

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

STRAUMANN USA, LLC,

Petitioner,

Case No.

IPR2025-00956

vs.

Case No.

SMART DENTURE CONVERSIONS,
LLC,

PGR2025-00054

Patent Owner.

DEPOSITION OF KARL LEINSING

(Taken by Petitioner)

Raleigh, North Carolina

May 20, 2026

Reported by Andrea L. Kingsley, RPR

A P P E A R A N C E S

ON BEHALF OF THE PETITIONER:

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DEPOSITION OF KARL LEINSING, a
witness called on behalf of the Petitioner
pursuant to the Federal Rules of Civil
Procedure, before Andrea L. Kingsley, Notary
Public, in and for the State of North
Carolina, at Smith Anderson, 150 Fayetteville
Street, Raleigh, North Carolina, on Wednesday,
May 20, 2026, commencing at 9:00 a.m.

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(None marked)

1 P R O C E E D I N G S

2 KARL LEINSING, being duly sworn, was
3 examined and testified as follows:

4 EXAMINATION BY

5 MR. REITBOECK:

6 Q. Good morning, Mr. Leinsing.

7 A. Good morning.

8 Q. It's nice to meet you. My name is Georg
9 Reitboeck. I'm from the law firm Haug Partners.
10 I'm here for petitioner. As you know, you've given
11 expert declarations in these two proceedings, IPR
12 2025956 and PGR 202554.

13 Why don't we start by you telling us
14 what your understanding of the inventions is.

15 A. So the inventions are to a method and
16 apparatus for dental implants.

17 THE WITNESS: Can I have the
18 patents please?

19 Q. At this point I would like you to
20 describe your understanding of the invention.

21 MR. LEWIS: Counsel, the expert has
22 asked for a copy of the patents. Do you
23 object to him having a copy of the patents?

24 Q. Are you able to give us your
25 understanding of the inventions without looking at

1 the patent?

2 MR. LEWIS: Objection to form.

3 A. I think the patents speak for
4 themselves. The patents talk about a method and an
5 apparatus for doing a dental implant or prostheses
6 procedure and devices used for the same.

7 Q. What are the benefits of the invention?

8 MR. LEWIS: Objection to the form.

9 A. Can I take a break?

10 Q. You want to take a break? We just
11 started, Mr. Leinsing.

12 A. Yes. I'd like to have copies of the
13 patents in front of me if you're going to ask me
14 about the patents.

15 Q. I'm certainly going to give you a copy
16 of the patents. At this point can you tell me
17 without studying the patents what the benefits of
18 the invention are?

19 MR. LEWIS: Objection to the form.
20 Counsel, this is not a memory test.

21 MR. REITBOECK: Counsel, no
22 speaking objection please.

23 MR. LEWIS: The witness has asked
24 for a copy of the patents.

25 A. Can you repeat your question?

1 Q. What is your understanding of the
2 benefits of the invention?

3 MR. LEWIS: Objection to the form.

4 A. The benefits is outlined in the patent
5 itself. It talks about the background and then
6 talks a summary of the invention which basically in
7 summary -- again, the patent speaks for itself, but
8 talks about having a temporary screw that meets the
9 claim limitations of the patent such that a
10 temporary screw could be removed in an axial
11 direction or as outlined by the claims of the
12 patent such that it facilitates creating a
13 prostheses and implant or dental implant for a
14 patient.

15 Can I take a break please?

16 Q. Okay.

17 (Recess taken.)

18 BY MR. REITBOECK:

19 Q. We're coming back from the break,
20 Mr. Leinsing. I understand you have brought with
21 you copies of the two patents at issue?

22 A. That's correct.

23 Q. Did you discuss your testimony now with
24 counsel?

25 A. No.

1 Q. Did you ask him for copies of the
2 patent?

3 A. Yes.

4 Q. You have here what we generally refer to
5 as the '992 patent; right?

6 A. Correct.

7 Q. You have a copy of the '781 patent;
8 correct?

9 A. Correct.

10 Q. Those are the two patents at issue?

11 A. Correct.

12 Q. The two patents that you have given
13 expert declarations about; yes?

14 A. That's correct. And it's my
15 understanding that our discussions today are to
16 cover both the IPR and the PGR.

17 Q. That's correct, yes.

18 A. Okay.

19 Q. So having copies of the patents in front
20 of you now, can you now tell us what the invention
21 to your understanding is?

22 MR. LEWIS: Objection to the form.

23 Q. While you're looking at that,
24 Mr. Leinsing, let me say that the '992 patent is
25 Exhibit 1001 in the IPR and '781 patent is Exhibit

1 1001 in the PGR.

2 A. I would refer to -- I think the patents
3 speak for themselves in terms of the specification,
4 the figures and the claims. In general, I would
5 refer to the abstract which is also my
6 understanding that it's a temporary alignment
7 system for holding a dental coping to an implant
8 abutment that has the same threads as the abutment
9 that's used with a definitive screw and it has a
10 temporary fastener that can be removed in an axial
11 direction that does not match the threads of the
12 definitive screw and other requirements as defined
13 by the claims.

14 Q. Okay. Having the patents now in front
15 of you, can you tell us what your understanding of
16 the benefits of this invention are?

17 MR. LEWIS: Objection to the form.

18 A. It has some unique benefits. The
19 patents, again, speak for themselves. I will
20 mention just a few. One of them in particular that
21 I thought was unique and novel was to actually have
22 a screw that did not match the threads of the
23 female thread that you would actually be able to
24 pull out in an axial direction to facilitate
25 holding a dental coping to an implant abutment.

1 Q. That's the mismatch concept that you
2 refer to in your declarations; is that right?

3 MR. LEWIS: Objection to the form.

4 A. I think the word that's used more
5 appropriately in the claims is the -- is that the
6 threads are shaped differently from the pattern of
7 the threads of the definitive screw which would be
8 different from the threads of the abutment.

9 Q. That's one of the technical features of
10 the invention.

11 My question, Mr. Leinsing, is what are
12 the benefits of the invention? Why use this set up,
13 this technical set up?

14 A. It allows for the temporary screw to be
15 able to be removed in an axial direction such that
16 it's comfortable to the patient and is quicker and
17 easier for the procedure.

18 Q. Okay. You mention that it is
19 comfortable for the patient. What do you mean by
20 that?

21 A. Well, again, the patent discusses this,
22 where there's benefits of this invention, namely,
23 the holes would be smaller, the procedure would be
24 quicker which is more comfortable to the patient
25 because it takes less time to do the procedure.

1 Q. Why does this system as described in the
2 patent make it quicker and more comfortable for the
3 patient? What's the reason?

4 MR. LEWIS: Objection to the form.

5 A. Well, if the temporary screw required
6 rotational torque to remove each of the screws it
7 takes longer to do that procedure. And then
8 compared to snap-type features as the patent talks
9 about, those types of features typically require
10 bigger holes within the prostheses which are not
11 advantageous to the patient because of the larger
12 holes that would be in the artificial prostheses.

13 Q. Why don't we look at.

14 Figures 4 through 6 of the '992 patent
15 and the '781 patent. Maybe you can explain to us
16 how the invention works on the basis of those
17 figures?

18 A. You said Figures 4 through 6?

19 Q. Yes. You can start at 4 or pick
20 whatever figure of those three you want. 4 has more
21 numbers so maybe we'll start there.

22 What do we see here?

23 A. I will start with Figure 4.

24 Q. Okay.

25 A. Looking at Figure 4 there's an abutment

1 8 and then there's a coping 9 that are secured in
2 place with a temporary screw or a temporary
3 attachment post 10. The patent contemplates
4 different temporary attachment posts for 10 that
5 can either be integral or separate from a cap 11
6 which then secures coping 9 to abutment 8. Then
7 prostheses 3 looking at Figure 5 is bonded to the
8 top of the assembly that we discussed in Figure 4
9 which has been implanted into the jaw 22 of the
10 patient.

11 Once the bonding cures then the coping
12 and the prosthesis may be removed in an axial
13 direction either by releasing between the temporary
14 attachment post 10 and a cap 11 or the temporary
15 attachment post 10 has other options as
16 contemplated by the patent and that is unique to
17 this invention where the attachment post may be
18 removed right immediately directly from the
19 abutment 8 in an axial direction.

20 And then if you go to Figure 6, you can
21 see where the prosthesis including the coping and
22 bonding and the cap have been removed from the
23 temporary attachment post 10 in an axial direction
24 although the patent contemplates other options
25 where 10 can be removed with the coping and the

1 prosthetic and discloses other type arrangements.

2 Q. Right, and we'll get there to the other
3 embodiment. What we see in Figures 5 and 6 is the
4 embodiment with the separable cap; yes?

5 A. I'm sorry, I didn't hear --

6 Q. What we see in Figures 5 and 6 is the
7 embodiment of the separable cap; correct?

8 MR. LEWIS: Objection to the form.

9 A. It depicts here the separable cap 11
10 from the temporary attachment post 10, but as I
11 said, there's other arrangements between 10 and 11
12 and 10 and the abutment that are contemplated or
13 described.

14 Q. Okay. Now the coping, 9, with this
15 system, am I right that this is a pick-up coping as
16 opposed to a transfer coping?

17 A. I don't understand your question.

18 Q. Do you know what a pick-up coping is?

19 A. Yeah. Are you talking about Figure 9?

20 Q. No. I'm talking about Figures 5 and 6.

21 A. Oh. Okay.

22 Q. The coping that is numbered 9, let's
23 start there, the coping is number 9; right?

24 A. Correct.

25 Q. And I take it you know what a pick-up

1 coping is?

2 A. I'm not sure what you mean by pick-up
3 coping. Are you talking about the coping that
4 matches the abutment?

5 Q. Do you know what a transfer coping is?

6 A. Is there a part in the patent you're
7 referring to?

8 Q. You tell me. You're the expert,
9 Mr. Leinsing.

10 A. I'm trying to understand your question.
11 So if you're referring to a part of the patent.

12 Q. I'm asking you whether you know what a
13 pick-up coping is and what a transfer coping is.

14 A. My understanding of a pick-up coping and
15 transfer coping is one that's going to pick-up the
16 locations of where the abutment is within the jaw
17 and then it transfers those locations to the
18 prosthesis. But I'm not sure exactly what you're
19 talking about in your question.

20 Q. Maybe I can direct your attention to
21 column 2, first pull paragraph. Have a look at that
22 and then we'll revisit the question.

23 Have you had a chance to read the first
24 paragraph of column 2?

25 A. Yes.

1 Q. Can you tell us now what a pick-up
2 coping and what a transfer coping is?

3 A. I said it in my previous answer.
4 They're used for -- they're different methods of
5 aligning to the abutment. The pick-up -- to be
6 more specific, the pick-up method is where we were
7 first talking about the coping is attached to the
8 abutment at first and then the prosthesis is cured
9 on top of that for better alignment than a transfer
10 coping.

11 Q. What is a transfer coping?

12 A. It transfers where you -- you determine
13 the position of the coping through an impression
14 and then that coping is then inserted into that
15 impression instead of directly.

16 Q. Instead of the coping remaining in the
17 impression; is that what you mean?

18 A. Yes.

19 Q. The system of the patents enables the
20 use of which type of coping?

21 A. It would be the pick-up coping.

22 Q. Can you tell us what open tray and
23 closed tray impression protocols are?

24 MR. LEWIS: Objection to the form.

25 Q. Tell us what you're reading,

1 Mr. Leinsing.

2 A. I'm reading the second paragraph in
3 column 2.

4 What was your question again?

5 Q. Can you explain to us what open tray and
6 closed tray impression protocols are?

7 A. So it's my understanding that the open
8 tray versus the closed tray gives you access to the
9 back side -- or the top side of the coping. Some
10 procedures require that access where some do not
11 depending on the method.

12 Q. Which of the two does the invention use?

13 MR. LEWIS: Objection to the form.

14 A. It's my understanding that the invention
15 could be used with either. It's based on the
16 claims. I think it's silent as to what system it
17 could be used with.

