insert the

1 cheek retractors into their mouth, and they will --
2 depending on how they place it in their mouth, it --
3 they could place it at an angle, and, therefore, the
4 registrations marks on that retractor can be
5 different in relation to the teeth depending on how
6 the patient's place that retractor in the mouth. If
7 they place it at an angle, or such as it's maybe
8 tipped a little bit higher to one side than the
9 other, or if it's perfectly level.

10 So the registration marks will move
11 depending on how it's placed, the angles that it's
12 placed with the lips, and that will -- those marks
13 will move in relation to the teeth.

14 Q. Since this deposition is not being video
15 recorded today. I wanted to make sure I have, for
16 the record, an understanding of the gesture you were
17 making, so please correct me if I'm wrong or help me
18 articulate this.

19 When you say maybe higher on one side or
20 the other, you're saying if you have registration
21 marks that, let's say one in each corner forming
22 some kind of rectangular shape, if you were to

1 rotate it such that one corner goes up higher than
2 the other, so that you have a rectangular shape
3 that's tilted with respect to a face-on picture of
4 the patient, that's what you mean by at an angle?

5 A. Yes.

6 Q. Okay.

7 A. For the most part, yes.

8 And putting these cheek retractors in,
9 they -- once you place them in the mouth, they need
10 adjusting. And in fact the patient could even place
11 it -- there's many ways they could place it
12 imprecisely. It would still fit, but they could
13 place it at certain angles, up or down, the right or
14 left inner corners of their mouth, that would then
15 throw or create a different relation between where
16 the four registration marks are in relation to the
17 teeth.

18 Does that verbal explanation make sense?

19 Q. Yes.

20 In the last sentence of paragraph 44
21 before your section titled Concluding Statements,
22 you say: Where the purpose is to produce images of

1 a patient's teeth, the teeth themselves would be a
2 better reference for alignment than registration
3 marks, which can move substantially relative to the
4 teeth to be imaged.

5 Do you see that?

6 A. Yes, I see that.

7 Q. Is it your understanding that the purpose
8 of the use of registration marks in Salah is to
9 produce images of a patient's teeth?

10 [Document review.]

11 A. Repeat your question, please.

12 BY MR. BLYTHE:

13 Q. Sure. Is it your understanding that the
14 purpose of using registration marks in Salah is to
15 produce images of a patient's teeth?

16 A. It's my understanding that the
17 registration marks provide a reference for alignment
18 of the camera in order to capture images of the
19 teeth.

20 Q. Do you agree that the images captured in
21 Carrier are used for a different purpose than the
22 images captured in Salah?

1 MR. ARGENTI: Objection, form, scope.

2 A. Both are to gain images of teeth, and
3 that's what they have in common.

4 BY MR. BLYTHE:

5 Q. Do you have an understanding of how the
6 images that are captured in Salah are subsequently
7 used in the methods disclosed in Salah?

8 [Document review.]

9 A. Will you repeat your question?

10 BY MR. BLYTHE:

11 Q. Yes. Do you have an understanding of how
12 the images that are captured in Salah are
13 subsequently used in the methods disclosed in Salah?

14 [Document review.]

15 A. The images in Salah are used for
16 monitoring the position of patient's teeth.

17 BY MR. BLYTHE:

18 Q. The images in Salah aren't used to update
19 a 3D model of the patient's teeth, correct?

20 MR. ARGENTI: Objection, scope.

21 A. I would need some time to go back and
22 review Salah's -- to review Salah in order to give

1 you an accurate answer. This particular question
2 you're asking me is not something that I was asked
3 to opine on, and neither is it something that I
4 spoke about in my declaration.

5 Is there somewhere in my declaration that
6 you're referring to?

7 BY MR. BLYTHE:

8 Q. No, I'm not aware of a citation in your
9 declaration. I was just asking about your
10 understanding, but I believe you've answered my
11 question.

12 Are you -- I'll ask you this way: Would
13 you agree that you are not familiar with the
14 technical aspects of how an image recognition
15 algorithm would detect a registration mark?

16 MR. ARGENTI: Objection, form.

17 A. I agree that's not my expertise.

18 BY MR. BLYTHE:

19 Q. Do you have any understanding of whether
20 a registration mark would be easier to detect in an
21 image than the outlines of teeth?

22 MR. ARGENTI: Objection, form.

1 A. When asked about registration marks on
2 cheek retractors, I gave an opinion as a dental
3 professional having used cheek retractors for over
4 30 years, and even of the kind that are described in
5 the materials cited. I've worked with these, I've
6 taken photos using these cheek retractors, and I
7 find -- I'm giving my opinion as a dental
8 professional, what I know.

9 And I'm not claiming to be a computer
10 scientist and to understand algorithms, but it's
11 just my basic opinion, as I stated in my
12 declaration, that having used these plastic cheek
13 retractors and having placed them in patient's
14 mouths, that they do deform and they can be placed
15 incorrectly; and, therefore, it's my opinion that
16 putting registration marks on them, that -- that
17 would not be -- using those registration marks on
18 cheek retractors that could deform or be placed
19 incorrectly in relation to the teeth would be a less
20 reliable method than using the method that was
21 taught in Carrier where you're using overlays
22 corresponding to the teeth. That is corresponding

1 to actually what you want to get an image of. And I
2 think a dental profession -- dental professional,
3 excuse me, would understand and agree the same,
4 especially, you know, in 2017.