18 Q. Is there any advantage of using one of
19 the two impression protocols with this system over
20 the other?

21 A. It's my understanding that the closed
22 one will be more accurate.

23 Q. Why is that?

24 A. There's more structure to it is my
25 understanding. More support. That's probably a

1 better question for an orthopedic surgeon.

2 Q. So you're saying you could use this
3 system in the patents with both open tray and closed
4 tray impression protocols, from your point of view
5 you would prefer to use the closed tray impression
6 protocol; is that correct?

7 MR. LEWIS: Objection to the form.

8 A. From an engineering point of view, I
9 would think the closed tray would be better, more
10 accurate, more support, as the patent talks about,
11 but that's, again, a preference thing and probably
12 a better question for an orthopedic surgeon as to
13 which they would prefer. It's my understanding the
14 invention would work with both.

15 Q. You previously talked about the
16 connection of the temporary screw to the abutment.
17 One thing I wanted to clear up if you look at Figure
18 5.

19 You said the abutment would be installed
20 in the jaw, and so we're on the same page,
21 Mr. Leinsing, the abutment is installed in an
22 implant, right, which is number 70? Do you agree?

23 A. Correct.

24 Q. The temporary screw 10 provides a
25 temporary connection between coping and abutment; is

1 that right?

2 MR. LEWIS: Objection to the form.

3 A. I believe it calls 10 an attached --
4 it's either a threaded post or a temporary
5 attachment post because it's contemplated as having
6 different configurations.

7 Q. I get that. My question, Mr. Leinsing,
8 at this point is simply the temporary fastener,
9 whatever configuration it has, provides a temporary
10 connection between coping and abutment as opposed to
11 a permanent connection; fair?

12 MR. LEWIS: Same objection.

13 A. Yes. It's a temporary fastener that's
14 then replaced later with a definitive screw or
15 permanent screw.

16 Q. It's temporary because you can pull off
17 the prosthesis and the coping from the abutment;
18 yes?

19 A. Yes. You can pull off the prosthesis 3
20 in an axial direction off of the abutment.

21 Q. Right. That's one of the main points of
22 the invention; isn't it?

23 A. Correct.

24 Q. You mentioned repeatedly already that
25 the temporary fastener can have various

1 configurations so why don't we turn to Figure 75
2 which has been much discussed in these cases.

3 My question for you, Mr. Leinsing, can
4 you tell us how this embodiment works?

5 A. Figure 75 is discussed in the
6 specification so I will let the document speak for
7 itself, but my understanding is that this
8 particular temporary post or fastener arrangement
9 could be screwed in or pushed in and then removed
10 axially and it's depicted as an asymmetric thread
11 with a slot 41 and then the patent talks about
12 other types of temporary arrangements that are also
13 axially removed but with different thread or
14 interface arrangements.

15 Q. You mentioned asymmetric thread in this
16 figure and in the petitions this is called the
17 buttress thread; correct? Is that right,
18 Mr. Leinsing?

19 MR. LEWIS: Objection to the form.

20 Q. Isn't that what you call it too?

21 A. I would call it an asymmetric thread. I
22 think buttress and then there's a reverse buttress.
23 The patent calls it an asymmetric thread and I
24 would agree with what the patent says on that.

25 Q. So are you saying that calling the

1 thread that we see in Figure 75 a buttress thread is
2 wrong?

3 MR. LEWIS: Objection to the form.

4 A. It's not what the patent describes it
5 as.

6 Q. I understand that. I'm asking you as an
7 expert. The thread that we see in Figure 75, is it
8 correct to call this a buttress thread?

9 MR. LEWIS: Same objection.

10 A. It's not what the patent calls it.
11 Could I take another break please?

12 Q. Why don't we finish this question and
13 then we'll take another break.

14 A. I think I did finish your question.

15 Q. No, I'm asking you not what the patent
16 says, Mr. Leinsing. I'm asking you as the expert in
17 this case whether it is correct to call the thread
18 that we see in Figure 75 a buttress thread.

19 MR. LEWIS: Objection to the form.

20 Q. Again, I see you looking at the patent.
21 I'm not asking to you look at the patent.

22 A. I asked to take a break, or could you
23 give me a copy of my declaration because I made
24 some notes on what buttress and reverse and forward
25 looking threads and I would like to refer to my

1 declaration to answer your question.

2 Q. Okay. Do you have a copy? You want a
3 copy?

4 A. I can either go get one but if you have
5 one I would appreciate it.

6 Q. I do have one. I'm giving you what has
7 previously been marked as Exhibit 2021. Let me know
8 if you want a copy of your declaration in the PGR
9 proceeding too.

10 A. Yes, please.

11 Q. I will also give you a copy of your
12 declaration in the PGR proceeding which is Exhibit
13 2021 in those proceedings.

14 A. Could I have a copy of the Gracco
15 reference please?

16 Q. Mr. Leinsing, do you have an independent
17 understanding of what these terms mean, buttress
18 thread and reverse buttress thread?

19 MR. LEWIS: Objection to the form.

20 MR. REITBOECK: What's your
21 objection, counsel?

22 MR. LEWIS: Compound. Asked and
23 answered. Foundation.

24 Q. Mr. Leinsing?

25 A. Yes.

1 Q. I'm asking you, we have a question
2 pending. Do you have an independent understanding
3 of what the terms buttress thread and reverse
4 buttress thread mean?

5 A. Yes.

6 Q. Okay. So now I return to my original
7 question. Is it correct to call the thread that we
8 see in Figure 75 a buttress thread?

9 A. It can sometimes be referred to as a
10 buttress thread but that's not what the
11 specification calls it.

12 Q. Would you refer to it as a buttress
13 thread?

14 A. No, I would call it an asymmetric thread
15 and define it with dimensions.

16 Q. You've used the term reverse buttress
17 thread, right, in your declaration?

18 A. Yes.

19 Q. I see you have the page right in front
20 of you where you talk about a reverse buttress
21 thread; right? Is a reverse buttress thread an
22 asymmetric thread?

23 A. I think I nodded my head. I didn't
24 finish answering the question.

25 Q. Please.

1 A. Yes, in figure -- in paragraph 135 I
2 talk about the reverse buttress thread and then the
3 regular forward buttress thread.

4 Q. Is reverse buttress thread an asymmetric
5 thread?

6 A. Yes.

7 Q. And the thread in Figure 75 is also an
8 asymmetric thread; right?

9 A. Yes.

10 Q. So what's wrong with calling this a
11 buttress thread, Mr. Leinsing?

12 MR. LEWIS: Objection to the form.

13 A. Because that's not what the patent
14 specification calls it.

15 Q. I'm not asking what the patent
16 specification calls it. I'm asking you as an
17 expert, Mr. Leinsing.

18 A. You asked me what is wrong with calling
19 it a buttress thread and I told you that's not what
20 the patent specification calls it and I think it's
21 improper to impart words or language into a patent
22 that are not there.

23 Q. So you have no independent opinion of
24 what you can call this type of thread?

25 MR. LEWIS: Objection. Misstates

1 testimony.

2 A. Well, that's not what you asked me
3 previously.

4 Q. I did. I did. And I'm asking you
5 again. As an expert in this case, Mr. Leinsing, do
6 you disagree with the term buttress thread for the
7 particular thread that we see in Figure 75?

8 A. I mean, for purposes of discussion and
9 the petition uses the word buttress thread, if you
10 want to use that and then say that 75 is a buttress
11 thread, I mean I suppose that's fine, but I prefer
12 to use the language of the patent which is an
13 asymmetric thread and, in particular, this one with
14 a slot 41.

15 Q. I'm sorry, did you still want to see
16 Gracco?

17 A. Yes please.

18 Q. I'm giving you what is Exhibit 1006 in
19 the IPR proceeding which is the Gracco reference.
20 G-R-A-C-C-O.

21 Looking at Figure 1 on the second
22 page -- I'm sorry, on page 4, do you see Figure 1?

23 A. Yes.

24 Q. The Gracco reference calls this type of
25 thread that we see in Figure 75 of the patent a

1 buttress thread; correct?

2 MR. LEWIS: Objection to the form.

3 A. It calls the thread shown as in B as in
4 bravo a buttress thread, yes. On page 4 of 7 of
5 the Gracco reference.

6 Q. That's the same type of thread we see in
7 Figure 75; fair?

8 A. It is similar but it's not used in the
9 same way the Figure 75 is used in an abutment
10 thread that it does not match the threads but
11 Gracco's would identically match the female threads
12 of this case a synthetic bone.

13 Q. Let's return to Figure 75 of the patent.
14 Do you have that in front of you?

15 A. Yes.

16 Q. So do I understand correctly that when
17 using this type of temporary fastener with the
18 system described in the patent, you screw this
19 temporary fastener in to fasten the coping to the
20 abutment; right?

21 A. It's preferred to be screwed in place
22 and then removed axially although it does
23 contemplate that you could reverse the threads and
24 axially insert it as well.

25 Q. Okay. Let's stay for a second with the

1 embodiment we see in Figure 75. Okay?

2 A. Okay.

3 Q. The arrow indicates that you pull this
4 out axially; right?

5 A. Correct.

6 Q. But before you do that you screw it in
7 or you push it in?

8 MR. LEWIS: Objection to the form.

9 A. It says you could do either.

10 Q. What says?

11 A. If you look on column 23, line 23 to 27
12 it says, "Although the threads could be designed to
13 provide engagement with an implant abutment threads
14 through axial motion in the opposite direction to
15 the arrow shown in 75 rotation to a design torque
16 unengagement is generally preferred."

17 Q. That sentence refers to redesigning the
18 threads compared to Figure 75; right?

19 A. Yes, I think you read that correct. The
20 threads would be designed differently than shown in
21 75.

22 Q. When you do that you push in the screw
23 as opposed to rotate it in; right?

24 A. That's correct.

25 Q. But when you use the temporary screw

1 shown in Figure 75 you don't redesign the threads.
2 My question is do you push it in or do you screw it
3 in?

4 MR. LEWIS: Objection to the form.

5 A. It talks about screwing it in is
6 preferred.

7 Q. When you are at the stage where you want
8 to remove the prosthesis and the coping, you can
9 axially pull it off, right, as shown by the arrow in
10 Figure 75? Is that correct?

11 A. Correct.

12 Q. So mechanically what happens when you
13 pull this off looking at Figure 75?

14 A. The threads would move inward as allowed
15 by the slot 41, they would have some deformation
16 until the screw was allowed to be pulled out in an
17 axial direction.

18 Q. Am I right that when you use this
19 temporary fastener the outer diameter of the screw
20 is larger than the inner diameter of the female
21 threading in the abutment? Correct?

22 A. Can you say that again please?

23 Q. The outer diameter of this screw which I
24 think in technical terms is called the major
25 diameter; right?

1 A. If you're talking about the threads,
2 yes, major diameter.

3 Q. The major diameter is wider than the
4 minor diameter of the female in the abutment; right?

5 A. Not necessarily, no.

6 Q. The inner diameter of the female
7 abutment threading, are you saying that the screw
8 can be -- have a smaller diameter than the threading
9 in the abutment?

10 A. Well, if you repeat the question again I
11 thought you said the major diameter of the screw
12 would be -- did you say major or minor diameter of
13 the female?

14 Q. Why don't you explain to me what the
15 major and minor diameter means in a female
16 threading. Which is which? Maybe I'm messing up
17 the terminology here.

18 A. The major diameter in the female thread
19 would be the greater diameter and the minor
20 diameter would be the peaks inside a female thread
21 or the smaller diameter.

22 Q. Okay. So is a major diameter of the
23 temporary screw wider than the minor diameter of the
24 female abutment thread?

25 A. That's correct, it can be, yes.

1 Q. That's why it's screwed in?

2 A. That's correct.

3 Q. You said it can be. Isn't it
4 necessarily the case when you're talking about a
5 screw?

6 A. Well, that's what's different about this
7 patent is that the screw of the temporary screw is
8 different -- has different threads or can have
9 different threads than the female threads of the
10 abutment and it also talks about interference and
11 other methods of creating a temporary post. So the
12 threads wouldn't necessarily have to go into the
13 threads of the female abutment, there could be an
14 interference created between the two.

15 Q. I understand that you in your report you
16 talk about a version with an interference fit. I
17 want to set to the side and talk about temporary
18 screw within Figure 75.

19 Are you saying that the major diameter
20 of this screw could be smaller than the minor
21 diameter of the female threading in the abutment?

22 A. If you chose that particular option of
23 having an interference and not a type of engagement
24 of two threads.

25 Q. You're saying this screw we see in

1 Figure 75 could work not by way of threading it in
2 but by way of an interference fit?

3 A. Correct.

4 Q. Is that described in the patent in the
5 context of Figure 75?

6 A. It talks about interference fits and
7 talks about how you can take in column 8 lines 5 to
8 8 and combine different disclosures within the
9 patent to achieve the claimed invention.

10 Q. Okay. So tell me how this would work
11 when you choose Figure 75 to work with an
12 interference fit. How do you get it in? Do you
13 screw it in or do you push it in?

14 A. You could screw it in but it would be
15 more likely to screw it in versus push it in but
16 you might also be able to push it in.

17 Q. Where would the interference fit be,
18 interfere with each other?

19 A. The major diameter of the screw threads
20 would interfere with the minor diameter of the
21 female threads in the abutment. It talks about
22 Figure 75 have serrations so those may not
23 necessarily engage or go into the valleys of the
24 threads of the female abutment, therefore, would
25 interfere with those threads, have an effect of

1 being able to be screwed in place but then also be
2 then axially removable. That's what's unique and
3 novel about this patent that a person skilled in
4 the art would not have thought of until these
5 teachings.

6 Q. When you extract the temporary screw of
7 Figure 75 it is the slot 41 that allows for that
8 extraction; right?

9 A. That and if you look at other teachings
10 which is it could be made of plastic or other
11 things the threads themselves or serrations would
12 deform and deflect or both.

13 Q. Does the patent ever describe that the
14 threads deform?

15 A. Yes. By teaching a person skilled in
16 the art that the temporary post or threaded post
17 could be made of plastic.

18 Q. And in your understanding that in and of
19 itself teaches one that's skilled in the art that
20 the threads deform?

21 A. Yes. If there's an interference fit
22 between the temporary post or screw inserted into a
23 female threaded abutment such that there's
24 interference then there would be deformation.

25 Q. So you're taking the description of the

1 screw being plastic and the description of the
2 interference fit and combined that with Figure 75;
3 is that right?

4 MR. LEWIS: Objection to the form.

5 A. I wouldn't say that it's being combined
6 as two separate embodiments, I think it's
7 describing what that temporary post or screw could
8 be made of as described in Figure 75.

9 Q. Which description are you referring to?

10 A. The description of Figure 75 in column
11 23 and then when you go to the next column 24 it
12 says that the metal-reinforced ceramic and polymer
13 copings, posts and fasteners may be included in
14 this and other embodiments. That's in column 24,
15 line 3 to line 5.

16 Q. You're referring to the description of
17 polymer?

18 A. Correct. Polymer is a plastic. And I'm
19 looking at the '992 patent because I think the line
20 numbers are different in the '781.

21 Q. Unless there's a specific reason to look
22 at the other patent, if it's okay we'll consistently
23 look at the '922 patent.

24 A. I was just going to say that.

25 Q. You also mentioned interference fit and

1 you take that teaching I take it from column 24,
2 line 53; is that right?

3 A. That's correct.

4 Q. That's how you get to your opinion that
5 the threads would deform upon axial extraction?

6 A. That's correct. It's specifically
7 calling out Figure 75, it's talking about the
8 interference fit and how the Figure 75 is not
9 limiting and has other embodiments as discussed in
10 my declarations as well.

11 Q. The description in this very paragraph
12 in particular column 24 lines 51 through 53 says
13 that it is the split post bottom structure shown in
14 Figure 75 which allows axial extraction; correct?

15 A. That's what it says, and that's an
16 example of one way to assist axial extraction but
17 is not the only embodiment described.

18 Q. In the context of Figure 75 it's the
19 only embodiment described; right?

20 A. Figure 75 only shows the split post but
21 then other parts of the specification talk about
22 designing the threads as it describes in 75 to
23 either insert or remove easier. It describes
24 different materials and describes either having the
25 split post or not by other parts of the patent

1 particularly if you look at column 8 of the '992
2 that talks about the different variations of the
3 embodiments.

4 Q. What is in column 8?

5 A. Where it says if you have the different
6 embodiments as shown for the temporary post,
7 meaning variations A, B and C you can -- you can
8 have A, B, C separately, A and B, A and C, B and C
9 or A, B and C.

10 Q. What are you referring to in the actual
11 descriptions of the embodiments, what it applies?

12 A. So applying that you could have a
13 temporary post or screw arrangement that has one
14 with only a slot, with only asymmetric threads,
15 with only serrations, with a slot and asymmetric
16 threads, or with a slot and serrations, or with
17 asymmetric threads and serrations, as well as with
18 a slot, asymmetric threads and serrations.

19 Q. Which sentence are you referring to in
20 the specification? Let me catch up here.

21 A. So if you first look at Figure 75's
22 description in column 23, starting at line 10, and
23 then you go through each of those columns into
24 column 24, you get all of the discussions of
25 asymmetric threads, the description of the slot,

1 description of the serrations and then in column 8,
2 line 3 -- I'm sorry, line 5 to line 7 it talks
3 about when you look at all the different figures of
4 the embodiments of temporary posts and screws from
5 Figures 70 to 78 you can combine different types of
6 threads, slots or no threads, interference fits.
7 And then which is limited by the claims,
8 specifically the elements.

9 Q. So you're saying you could combine any
10 of the features you see in any of the Figures 70
11 through 78?

12 A. Yes, as long as they meet all of the
13 other elements of the claim.

14 Q. Is that restricted to Figure 70 to 78 or
15 are you saying you can combine any feature of any
16 figure with any other feature of any other figure?

17 A. First, we don't just look at the
18 figures, they're exemplary embodiments, but when
19 you look at the figures and you read the
20 specification of the patent you at least get the
21 potential combinations as I described in my PGR
22 declaration page 64 paragraph 163.

23 Q. Okay. Maybe I should have been clearer.
24 Are you saying that you can combine any
25 features of any embodiments in this patent with any

1 other features of any other embodiment described in
2 this patent?

3 A. Well, according to the patent, starting
4 at the bottom of column 7 to column 8, you could do
5 that as long as you meet the limitations of the
6 claim.

7 Q. Is that the legal understanding that you
8 based your opinions on?

9 MR. LEWIS: Objection to the form.

10 A. I'm not an attorney so I can't tell you
11 the legal understanding, but it's my understanding
12 as a person of skill in the art that reading this
13 patent and the specification including the file
14 history, I came to the conclusion as I mention in
15 my declarations, namely the PGR, paragraph 163,
16 regarding the types of configurations for the
17 temporary screw.

18 Q. I understand that you are not a lawyer,
19 Mr. Leinsing, I'm not saying that, but you do -- you
20 have based your opinions on certain -- on an
21 understanding of certain legal standards which you
22 also report in your declarations; correct?

23 A. Yes. I have an understanding of the
24 patent law and patents as I describe in my
25 declarations.

1 Q. All I'm asking you is that when you
2 expressed your opinions in these two cases, your
3 understanding was that it is legally okay to combine
4 features from different embodiments from the patent;
5 is that correct?

6 A. That's my understanding and the patent
7 says that you can do that. It says, "Furthermore,
8 the particular features, structures or
9 characteristics may be combined in any suitable
10 manner in one or more embodiments without
11 limitation," but I would add to that to say that
12 the limitation would then be described by the
13 claims themselves because the claims do limit what
14 that combination must do or be as a structure.

15 Q. Understood. And just for the record you
16 were referring to the sentence we see in column 7,
17 line 67 through column 8 line 3; correct?

18 A. That's correct. It goes on further from
19 there to the discussion of the A, B, C.

20 MR. LEWIS: Counsel, we've been
21 going for little more than an hour.

22 MR. REITBOECK: We can take a
23 break. Sure.

24 Off the record.

25 (Recess taken.)

1 BY MR. REITBOECK:

2 Q. Welcome back, Mr. Leinsing. Focusing on
3 the embodiment we see in Figure 75, do you have an
4 understanding of how much force it would require to
5 pull off this temporary screw and the prosthesis
6 from the abutment when it's used?

7 A. The claims are silent as to the
8 particular axial force required. It would be my
9 understanding that it would be reasonable such that
10 it would be comfortable to the patient and that's
11 what's contemplated by the invention, is to make it
12 quicker and easier but yet still be accurate for
13 the device.

14 Q. Are you saying that the force should be
15 low enough so not to make it uncomfortable for the
16 patient?

17 A. Again, the claims are silent to the
18 exact number of what that force would be, but it
19 would be understood that it would be -- you would
20 want to make something within the limitations of
21 the claims but be comfortable to the patient and
22 easy enough for the orthopedic surgeon to perform
23 the procedure.

24 Q. So the lower the required force the
25 better?

1 MR. LEWIS: Objection to the form.

2 A. You wouldn't want it too low as to then
3 create issues with the accuracy and placement of
4 the coping or while it's curing, the other
5 prosthesis is curing in the patient's mouth, but be
6 low enough that it's easy to remove.

7 Q. The system can be used in connection
8 with one single tooth prosthesis or multiple teeth
9 prostheses; right? I refer you to column 5, lines
10 16 through 21.

11 A. Correct.

12 Q. If you look at column 2, line 30 through
13 33, the patent also says that, "The amount of force
14 required to remove the tray or convert a prosthesis
15 depends upon the total number of implant
16 abutment/coping sets and their position and mutual
17 alignment."

18 Do you see that?

19 A. Which lines in column 2?

20 Q. Column 2 lines 30 through 33.

21 A. Yes, I see that. I would agree with
22 that.

23 Q. When you're talking about a whole
24 denture that's often placed over four or five
25 implants; right?

1 A. It depends on the procedure. I think
2 the patent talks about four implants mostly.

3 Q. Have you heard the term "All-on-4"?

4 A. I don't recall that term, no.

5 Q. But looking for example at Figures 37,
6 38, 43, 45, that seems to be a common use case;
7 fair?

8 A. Yes, that's what I said in my previous
9 answer, that the patent shows mostly usage of four
10 implants.

11 Q. When the patent says the amount of
12 removal force required depends on the number of
13 implant abutment and coping sets, my question for
14 you, Mr. Leinsing, does it take more removal force
15 when it is more than one abutment or does it take
16 less?

17 A. Well, if you have the same temporary
18 fastener arrangement for one as you do for four
19 then the force to remove four will be more than the
20 force to remove the one; but if your application is
21 going to be four implants then you could design for
22 that and have a lower force for each such that the
23 total is lower.

24 Q. I'm afraid I have to ask you to explain
25 that. Contemplating the option of a denture placed

1 on top of four implants versus the option of a
2 single tooth prosthesis, which of the two options
3 requires more removal force?

4 A. I don't think the patent is
5 contemplating that you would have the exact same
6 temporary fastener system for one. You would have
7 the same design and concept but you could design
8 the implants used for a complete denture that uses
9 four implants to have a lower force than the one
10 used for a single implant.

11 But the basic concept for use of the
12 '992 or '781 patents would still apply, it would
13 just be potentially a lower force when you're using
14 four than when you're using one. Or you could
15 select a force that may work with one that also
16 works for four. It's not required that what works
17 for one has to be the exact same implant abutment
18 when you use four.

19 Q. The system in the patent can be used
20 either in a clinical setting or in a laboratory
21 setting; correct?

22 A. I don't think the claims are limited to
23 what the setting is.

24 Q. I didn't say that. Let me refer you to
25 column 6, line 43 through 47 which says,

1 "Description of alignment systems and process
2 methods with copings and implant abutments that are
3 installed in a patient's jaw should be considered to
4 also describe equivalent inventive concepts that may
5 be used with copings and implant abutment analogs in
6 a dental lab."