5 I do not have an opinion about algorithms
6 or anything more technical. It's just this is my
7 experience having used plastic cheek retractors,
8 having taken thousands of images using cheek
9 retractors and taking images of specific teeth and
10 trying to get those images of those specific teeth.

11 BY MR. BLYTHE:

12 Q. So it sounds like this is not in dispute,
13 but to confirm, you do not have an opinion regarding
14 whether an algorithm would have an easier time
15 detecting a green circle than a tooth outline,
16 correct?

17 MR. ARGENTI: Objection, form.

18 A. I -- I don't have an opinion if an
19 algorithm could -- I forget how you just stated it.

20 BY MR. BLYTHE:

21 Q. Whether an algorithm would have an easier
22 time detecting a green circle than a tooth outline

1 is what I had asked.

2 A. No, I don't have an opinion on that. I
3 wasn't asked to opine on the algorithms and how they
4 detect the overlay as opposed to registration marks
5 on a cheek retractor.

6 Q. That's totally fine.

7 Would you turn back to Exhibit 1036?
8 It's a copy of your CV.

9 A. Yes. I'm there.

10 Q. Thank you. Bear with me one moment.
11 Mine has been closed.

12 There it is.

13 On pages 2 to 3 of your CV, or the
14 section, Expert Witness - Patent Litigation
15 Experience.

16 A. Yes.

17 Q. And it looks there are approximately
18 one -- seven different matters including the
19 district court litigation between Align and Dental
20 Monitoring in which you've served as an expert
21 witness in patent litigation; is that correct?

22 A. That's correct.

1 Q. And that spans a time period from
2 July 2006 to present?

3 A. Correct.

4 Q. And in each one of those litigations, you
5 served as an expert witness for Align Technology,
6 correct?

7 A. Correct.

8 Q. Have you ever served as an expert witness
9 for a party other than Align Technology?

10 A. I have been approached several times by
11 others, asking for my expert witness services. I've
12 declined them whether it was because of a time
13 constraint, because I do have a full-time job. This
14 is just something that I do on the side.

15 Whether it was a time constraint or I
16 just was not comfortable, I didn't feel like I had
17 the expertise to be able to make opinions about
18 their cases.

19 Q. Other than serving as an expert witness
20 in this litigation, do you have any ongoing
21 relationship with Align Technology?

22 A. No.

1 Q. In your present work, do you prescribe
2 Invisalign for patients?

3 A. Yes, I do. It's not the bulk of my
4 patient treatment. I treat more patients with
5 braces; but I do treat patients with Invisalign
6 also, although it's a lesser number of patients.

7 Q. During any of the breaks in the
8 deposition today, have you spoken with counsel
9 regarding the substance of your testimony in this
10 deposition?

11 A. No.

12 Q. During the deposition today, have you
13 made any marks or annotations or drawings on your
14 report or any of the other exhibits we've discussed?

15 A. No.

16 MR. BLYTHE: Let's take a brief break
17 and maybe wrap this up. Let's come back in
18 ten minutes.

19 MR. ARGENTI: Okay.

20 (Recess taken, 3:03 p.m. to
21 3:14 p.m. PDT)

22 * * *

1 MR. BLYTHE: So, Dr. Valley, I have
2 no further questions at this time on cross,
3 subject to counsel's redirect, so thank you
4 for your time.

5 MR. ARGENTI: No questions from me.

6 THE WITNESS: Thank you.

7 MR. BLYTHE: Okay.

8 Okay, off the record.

9 (Time noted: 3:14 p.m. PDT)

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1 C E R T I F I C A T E

2 I, DEBRA A. DIBBLE, RDR, CRR, CRC, Notary
3 Public, do hereby certify:

4 That DR. MAUREEN VALLEY, D.M.D., M.P.H., M.S.,
5 the witness whose deposition is hereinbefore set
6 forth, was duly sworn by me and that such deposition
7 is a true record of the testimony given by such
8 witness;

9 That pursuant to FRCP Rule 30, signature of
10 the witness was requested by the witness or other
11 party before the conclusion of the deposition;

12 I further certify that I am not related to any
13 of the parties to this action by blood or marriage,
14 and that I am in no way interested in the outcome of
15 this matter.

16 IN WITNESS WHEREOF, I have hereunto set my
17 hand on 19th day of September, 2024.

18

19

20 Debra A. Dibble
21 Fellow of the Academy of Professional Reporters
22 Registered Diplomate Reporter
Certified Realtime Reporter
Notary Public 11/17/2027
CA 14345

1 I HEREBY CERTIFY that I have read
2 this transcript of my deposition, and that
3 this transcript accurately states the testimony
4 given by me, with the changes or corrections, if
5 any, as noted.

6

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10 X _____

11 DR. MAUREEN VALLEY, D.M.D., M.P.H., M.S.

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1 ERRATA SHEET FOR THE TRANSCRIPT OF:

2 CASE NAME: Align Technologies v Dental Monitoring

3 DEP DATE: September 16, 2024

4 DEPONENT: DR. MAUREEN VALLEY, D.M.D., M.P.H., M.S.

5 Pg. Ln. Now Reads Should Read Reason

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22 DR. MAUREEN VALLEY, D.M.D., M.P.H., M.S.

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