7 Do you see that?

8 A. Yes.

9 Q. When you use the system in a clinical
10 setting meaning directly in the patient's jaw, that
11 can occur shortly after the implants are placed in
12 the jawbone of the patient; right?

13 I will refer you to column 1, lines 63
14 through 67.

15 A. Okay.

16 Q. For the record, this passage says, "In
17 some cases it is preferable to convert these
18 existing dentures shortly after the implants are
19 placed. This chair-side processing decreases
20 patient discomfort by providing at least temporary
21 dentures more quickly."

22 A. That's what it says.

23 Q. In practice that can sometimes happen on
24 the same day as the implant placement; is that your
25 understanding?

1 A. Yes, which is why my previous answers
2 were, as I said, to be a quick and as comfortable
3 to the patient as possible.

4 Q. Especially in the situation where you
5 have a freshly placed implant in a patient's
6 jawbone, would it be one goal in designing such a
7 system to reduce the required pull-out force as much
8 as possible so you sacrifice on the issue of
9 stability?

10 A. It would be to do that and do that in a
11 small system, but to do that with a temporary screw
12 with no threads or threads that didn't match the
13 threads of the female threads in the abutment would
14 not have been contemplated prior to the invention.

15 Q. All I'm asking, Mr. Leinsing, in
16 general, if you design a denture conversion system
17 like the one in the patents, one goal would be to
18 reduce the pull-out force that is required as much
19 as possible in order not to injure the patient who
20 has a freshly placed implant in its bone; is that
21 correct?

22 A. I wouldn't look to the level of injury,
23 it would obviously be less than an injury level, it
24 would be more comfort and the temporary fasteners
25 or posts or threads will not always be exactly

1 parallel which will add to the force. So you're
2 balancing that with the friction force to or
3 interference to remove the prosthetic.

4 Q. Mr. Leinsing, I'm not talking about the
5 technical implantation at this point. I'm talking
6 about one goal in designing such a system would be
7 to reduce the required pull-out force in order to
8 make it comfortable for the patient and in order not
9 to injure the patient who has a freshly placed
10 implant in his or her jawbone; is that fair?

11 A. Yes, which is why I have the opinions
12 that the claims are not indefinite because you have
13 to meet the limitations of the claims while also
14 designing a temporary screw that is not -- requires
15 not too much force but enough force to keep the
16 alignment.

17 Q. Okay. Reducing the pull-out force that
18 is required while keeping alignment and stability,
19 that's a matter of degree; right? That's not a
20 binary issue?

21 A. There is some amount of subjectivity to
22 a patient for a patient will have certain levels of
23 comfort and an orthopedic surgeon will have certain
24 degrees of what they feel is necessary to remove
25 the prosthetic, but it's going to be a very narrow

1 margin of what that force will be that will work
2 for both the patient and the orthopedic surgeon
3 such that a person of skill in the art could come
4 up with the invention without undue
5 experimentation.

6 Q. Let me repeat the question.

7 When having the goal to reduce the
8 pull-out force that is required so to make it
9 comfortable and so not to injure the patient, that
10 goal is a matter of degree as opposed to a binary
11 issue; would you agree with that?

12 A. Well, then let me ask you what do you
13 mean by binary issue?

14 Q. It's not that at some level of pull-out
15 force you're done, you can reduce it more and reduce
16 it even more as long as you don't compromise your
17 stability and alignment; is that fair?

18 A. Well, first, the claims are silent as to
19 the particular force, but there's going to be a
20 range, as you've mentioned, of discomfort to then
21 being too easy to remove or that impacts the
22 alignment and that margin is going to be pretty
23 narrow from my experience working with things that
24 have to work with a post and friction.

25 Q. I'm not talking about the claims, I'm

1 just talking about we talked about the design goal
2 of reducing the required pull-out force. Okay? My
3 question is the goal to reduce the required pull-out
4 force is a matter of degree, in other words, there's
5 a range of required pull-out force and the further
6 down I can bring it the better as long as I don't
7 compromise alignment and stability; is that fair?

8 A. I think to a person of skill in the art
9 and consulting with orthopedic surgeons it will be
10 known with other systems that were discussed in the
11 patent, namely like snap systems, that were not
12 desirable for the reasons the patent talks about.
13 So those forces will have been pretty well-known
14 what to achieve and it's the patent that discusses
15 a different way to then achieve that but you would
16 be able to come up with those forces and I think it
17 would be desirable to make that as less as possible
18 as long as alignment is still achieved. But again,
19 the claims don't talk about force so.

20 Q. Understood. I'm not saying they do.

21 A. I should say force level. They talk
22 about axial pull-out force but not the level of the
23 force.

24 Q. Do you have any understanding as to what
25 the axial pull-out force roughly is in a full

1 denture conversion as contemplated in the patent in
2 the context of Figure 75?

3 MR. LEWIS: Objection to the form.

4 A. I did not do that analysis for this
5 case. I would consult with an orthopedic surgeon
6 and do some research to what levels would be
7 acceptable to a surgeon and patients. That was not
8 required for my invalidity analysis.

9 Q. Let me give you a copy of Exhibit 1003
10 in both the IPR and PGR which is the Bernhard
11 patent. I take it you are familiar with this
12 patent?

13 A. Yes.

14 Q. Let me focus you on paragraph 67 on page
15 30. Towards the end of the paragraph, 67, do you
16 see the word "generally"?

17 A. Yes.

18 Q. Six lines from the bottom. Let me read
19 that into the record.

20 It says, "Generally, the threshold force
21 required to overcome the provisional connection
22 feature and detach the components should be chosen
23 such that injury to the patient's bone is avoided.
24 This is particularly important in cases of
25 provisional prosthetic systems in which the

1 prosthetic system is being attached immediately or
2 shortly after surgical implantation of the
3 implants."

4 Do you see that?

5 A. Yes.

6 Q. That expresses the same thought we had
7 before that the required pull-out force should be
8 low?

9 A. Yes, when designing the systems you want
10 to choose a force that's not going to be
11 uncomfortable or cause injury to the patient and
12 the '992 patent and '781 patent talk about a system
13 that can be designed to achieve that. But the
14 claims are not limited, again, to any particular
15 force level.

16 Q. Understood.

17 Let me show you Exhibit 1005 in both the
18 IPR and PGR proceedings which is the Poovy patent
19 and Poovy is P-O-O-V-Y.

20 I take it you are familiar with the
21 Poovy patent?

22 A. Yes.

23 Q. Let me direct your attention to
24 paragraph 84 on page 18. You remember the Poovy
25 patent is the one with the flexible threads; right?

1 A. Yeah, one with heat-labile plastic and
2 silicone threads which was also discussed in the
3 '992 and '781 patent.

4 Q. Right. In paragraph 84 --

5 A. In the background section of those
6 patents.

7 Q. In paragraph 84 towards the middle
8 there's a sentence that starts with, "The threading
9 and/or sleeve coating." Do you see that?

10 A. Yes.

11 Q. Let me read that into the record. It
12 says, "The threading and/or sleeve coating of the
13 impression coping securing screw is preferably a
14 plastic or silicone material with enough flexibility
15 to be pulled out of the implant with low resistance
16 such that it is not difficult for the dental
17 professional and does not cause pain or stress to
18 the patient."

19 Do you see that?

20 A. Yes.

21 Q. Again, that discusses the same
22 consideration we discussed before in that one would
23 want to reduce the pull-out force in order not to
24 injure the patient or make it uncomfortable for the
25 patient; fair?

1 A. Yes, that's the same requirement. But
2 the '992 patent and the '781 patent just does that
3 in a unique and different way than the prior art.

4 Q. Okay. I understand.

5 I've already given you Gracco so to be
6 complete let me give you also Exhibit 1008 in both
7 the IPR and PGR proceeding which is the Derey
8 patent.

9 MR. REITBOECK: And Derey is
10 D-E-R-E-Y.

11 Q. I take you are familiar with the Derey
12 patent?

13 A. Yes.

14 Q. Mr. Leinsing, you've read the Bernhard
15 patent Exhibit 1003. We previously discussed
16 that -- we previously discussed the use of pick-up
17 copings as opposed to transfer copings. Do you
18 remember that?

19 A. Yes.

20 Q. The system in Bernhard uses pick-up
21 copings; correct?

22 A. I believe that's correct but I would
23 need to read the spec to see if it talked about use
24 with transfer copings.

25 Q. Let's look at one of the figures. How

1 about Figure 9? The coping is number 700; right?

2 A. Correct.

3 Q. And the pick-up material is number 518;
4 is that correct? Or bonding agent --

5 A. Yes, 518, or the term used in Bernhard
6 for line 18 is the bonding agent.

7 Q. And 510 is the prosthesis; right?

8 A. Correct.

9 Q. And then you lift off the prosthesis and
10 the coping together from the abutment 650; correct?

11 A. Correct. After it's bonded, correct.

12 Q. The coping is attached to the abutment
13 by way of a temporary connection; right?

14 A. Yes. In this case it's a snap feature.
15 It's totally external, it's not a threaded type
16 post or temporary post.

17 Q. In use you pull off the prosthesis and
18 coping from the abutment by way of an axial
19 movement; right?

20 A. Yes. With a snap feature and not a
21 threaded post that has threads that don't match the
22 abutment and all of the other limitations of the
23 claims.

24 Q. Because you can pull off the prosthesis
25 and coping by way of an axial movement you can, use

1 a closed tray impression protocol; fair?

2 A. Correct. You could do that.

3 Q. Okay. The system in Poovy, in
4 particular the screw of Figure 13 -- for the record,
5 Poovy is Exhibit 1005 -- that's also a temporary
6 connection between coping and abutment; right?

7 MR. LEWIS: Objection to the form.

8 A. Which figure?

9 Q. Figure 13. Which Poovy calls, "The
10 impression coping securing screw."

11 A. Yes. But that's a different temporary
12 screw than what's being claimed and described by
13 the '992 and '781 patents.

14 Q. You can screw it in to connect coping
15 with abutment; correct?

16 A. Yes, you can but, again, it's not in the
17 way that the '992 and '781 describe and claim
18 because the threads of Poovy would match the
19 threads of the abutment, in the '992 and '781 as
20 claimed would not.

21 Q. Once the prosthesis is bonded to the
22 coping, you can pull the prosthesis and coping
23 including the screw in Figure 13 off the abutment;
24 correct? That's how it works; right?

25 MR. LEWIS: Objection to the form.

1 A. Well, it depends on the embodiments that
2 you are talking about. It talks about doing
3 silicone coating or adding heat-labile plastic to
4 get that deformation to occur and, again, it's in a
5 different way than the '992 and the '781 patent
6 because the threads on this would match the
7 abutment, but once you do all that then, yes, Poovy
8 would allow you to pull that screw out in an axial
9 way. It's just that the design of the screw or
10 invention of the temporary screw is different and
11 requires either heat or complicated silicone
12 coating to achieve the axial pull out feature.

13 Q. Since you can pull it out axially you
14 are able to use a closed tray impression protocol;
15 fair?

16 A. You can use the closed tray in the
17 system but the system works differently and it
18 would be difficult, as I explained in my
19 declarations, especially with the heat-labile
20 plastic, I'm not sure how you would use heat with a
21 closed tray or even get it to all four points at
22 the same time and then have comfort to patients.
23 It has a lot of issues and is not designed the same
24 way as the '992 or '781 patent.

25 Q. I understand that's your opinion for the

1 time being. My only question is you can use this
2 screw in Poovy with a closed tray impression
3 protocol; is that true?

4 A. I'm not entirely sure because I'm not
5 sure -- if it's the heat-labile plastic how you
6 would get the heat to that temporary screw to make
7 it deformable. So you might need to use an open
8 tray system to achieve that.

9 Q. Is it your opinion that Poovy requires
10 the addition of heat?

11 A. If you're using the heat-labile plastic
12 option, yes; if you're using the silicone coating
13 option then no.

14 Q. And that option --

15 A. Which option?

16 Q. The silicone option. Let's start there.
17 Poovy discusses flexible plastic; right?

18 A. Can you show me where it says --

19 Q. We just read it. It was in paragraph 84
20 which is one example where Poovy mentions a,
21 "Preferably a plastic or silicone material with
22 enough flexibility to be pulled out of the implant
23 with low resistance such that is not difficult for
24 the dental professional and does not cause pain or
25 stress to the patient." Remember?

1 A. Where did that start again?

2 Q. It's in paragraph 84. There's no line
3 numbers but it's somewhere towards the middle.

4 A. Yes, if it's made of the plastic or
5 silicone as I mentioned then you would not need the
6 heat for that particular version.

7 Q. In that version you can use a closed
8 tray impression protocol; fair?

9 A. Yes, but again, this is different than
10 what the '992 and '781 patents contemplate for a
11 temporary screw system.

12 Q. And in the Poovy system you can also use
13 pick-up copings as opposed to transfer copings; is
14 that true?

15 A. I believe that's correct but, again,
16 it's a different type of temporary screw than the
17 one in '992 and '781 that has threads that are
18 different than the abutment that helps to achieve
19 that balance of low force yet superior alignment
20 between the coping and the abutment, that's what
21 makes the '992 and '781 patents unique.

22 Q. With respect to alignment, if you look
23 at paragraph 22 of Poovy, Poovy expresses that the
24 use of his screw ensures proper alignment and
25 orientation of a dental prosthesis assembled on the

1 implant. Do you see that?

2 A. Yes, but that's only with the screw
3 comprising heat-labile plastic or silicone
4 material. It does not talk about the deformable
5 plastic.

6 Q. It does talk about silicone material;
7 right?

8 A. Yeah, which is the material I discuss in
9 my declaration as difficult or costly to then put
10 on these small screws to work.

11 Q. Suffice it to say that Poovy expresses
12 that the screw ensures proper alignment and
13 orientation; right?

14 A. Yes, that's what it says. Again, you
15 have to balance that with the pull-out force and
16 then what the '992 and '781 patent does is come up
17 with an invention of an attachment screw that's, in
18 essence, not a screw because it doesn't have
19 threads that matches the female abutment such that
20 it makes for a better system to have a low force
21 while still having the alignment. Low pull-out
22 force while still having the alignment.

23 Q. You previously said in one of your
24 declarations that the thread geometry affects the
25 pull-out force that is necessary. Do you remember

1 that?

2 A. Yes. And it can.

3 Q. Sorry?

4 A. I said yes, and it can.

5 Q. And the buttress thread as we see in
6 Gracco reduces the required pull-out force; correct?

7 A. Gracco contemplates the buttress thread
8 B as shown in Figure 407 can lose that pull-out
9 force but it's with a female thread which is
10 created by the screws in Gracco that match nearly
11 perfectly with the screw. That's not the same as
12 what the '992 and '781 patents teach and claim.

13 Q. Let me show you what was previously
14 introduced as Exhibit 2010 which is your first
15 declaration in the IPR proceedings of August 29,
16 2025. In paragraph 83 on page 36 you said, "As a
17 POSA," standing for person of skill in the art, a
18 person of ordinary skill in the art you said, "As a
19 POSA I can first state that the principle that
20 different thread profiles affect the pull-out force
21 required to disengage a screw is well-known and a
22 natural result of inherent geometry."

23 Do you see that?

24 A. Yes. That's for a screw where the male
25 thread matches the female thread and, again, that's

1 not what's claimed and described in the '992 and
2 '781 patent.

3 Q. Are you saying that the sentence does
4 not apply to screws that are in female threading?

5 A. No, I'm saying it does apply to screws
6 in female threading that matches the male threading
7 closely. But the '992 patent and '781 patent does
8 not teach or claim that. Along with the other
9 limitations.

10 Q. As between a screw with a -- let's look
11 at Gracco. If you look at Figure 1 of Gracco and I
12 see you have it in front of you. For the record,
13 that's Exhibit 1006 on page 4.

14 A. Okay.

15 Q. As between the buttress thread we see in
16 Figure 3 and the trapezoidal thread we see in Figure
17 E, which one is easier to pull out?

18 A. As shown in Table 1 on page 5 of Gracco,
19 the buttress thread with a matching female thread
20 is easier to pull out than the trapezoidal thread
21 of the male thread that matches a female thread.
22 But, again, the '992 and '781 patents do not claim
23 or teach the threads of the male to match the
24 female of the abutment.

25 Q. Would the comparison be any different if

1 the male thread did not match the female thread as
2 between the buttress thread and trapezoidal thread?

3 MR. LEWIS: Objection to the form.

4 A. Well, the Gracco study is something
5 completely different than what the '992 and '781
6 patent is contemplating so I wouldn't know what the
7 results for sure, I would need to know the geometry
8 of both to give that answer. And when I say both,
9 I mean the geometry of what the abutment female
10 thread would look like and the -- against the
11 thread of the temporary screw.

12 Q. Are you saying that as between a
13 buttress thread and a trapezoidal thread it is not
14 the natural result of inherent geometry, the words
15 you used, that the buttress thread would be easier
16 to pull out?

17 A. With matching female threads?

18 Q. With any type of thread.

19 A. Do you want to reword your question then
20 because if you're saying a male buttress to a
21 female buttress against a male trapezoidal to a
22 female trapezoidal then it's been shown by Gracco
23 and I would have expected that the buttress would
24 be easier to pull out. But a buttress thread or
25 trapezoidal thread inside a female symmetric thread

1 where either of those buttress or trapezoidal
2 threads do not engage but create some interference
3 then they could potentially have a very likely
4 similar pull-out force which is another thing of
5 what makes the '992 and '781 patent advantageous
6 because it can be more consistent in that pull-out
7 force by doing that and easier to pull it out while
8 keeping the alignment.

9 Q. Why do you say it can be more consistent
10 in that pull-out force by doing that, can you
11 explain that? By doing what?

12 A. By having a mismatch of threads or by
13 having different threads and the temporary screw
14 acting more like an interference post versus two
15 threads that are designed to engage each other then
16 the pull-out force becomes less dependent on the
17 type of thread and more dependent on the
18 interference thereby making variations in the
19 threads of the male post less of an impact on the
20 axial force. Which is another advantage of the
21 '992 and '781 patent. Because it's different than
22 having a male thread that matches the female
23 thread.

24 MR. REITBOECK: Shall we take a
25 short break and maybe one more session before

1 lunch?

2 MR. LEWIS: Okay.

3 (Recess taken.)

4 BY MR. REITBOECK:

5 Q. Welcome back, Mr. Leinsing. I take it
6 you've served as an expert before. Can you tell us
7 how many times roughly have you served as a
8 technical expert?

9 A. Roughly 65.

10 Q. How many times have you testified at
11 trial roughly speaking in a court?

12 A. I think at a jury approximately ten
13 times. Bench trials like probably 20 times
14 including Markman hearings and things like that.

15 Q. And do you have a sense of how many
16 times you were deposed?

17 A. It's approximately that same amount of
18 time, around 65 times.

19 Q. Do you have a sense of how many times
20 you've served in the patent office, in PTAP
21 proceedings?

22 A. They're listed on my CV. At least the
23 ones in the last four years. Probably 20 or so, 25
24 different IPRs. I think this was my first PGR.

25 Q. Has your testimony ever been excluded by

1 a court to your knowledge?

2 A. No. Definitely not for technical
3 reasons. There has been testimony excluded but on
4 legal technical reasons like writing a report that
5 was outside contentions that I didn't have input
6 on.

7 Q. What case was that?

8 A. I don't recall. I'm not sure. I just
9 know sometimes there are legal reasons why things
10 are excluded in a report and I know that happened
11 once or twice.

12 Q. Do you remember any other legal reasons
13 on the basis of which your reports or opinions were
14 excluded?

15 A. Not that I can think of, no.

16 Q. As Exhibit 2019 in the IPR your CV was
17 previously filed. I will also give you what has
18 been marked as 2019 in the PGR which is also your
19 CV. Are they identical? Do you remember making any
20 changes?

21 A. According to the date at the bottom it
22 says the same date so they should be identical.

23 Q. Your CV was comprehensive as of the time
24 you gave your opinions in this case -- in these
25 cases; is that correct?

1 A. I believe so. I think there was a few
2 little changes. Company name is actually LLC now
3 not Inc.

4 Q. Any other changes that come to mind?

5 A. Not that I can think of. There might be
6 a case that was maybe missing but it's not related
7 to anything with this case. There was one case on
8 a needle insertion device for doing tissue piercing
9 that I did.

10 Q. Say that again.

11 A. It was a tissue piercing device for an
12 ear piercing.

13 Q. You're saying --

14 A. It's not on the list but I believe it
15 was prior to 12/19. When I edited this recently I
16 noticed that one was missing.

17 Q. I see that with respect to your
18 litigation experience, including declarations in the
19 PTAP, that only covers the last four years; right?

20 A. Correct.

21 Q. The cases you served as an expert, you
22 generally appeared as an expert on medical devices;
23 correct?

24 A. Yeah. Only medical devices. That's my
25 focus.

1 Q. One of the cases was about e-cigarettes;
2 is that right?

3 A. Yes. Which is now considered a medical
4 device by the FDA. That was actually a contentious
5 thing actually in the state with the cigarette
6 companies, whether vaping devices or e-cigarettes
7 would become a medical device or not. I actually
8 worked on a vaping device that would be used for
9 medicinal purposes for Crysalis which is owned by
10 Philip Morris.

11 Q. As of the time you provided your
12 opinions in this proceeding, in these proceedings,
13 did you have experience working with dental
14 implants?

15 A. I have experience with veneers, dental
16 veneers or laminates and the forming spoons. I did
17 some work on the spoons that -- to make them
18 actually more disposable so they could be
19 sterilized a second time to do some polymer science
20 with that. So I had experience with prosthetics
21 and I also had the experience with bone anchors,
22 drills, guides, inserters of all different types.
23 I did analysis of screws going into bone and
24 designing them with proper radiuses and features
25 that would prevent stress concentration and

1 fractures of the bone screws which are all the same
2 features and devices that apply to dental implants
3 as well.

4 Q. You're referring to your experience with
5 bone anchors, bone screws and bone plates you
6 mentioned in the declaration; is that right?

7 A. That's correct. And they're public. I
8 did some IPRs on them for Stryker, particular bones
9 plates and screws for the toe, for hammertoe and
10 also bone plates and screws for the spine.

11 Q. I understand that it's your opinion that
12 that experience is relevant here but do I understand
13 correctly that you do not have experience with
14 dental implants?

15 MR. LEWIS: Objection to the form.

16 A. I have experience with the dental
17 implants to the extent that they used the same
18 process and screws and implants used in the jawbone
19 which would be similar to those used in other parts
20 of the body, of the bone, and have other
21 appliances -- applications I mean to the bone of
22 the jaw.

23 Q. Okay. So again, you're referring to
24 your experience with bone anchors, bone screws and
25 bone plates; fair?

1 A. Correct. They have applicability across
2 the board. Just like the torque, I think the prior
3 art we had there for torquing devices are
4 applicable to other areas of the bone in the body.
5 The same concepts that I've used in the past with
6 bone anchors and screws apply to screws for the
7 jawbone.

8 Q. I understand your opinion, but am I
9 correct that you have no experience with dental
10 implants as such?

11 MR. LEWIS: Objection to the form.

12 A. So if you're saying the specific bone
13 implant that goes right in the jawbone, to the
14 extent that they're the same as the same screws
15 that are used in other bones in the body, I think I
16 do. Like I've said, I've done veneers on the
17 prosthetics that can be used, especially the single
18 tooth prosthetics, for orthopedic purposes.

19 Q. I gave you before your declaration in
20 the IPR which is Exhibit 2021 which was your second
21 declaration.

22 A. Okay.

23 Q. How much time did you spend in drafting
24 this declaration?

25 MR. LEWIS: Objection to form.

1 A. I don't recall.

2 Q. Did you draft this declaration?

3 A. I put together an outline of everything
4 I saw in the prior art, reviewed the patents, put
5 together the things that I found in the patent that
6 were not in the prior art and then counsel helped
7 me draft and put the citations in the report
8 together.

9 Q. Is the same true for your declaration in
10 the PGR proceeding which is also Exhibit 2021?

11 A. Yes. A lot was copied back and forth
12 and then as applicable to the individual petitions.

13 Q. Is the same true for your first
14 declaration in the IPR which is Exhibit 2010?

15 A. Yes, that's correct.

16 Q. And is the same true for your first
17 declaration in the PGR which is Exhibit 2010 there?

18 A. Yes, that's correct.

19 Q. Let's turn to paragraph 46 of your
20 second declaration in the IPR, Exhibit 2021. Are
21 you there?

22 A. Yes.

23 Q. This is where you express your opinion
24 about the person of ordinary skill in the art which
25 is abbreviated POSA. And, Mr. Leinsing, you say,

1 "In my opinion, in the context of the subject matter
2 of the '992 patent, a POSA would be an individual
3 having a bachelor's degree in mechanical engineering
4 or an equivalent technical degree with at least
5 three years of experience in the field such as
6 experience with the design of bone implants, anchors
7 and/or screws."

8 Do you see that?

9 A. Yes.

10 Q. How did you come up with this
11 definition?

12 A. So I've been an expert in other medical
13 device cases and then looking upon how I've applied
14 the definition to other cases with bone implants
15 and screws, looking at the inventors that were
16 listed on the patent, took them into consideration
17 and their backgrounds. And for other individuals
18 that would have similar experience that would have
19 the ability to be a person of skill in the art, I
20 came up with this definition.

21 Q. Part of your definition is, "At least
22 three years of experience in the field such as
23 experience with the design of bone implants, anchors
24 and/or screws."

25 What is "the field"?

1 A. The medical field. Particularly because
2 you're working with bone implants, anchors or
3 screws, so the field of the human body with devices
4 that work with the human body.

5 Q. Are you saying medical devices?

6 A. Yes.

7 Q. And the design of bone implants anchors
8 and/or screws is one example of experience in that
9 field, is that how this is to be understood?

10 A. Yes, that would be the relevant
11 experience in the field that would be part of the
12 definition of a person of skill in the art.

13 Q. Okay, but my question is you say
14 experience in the field such as experience with the
15 design of bone implants, anchors and/or screws. Is
16 the experience with bone implants, anchors and/or
17 screws merely one example of experience in, quote,
18 the field or is that a requirement for the person of
19 ordinary skill in the art?

20 A. Those would be examples of experience in
21 the field for these -- for a person of skill in the
22 art related to these two patents, the '992 and
23 '781.

24 Q. But a person of ordinary skill in the
25 art in your opinion could have other experience in

1 the field of medical devices; correct?

2 A. That would be related experience. So in
3 other words, a person with experience with medical
4 lasers and that's all they worked on, that wouldn't
5 really count as three years of experience, they
6 would need three years of experience of -- related
7 in the field meaning bone implants, anchors and
8 screws, threads, female threads, male threads,
9 material science and things like that that would be
10 applicable to a person of skill in the art for the
11 '992 and '781 patents.

12 Q. Before you said the field is medical
13 devices. Are you now saying that the field is
14 narrower than medical devices?

15 MR. LEWIS: Objection to the form.

16 A. The field would be that experience which
17 would be related to the '992 and '781 patent such
18 as bone implants, anchors, screws, and you add to
19 that polymer science to understand the materials,
20 mechanical connections, you could list a lot of
21 different things, but only those experiences that
22 would be related to the '781 and '992 patent.

23 Q. So I understand that looking at your
24 definition, the experience with bone implants,
25 anchors and screws, as you said, is one example. I

1 take it you express that with the words "such as;"
2 right?

3 A. Yes, because the field we're talking
4 about is the field of bone implants, anchors and
5 screws.

6 Q. Wait a second. You say that the person
7 of ordinary skill in the art would have three years
8 of experience in the field. Do you see that?

9 A. Yes.

10 Q. Then you say, "Such as experience with
11 the design of bone implants, anchors and/or screws."

12 So what I'm trying to understand,
13 Mr. Leinsing, if a person does not have experience
14 with bone implants, anchors and/or screws, can he or
15 she still qualify as a person of ordinary skill in
16 the art?

17 MR. LEWIS: Objection to the form.

18 A. For example, if it was an orthopedic
19 surgeon was a person of skill in the art then they
20 would need to consult with a mechanical engineer or
21 an engineer that has a technical background to
22 complete the definition of a person of skill in the
23 art just as technical person here would consult
24 with an orthopedic surgeon as necessary to -- they
25 could consult with each other. So you could still

1 be a person of skill in the art if you're an
2 orthopedic surgeon with the consultation to a
3 technical person and vice versa.

4 Because I believe Mr. Kofford is -- I'm
5 not sure if I'm mixing up the two but one of them
6 is not even a technical person, one's I think is a
7 doctor or orthopedic surgeon and then the other
8 person is more technical but with not an orthopedic
9 surgeon. I'm not one hundred percent sure but I
10 believe there was one that wasn't all of those
11 things.

12 Q. Mr. Leinsing, I'm trying to understand
13 your definition of a person of ordinary skill in the
14 art. And you say that a person of ordinary skill in
15 the art would have at least three years of
16 experience in the field. Correct? That's what you
17 say here; right?

18 A. Yes.

19 Q. So my question for you is what is "the
20 field"?

21 A. Bone implant, anchors or screws in the
22 medical device field.

23 Q. So this is not just an example but this
24 is the field?

25 MR. LEWIS: Objection to the form.

1 A. That's some of the things within the
2 field. The field can also include other things
3 that I talked about like polymers, understanding
4 the technical nature of what is a rotational force
5 to an axial force. And experience with all of
6 those things applied to a medical device such as
7 bone implants, anchors and screws and orthopedic
8 implants which would use all those same principles.

9 Q. So apart from bone implants, anchors or
10 screws there could be other experience within,
11 quote, the field of your definition, that's what
12 you're saying; right?

13 A. Well, it depends what you mean by other
14 experience. It would need to be in the field of --
15 in the medical device field that relates to bone
16 implants, anchors and screws.

17 Q. What I'm trying to understand,
18 Mr. Leinsing, is how do you define the field? It's
19 not part of your definition is it? What is the
20 field?

21 MR. LEWIS: Objection to the form.

22 A. I think I've answered that. It's the
23 medical device field with experience in designing
24 bone implants, anchors and screws. Then I've added
25 to that saying you would have experience with

1 adhesives, experience with materials, science,
2 those types of things within the medical field
3 would be experience that a person of skill in the
4 art would have in those three years to qualify as a
5 person of skill in the art.

6 Q. But if the person does not have
7 experience in designing bone implants, anchors or
8 screws he or she could not qualify as a person of
9 ordinary skill in the art in your opinion; is that
10 right?

11 A. So I don't think that's necessarily true
12 because that would make Mr. Kofford not a person of
13 skill in the art. I think a person of skill in the
14 art could be a doctor or orthopedic surgeon that is
15 familiar with the technology but can consult with
16 an technical expert in the process of understanding
17 the technology and then qualify as a person of
18 skill in the art.

19 Q. Is that part of your definition?

20 A. I talk about it in my section of a POSA
21 in paragraph 51, 52 and paragraph 50. I talk about
22 how Mr. Kofford is a dental practitioner and that
23 prior to his work with Mr. Rudisill had no
24 experience in or qualifications relevant to the
25 mechanical engineering aspects. So together they

1 qualify as a person of skill in the art.

2 Q. Looking at your definition in paragraph
3 46, the one we just read into the record,
4 Dr. Kofford doesn't qualify as a person of ordinary
5 skill in the art under that definition; is that
6 right?

7 MR. LEWIS: Objection to the form.

8 A. Individually alone he would not. He
9 would need to consult -- that's why I said if it's
10 the reverse, I don't think we have that situation
11 here between the two experts so I did not propose
12 that reverse, but I have in other declarations
13 where it could be the reverse, you could be a
14 surgeon or oral surgeon or doctor and then consult
15 a technical person as Dr. Kofford has or the
16 reverse, be a technical person and consult with a
17 doctor. That's why I came up with the definition
18 particularly for a person like myself with a
19 technical degree.

20 Q. Looking at your definition in paragraph
21 46, does Mr. Rudisill meet that definition?

22 MR. LEWIS: Objection to the form.

23 A. I believe he would meet that definition
24 as the technical person and then he was consulting
25 Dr. Kofford which is why I came up with my

1 definition that Mr. Rudisill would not need to have
2 the specific dental implant experience or design
3 experience but working with Dr. Kofford he would
4 have enough understanding to apply his technical
5 experience and knowledge to be a person of skill in
6 the art.

7 Q. Does Mr. Rudisill have experience with
8 bone implants, bone anchors and/or bone screws?

9 A. I don't recall his CV but it's my
10 understanding he may not have and worked with
11 Dr. Kofford or I guess regardless of whether he did
12 or did not, he was able to work with Dr. Kofford
13 who did have that experience. Which is why my
14 definition is the way it is.

15 Q. But individually Mr. Rudisill does not
16 meet your definition of a POSA either; does he?

17 MR. LEWIS: Objection to the form.

18 A. He does meet it alone because he is able
19 to consult with Dr. Kofford as I said just like
20 myself.

21 Q. Mr. Leinsing, under your definition, the
22 person of ordinary skill in the art has to have at
23 least three years of experience in the field such as
24 experience with the design of bone implants, anchors
25 and/or screws. You previously testified that what

1 you mean by the field is the medical device field
2 with experience in bone anchors, bone implants
3 and/or bone screws.

4 MR. LEWIS: Objection to the form.

5 Q. Am I correct that Mr. Rudisill does not
6 have that experience?

7 A. I would need to look at his CV. If you
8 have his CV I can look at it, but it's my
9 understanding he has that experience himself or in
10 consulting Dr. Kofford to make him a person of
11 skill in the art.

12 Q. Individually, did he have this
13 experience when he invented the inventions in the
14 patents at issue?

15 MR. LEWIS: Objection to the form.

16 A. I don't recall whether I know exactly
17 what his CV is but it's my understanding that he
18 would qualify as a person of skill in the art as I
19 defined it.

20 Q. What is your basis for saying that?

21 A. Because it's my understanding he's a
22 technical person and he would then, therefore,
23 understand screws, he would understand how anchors
24 work, he would understand density, materials,
25 things that I would understand as a technical

1 person, and then to the extent he needed help with
2 bone implants or any other experience he would have
3 worked with Dr. Kofford since they're both
4 coinventors and together they would have gained
5 that experience from him to make him qualified as a
6 person of skill in the art.

7 Q. Do you have any basis of saying that
8 Mr. Rudisill at the time of the invention did have
9 experience with the design of bone implants, bone
10 anchors and/or bone screws?

11 MR. LEWIS: Objection to the form.

12 A. Considering he worked with Dr. Kofford I
13 would think he would.

14 Q. And before that?

15 MR. LEWIS: Objection to the form.

16 A. I can't opine on what Dr. Rudisill was
17 doing prior to him meeting Dr. Kofford. You would
18 have to ask Dr. Rudisill.

19 Q. Well, Mr. Leinsing, you argue in your
20 declaration that Dr. Breunski's definition can't be
21 right because it would exclude the inventors; right?

22 A. That's correct.

23 Q. You just testified that your own
24 definition would not include Dr. Kofford, that's for
25 sure; right?

1 A. That's not what I said.

2 MR. LEWIS: Objection to the form.

3 Q. Are you saying that Dr. Kofford has an
4 engineering background?

5 MR. LEWIS: Objection to the form.

6 A. I said that my definition, if we had an
7 expert in this case that was a doctor, my
8 definition would have been the reverse of mine
9 which would be a doctor in consultation with a
10 technical person would then be a person of skill in
11 the art to fill in the gaps of what Dr. Kofford
12 wouldn't know from a technical side and the flip
13 side would be that Mr. Rudisill would be a person
14 of skill in the art like myself because he would be
15 able to consult with Dr. Kofford.

16 Q. That's not what your opinion says; does
17 it?

18 MR. LEWIS: Objection to the form.

19 A. I was not asked what it would be like
20 for a doctor of orthopedic surgery because we don't
21 have that as an expert here in this case, we only
22 have Mr. Breunski and myself, and whether or not we
23 would be considered a person of skill in the art to
24 have the opinions in analyzing the '992 and '781
25 patent. If we had a surgeon like I've done in

1 other cases that was going to provide opinions then
2 I would examine that definition of a person of
3 skill in the art and provide the flip side. But I
4 do have a discussion in my declaration that talks
5 about what the backgrounds are of both the
6 inventors and how that played into my definition
7 for a person of skill in the art.

8 Q. Are you saying that your definition of a
9 person of ordinary skill in the art depends on who
10 the experts are?

11 MR. LEWIS: Objection to the form.

12 A. I think if you look at the people that
13 are the inventors as I discuss in my declaration,
14 you look at the education level of the inventor,
15 the types of problems that are encountered in the
16 art, you look at the prior art solutions to the
17 problems, the rapidity with which innovations are
18 made, the sophistication of the technology and the
19 active -- education level of the active workers in
20 the field, that's what I looked at in my definition
21 and looked at it from the technical side because
22 both myself and Breunski were coming from the
23 technical side and that we would be like
24 Mr. Rudisill in that we would then have the ability
25 to consult with a doctor like Dr. Kofford.

1 Q. If there was a doctor in the case
2 appearing as an expert, you say your definition
3 would change?

4 MR. LEWIS: Objection to the form.

5 A. My definition would not apply to that
6 doctor alone, no. A doctor alone would not qualify
7 as a person of skill in the art, that doctor would
8 have to have experience, as I mentioned, and
9 consulting with a technical person, as I mentioned,
10 or a person of skill in the art would consult with
11 a dentist or oral surgeon.

12 Q. You say in paragraph 46 that, "A POSA
13 may consult with a dentist, oral surgeon,
14 prosthodontist or periodontist who has experience
15 with dental implants and prosthetics on patients."

16 Do you see that?

17 A. Yes.

18 Q. For the record, could you explain what a
19 prosthodontist is?

20 A. I looked up the exact definition of that
21 but I believe it's a doctor who does prosthetics in
22 patients.

23 Q. Dental prosthetics?

24 A. Yes.

25 Q. And what's a periodontist?

1 A. I forget the exact definition of that.
2 It's a doctor of dentistry that has a particular
3 specialty and I can't recall right now.

4 Q. Do you recall why a POSA would consult
5 with a periodontist in this particular context?

6 MR. LEWIS: Objection to the form.

7 A. I would need to review again the scope
8 of the experience of a periodontist. I looked up
9 that in the past when I was writing this and I
10 don't recall what the specialty was.

11 Q. When forming your opinions in these
12 matters, did you consult with a dentist, oral
13 surgeon, prosthodontist or periodontist who has
14 experience with dental implants and prosthetics on
15 patients?

16 A. No. It wasn't required in my analysis,
17 the claims don't get into any kind of particular
18 features or structures that would have required me
19 to consult with that person.

20 Q. Have you ever talked to Dr. Kofford?

21 A. No.

22 Q. Have you ever talked to Mr. Rudisill?

23 A. No.

24 Q. In paragraph 50 in the second half you
25 refer to the fact that several prior art reference

1 that's in the record, not specific to dental
2 applications. Do you see that?

3 A. Yes.

4 Q. And you refer to the prior art
5 references Nino, Ruetschi, Starkey Gutterman,
6 Johnson, Berrevoets, Staniszewski and Neuhengen. Do
7 you see that?

8 A. Yes.

9 Q. The Bernhard reference is specific to
10 dental applications; right?

11 A. Yes.

12 Q. And more particular it is specific to
13 denture conversions; right?

14 MR. LEWIS: Objection to the form.

15 Q. Let me refer you to your own paragraph
16 65 in this declaration.

17 A. Yes, I know it covers denture
18 conversions, I don't recall if it discusses
19 applications of that to other denture prosthetics
20 like an individual or otherwise.

21 Q. The Poovy reference is also related to
22 dental conversions; right? Let me refer you to
23 paragraph 77.

24 A. Yes, but like Bernhard uses a different
25 technique for doing the process. And the

1 structures are different.

2 Q. The Derey reference, that also relates
3 to denture conversions; correct? I refer you to
4 your paragraph 92.

5 A. Yes, and again, it does not disclose the
6 same securement feature, particularly the temporary
7 post or threads that is disclosed in the '992 or
8 '781 patent and as claimed.

9 Q. The Gracco reference is also in the
10 dental field; right?

11 A. Yes. I think it came out in an
12 orthodontics journal but it contemplates that these
13 features would be used in other applications. But,
14 again, all of these references that you mention,
15 not a single one of them disclose the limitations
16 of the claims.

17 Q. Turning back to paragraph 50 of your
18 declaration which is Exhibit 2021.

19 A. The IPR declaration; correct?

20 Q. Yes.

21 A. Okay. I'm just saying that because the
22 PGR one has the same number.

23 Q. I'm in paragraph 50.

24 MR. LEWIS: Counsel, when we're
25 done with this line of questioning can we take

1 a break for lunch?

2 MR. REITBOECK: Sure.

3 Q. Towards the top of page 21 of your
4 declaration -- it is stamped as page 22 of 105, do
5 you see that?

6 A. Okay. Yes.

7 Q. Making sure we're on the same page.

8 Towards the top you say, "Rather, the
9 problems faced in the '992 patent's field of art are
10 fundamentally the same or similar as those faced in
11 other biomechanical applications such as the design
12 of bone implants, anchors and/or screws."

13 Do you see that?

14 A. Yes.

15 Q. One of the issues that the '992 and '781
16 patents deal with is aligning a coping to an implant
17 abutment; correct?

18 A. Correct.

19 Q. Which other biomechanical application is
20 concerned with this issue?

21 A. So I can't think of a coping with an
22 abutment but there are bone implants and anchors
23 that work in the same way for, like, in my
24 experience, the spine or the foot that have --
25 depending on the density of the bone, they will

1 either use an implant or they will use a particular
2 screw that have the fastening features that are
3 used for orthopedics or orthodontry.

4 Q. In that application, what would be
5 equivalent to the coping in the dental application
6 if anything?

7 MR. LEWIS: Objection to the form.

8 A. Well, you're trying to align the anchors
9 with the plates and the screws and then it's the
10 retention forces that are applicable. I can't
11 think of where they would have a particular round
12 coping that would be the same but a mechanical
13 engineer understands that concepts of coping,
14 because it's an alignment feature, it's a way to
15 align two separate parts such that there's only one
16 distinct position that they can be in.

17 Q. Are you aware of any other biomechanical
18 applications that are concerned with impression
19 protocols such as the open tray and closed tray
20 impression protocols we discussed earlier?

21 A. Yeah, I can't think of any other
22 application. It would be mostly dentistry that
23 would use the trays. I have my own personal
24 experience having them done to myself, as well as
25 seeing them done on others, and it's also my

1 understanding that the claims are not limited or
2 discuss any other types of trays or require a
3 particular type of tray so it would be irrelevant
4 in my analysis.

5 Q. Take a look at your declaration in the
6 PGR proceeding which is also Exhibit 2021 in that
7 proceeding. In paragraphs 49 through 64 you have
8 the section about the level of ordinary skill in the
9 art.

10 A. Okay.

11 Q. If you turn to paragraph 62. To preface
12 this, Mr. Leinsing, as in the IPR you talk about
13 your definition of the person of ordinary skill in
14 the art and then you talk about Breunski's
15 definition of the person of ordinary skill in the
16 art and then in paragraph 62 you say, "I am
17 qualified to provide opinions about how a POSA in
18 October 2018 would have interpreted and understood
19 the '781 patent and the prior art in the petition at
20 the time of the invention and the either
21 definition." Do you see that?

22 A. Yes.

23 Q. Either definition refers to both your
24 definition and Breunski's definition; yes?

25 A. Yes.

1 Q. What is the basis for you saying that
2 you would meet Breunski's definition?

3 MR. LEWIS: Objection to the form.

4 A. Because I have the experience with the
5 bone implants and screws and anchors which are the
6 same as those used in the jaw bone and in
7 particular the claims and claim limitations are all
8 within the scope of my education and experience and
9 I qualify as an exceptional person of skill in the
10 art. There's nothing that I needed to consult with
11 with the claims, consult with a doctor in dental
12 prosthetics to do my analysis.

13 MR. REITBOECK: All right, why
14 don't we take a break for lunch.

15 (Time noted: 12:35 p.m.)

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A F T E R N O O N S E S S I O N

(Time noted: 1:45 p.m.)

KARL LEINSING, resumed and testified as follows:

EXAMINATION (Cont'd.)

BY MR. REITBOECK:

Q. Mr. Leinsing, welcome back. I would like to turn to paragraph 110 in your IPR deposition 2021, Exhibit 2021. And in that section all the way through paragraph 122 we discussed the issue of claim construction.

A. What number?

Q. Section 110, we can start at paragraph 114.

A. You said paragraph 114?

Q. Yes.

A. Okay.

Q. You say, "First, the institution decision construed what had caused the different thread limitations too broadly finding that, 'the threads of the claimed temporary screw need only be different in pattern or profile compared to the definitive screw.' This is a broad concept and provides a generic claim element."

Then you cite the institution decision

1 at 28 then you say, "However, that construction
2 ignores critical functional limitations in the
3 claims themselves relevant to the claim construction
4 as well as to the number of disclosed species
5 necessary to understand the claimed genus claimed."

6 Do you see that?

7 A. Yes.

8 Q. So first of all let me ask you, in
9 providing your opinions in this declaration, did you
10 apply what you describe as the board's understanding
11 in this paragraph or did you apply your own
12 understanding?

13 MR. LEWIS: Objection to the form.

14 A. Well, I applied both. I applied my
15 understanding to the legal standards and I applied
16 my understanding of what the board said in the
17 quote.

18 Q. You say that the board made a mistake in
19 claim construction; right?

20 A. Correct.

21 Q. First of all, what is your understanding
22 of the board's construction?

23 A. Well, they're saying that the term
24 "different thread" is indefinite. They're saying
25 it's a very broad term and that -- what they said

1 that's quoted here in paragraph 114 and what I'm
2 saying here in my declaration is that they're
3 ignoring other elements of the claim that limit
4 that -- the screw as claimed by the '992 and '781
5 patent.

6 Q. When opining, for example, on the issue
7 of obviousness, which understanding did you apply,
8 the board's or yours?

9 MR. LEWIS: Objection to the form.

10 A. I applied my understanding of the legal
11 standards as a person of skill in the art reading
12 the claims and the terms as I understand them in
13 view of the specification which includes the file
14 history, written specification and figures.

15 Q. And that understanding differs from the
16 one that you say the board expressed; is that
17 correct?

18 A. I don't think it's entirely correct
19 because I think the board is not doing an
20 invalidity analysis here that I'm talking about,
21 they're just taking a claim construction or
22 understanding of an element without viewing the
23 other elements of the claim, and by doing that and
24 not seeing all of the specifications of the patent,
25 I think they've improperly understood the -- what

1 it means to have a different thread.

2 Q. So you're saying that the limitation
3 describing the different thread pattern or thread
4 profile is to be understood more narrowly than what
5 you say the board understood it to be; is that
6 correct?

7 A. Partially correct. It's not just
8 looking at the term, you can't look at the term in
9 a vacuum, you need to look at it in view of all of
10 the other elements of the claim, and as I explain
11 here, there's other parts of the claim element and
12 the specification that talks about what that
13 temporary screw would look like and what its
14 functional requirements would be and its structural
15 requirements.

16 Q. You make a similar point in the PGR
17 proceeding starting at paragraph 104. Do you want
18 to look at it?

19 A. Yes, I recall making a similar argument.

20 Q. Would your answers be the same in the
21 context of the PGR?

22 A. Give me a second just to review it.

23 Q. Sure. Allow me to refer you to
24 paragraph 104 which seems to be the analogous
25 section here.

1 A. What was the paragraph you said?

2 Q. Paragraph 104.

3 A. It ends at which one?

4 Q. That section ends at paragraph 114.

5 A. Yes, my answers would be the same with
6 the PGR declaration I think having a little more
7 detail and incorporation of the citations that I
8 have in the IPR declaration.

9 Q. Do I understand correctly that when you
10 say --

11 A. Are you reading from the PGR?

12 Q. Why don't we start in the IPR. In
13 paragraph 114. Which is what we read into the
14 record before.

15 When you say that the board ignores
16 critical functional limitations, my question to you
17 is when you opined on the issue of the written
18 description and obviousness, did you apply your
19 understanding of the claims or did you apply the
20 board's understanding of the claims or what you
21 perceived to be the board's understanding of the
22 claims?

23 A. Yeah, I think I answered that before. I
24 applied my understanding of the claims as a person
25 of skill in the art understanding the terms in view

1 of the specification that includes the file
2 history, written text and figures and incorporating
3 not just one term or looking at one term, I look at
4 the one term in view of all of the elements of the
5 claim.

6 The board was looking at one particular
7 term and ignoring critical functional limitations
8 of the rest of the claim. So I would say that when
9 I say I'm doing the invalidity analysis, I was
10 viewing it with my understanding which was easy to
11 understand, it was definite, I could see where the
12 boundaries were of the terms when you take into
13 account all of the elements of the claim.

14 Q. Understood. And the same applies for
15 the PGR opinions?

16 A. Yes.

17 Q. Let's look at paragraph 118 in the IPR
18 declaration. In paragraph 118 you say, "The board's
19 constructions for what it calls the different thread
20 and the axial force release limitations required the
21 '992's patents independent claims to be limited to
22 the asymmetric split post structure shown in Figure
23 75. This is incorrect in light of the intrinsic
24 evidence."

25 Do you see that?

1 A. Yes.

2 Q. First of all, can you explain this
3 opinion?

4 A. So, yeah, it appears when reviewing the
5 decision from the board that they're focusing
6 incorrectly on Figure 75 and ignoring the other
7 intrinsic evidence which is the other options for
8 different threads. You can have either threads
9 going in the other direction as even described
10 within the written description for Figure 75, you
11 can have a split or no split, you can have an
12 interference fit and other evidence that I describe
13 in my declaration.

14 Q. But you understand the board to construe
15 the different threads and axial force release
16 limitations to be limited to the structure shown in
17 Figure 75?

18 A. That was my understanding to what they
19 were saying, yes.

20 Q. When you gave your opinions on written
21 description and indefiniteness and obviousness in
22 these matters, did you apply the board's
23 understanding as you perceived it to be or did you
24 apply your own understanding of the claims?

25 A. I wouldn't put all three of those things

1 in one bucket. I can't answer that because the
2 answer would be different for each one. I think
3 when looking at written description, I reviewed
4 what the board I think understood that to be and
5 then I explained what I saw for written description
6 and that the claims were well supported all the way
7 back to the early applications of the patents.

8 Then when it comes to indefiniteness,
9 I'm looking at what it appears the board's
10 understanding is to then opine on how they have
11 been incorrect based on the way the claims were
12 written.

13 And then when it comes to invalidity
14 analysis, I applied my complete understanding of
15 the legal standards and applied those to the
16 claims, the claim constructions and the
17 specification as I discussed earlier.

18 Q. Is it your understanding that the
19 construction of a claim can be different in the
20 context of obviousness, indefiniteness or written
21 description or does it have to be the same?

22 A. To the extent you're asking me a legal
23 question, I cannot answer, I'm not an attorney, but
24 it's my understanding that they would need to be
25 the same for the analysis.

1 Q. Okay, let's assume you're right on that.
2 My question to you is you seem to be saying that the
3 board's construction here is wrong and you have a
4 different understanding how the claims should be
5 construed.

6 My question for you is when opining on
7 the ultimate issues of obviousness, indefiniteness
8 and written description, which construction did you
9 apply, what you understood to the board's
10 construction to be or your own construction?

11 A. Well, first, to be clear, I think that
12 we're talking about taking the plain and ordinary
13 meaning of all the terms. The problem is that then
14 the board seems to have taken the plain and
15 ordinary meaning slightly different than what I
16 think is proper in view of the intrinsic evidence.

17 So in my analysis and the reasons for my
18 comments back against the board are their comments
19 on indefiniteness and lack of written description,
20 I'm applying my understanding of the claim terms to
21 have those opinions to why their understanding is
22 incorrect, and then when I do my analysis of the
23 prior art, it's under my legal understandings and
24 taking a completely independent view of the board
25 or the petitioner to come to my opinions.

1 Q. Okay, you have what seems to be a
2 parallel section in your PGR declaration starting at
3 paragraph 115.

4 A. Okay.

5 Q. Would your answer be the same as to the
6 PGR declaration as with the IPR declaration?

7 A. This particular section adds a little
8 bit more to it in talking about claim
9 differentiation, but that I would still apply the
10 same answers which would be my understanding of the
11 legal standards in coming up with these opinions.

12 Q. In paragraph 125 --

13 A. Of the PGR.

14 Q. Yes, of the PGR declaration, you start
15 out by saying, "Third, the board's implicit claim
16 construction contradicts the specification of the
17 '781 patent. The specification of the '781 patent
18 expressly contemplates alternate embodiments."

19 Do you see that?

20 A. Yes.

21 Q. And then you point to various
22 descriptions in the specifications and in paragraph
23 126 you conclude "The specification of the '781
24 patent clearly describes examples of alternate
25 embodiments, the board's implicit construction is

1 wrong because it directly contradicts the ordinary
2 and customary language of the specification."

3 Do you see that?

4 A. Yes.

5 Q. What exactly is the board's "implicit
6 claim construction" that you criticize here?

7 A. It's, again, the focus on Figure 75. I
8 think the petitioner has confused the board
9 improperly indicating that Figure 75 is the only
10 embodiment that's described by the '781 and '992
11 patent and that's just simply not correct.

12 Q. So you understood the board to construe
13 the claims to be restricted to Figure 75?

14 A. Yes, that's my understanding from
15 reading what the board was saying and which is why
16 we're talking about the application patents or the
17 prior patents for the priority date and then why
18 we're talking about the indefiniteness and written
19 description issues.

20 Q. When you provided your opinions in your
21 declarations, you applied not the board's implicit
22 claim construction as you understood it but your own
23 understanding of the claims; fair?

24 A. Yes. I took my understanding of the
25 claims which I believe is the proper understanding

1 because you need to look at the terms within the
2 claims as a whole and not just a singular element
3 in isolation.

4 Q. Let's turn to paragraph 135 of your IPR
5 declaration.

6 To put this in context, Mr. Leinsing,
7 you provided various descriptions about -- you
8 provided various opinions about the issue of written
9 description; yes?

10 I'm putting this in context,
11 Mr. Leinsing. We're now in your section about
12 written description. Okay?

13 A. Okay.

14 Q. You opined, if you look at paragraph
15 133, you opined that the priority applications
16 disclose at least three species of the broader genus
17 claimed.

18 A. I'm sorry, you lost me. Where are you
19 reading from?

20 Q. I'm reading from paragraph 133.

21 A. Okay. Okay, I see it.

22 Q. Do you remember giving those opinions?

23 A. Yes.

24 Q. The first of those three species you
25 call temporary screws with asymmetric threads;

1 right? That's the first section of this chapter?

2 A. Correct.

3 Q. You referred to this in the morning
4 already. You talk about it here in paragraph 135.
5 There's a sentence in the '361 application and also
6 in the '992 patent that talks about the threads
7 being designed to provide engagement with the
8 implant abutment threads through axial motion in the
9 opposite direction to the arrow shown in Figure 75.

10 Do you see that?

11 A. Where are you reading from?

12 Q. Paragraph 135.

13 A. Oh, I'm reading 134. Sorry.

14 Okay. I see that. And I recall that.

15 Q. That is a sentence that is part of the
16 paragraph about Figure 75; right? We saw it in the
17 morning?

18 A. Yes, that's one -- I think there's
19 basically two embodiments here.

20 Q. That's the version that you push in;
21 correct?

22 MR. LEWIS: Objection to the form.

23 A. That's one of them that can be pushed
24 in. There are others that are described.

25 Q. In paragraph 135, on the next page, we

1 see a reproduction of Figure 75 on the left; right?

2 A. Correct.

3 Q. And then there's a new figure on the
4 right. That figure is not in the patent; is it?

5 A. No. But it's described when you look at
6 the section in the patent that talks about Figure
7 75.

8 Q. Did you create this figure?

9 A. Yes, it was either me or counsel helped
10 me with their graphics people, I don't recall.

11 Q. You or somebody on your behalf created
12 this?

13 A. Yes, to basically describe what is
14 written in the text of the discussion for Figure
15 75.

16 Q. The text doesn't describe the thread's
17 turn out to be a reverse buttress thread; does it?

18 A. Well, it describes it in column 23, line
19 23, that although the threads could be designed to
20 provide an engagement with an implant abutment
21 threads through axial motion in the opposite
22 direction. So a person skilled in the art reading
23 that would say if you're going to do the opposite
24 direction then you would do the buttress threads
25 also in the opposite direction.

1 Q. You would conclude that as a person of
2 ordinary skill in the art?

3 A. Yes.

4 Q. It's not written here; is it?

5 A. It's saying to -- as we were talking
6 about earlier, it could be designed to provide
7 engagement with the implant abutment threads
8 through axial motion in the opposite direction. So
9 without imparting any additional design features to
10 the threads, if I turn the arrow around and I want
11 to design those threads to work in the opposite
12 direction then I would draw it in the opposite
13 manner.

14 Q. That would be obvious to you?

15 MR. LEWIS: Objection to the form.

16 A. It's not an obviousness analysis, it's a
17 reading what the text says and drawing the picture
18 of what I read.

19 Q. Now focusing on the figure you created
20 in paragraph 135, the one on the right, in paragraph
21 137 you say that -- and I'm looking at the fourth
22 line, "The geometry of such a reverse buttress
23 thread could be readily designed to 'release' the
24 threading after 'axial force.'"

25 Do you see that?

1 A. Yes.

2 Q. How would the screw we see in paragraph
3 135 on the right be released? How would that work?

4 A. So we talked about this a little bit
5 this morning and I think one of the errors that
6 keeps happening is the petitioner is super focused
7 on Figure 75 and not looking what the description
8 of Figure 75 is really talking about, and it talks
9 about serrations, contemplating serrations and then
10 also talks about the interference fit. So if you
11 were to do the reverse buttress, those particular
12 threads or serrations could interfere with just the
13 minor diameter of the female thread in the abutment
14 thereby facilitating the axial release and then the
15 reverse buttress would facilitate the insertion.

16 Q. So you push this in and it interferes
17 with the minor diameter of the female abutment
18 thread?

19 A. Correct.

20 Q. In particular, the threads of the
21 temporary screw interfere with the female threading
22 of the abutment; correct?

23 A. Correct.

24 Q. And then you pull this out what happens?

25 A. You pull it out.

1 Q. Do the threads bounce back to a wider
2 diameter than before?

3 A. Well, if there's an interference then
4 the interference will cause deflection on the legs
5 if it's a slotted fastener, keeping in mind you can
6 do it with or without the slot, and there will be
7 some deformation of the threads if you choose the
8 polymer option as described in the specification.

9 Q. When you pull it out, though, would the
10 male threads of this temporary screw widen and then
11 get stuck in the female threading?

12 A. Not if they don't align or engage where
13 the threads are different than the female threads.
14 That's what's unique about this patent is a person
15 skilled in the art would have thought you put
16 matching male threads to matching female threads
17 but that's not what's being done here, it's using
18 post configuration for the grade alignment but then
19 not creating such a tight engagement --

20 (Reporter clarification.)

21 A. I'm sorry, I lost it, I got interrupted.
22 I think you were asking -- I will try to
23 start over. I will try to do it slow.

24 What's different about this patent and
25 unique is that a person of skill in the art looking

1 at this is not expecting the male -- is expecting
2 the male temporary -- I'm sorry, strike that. Let
3 me start over.

4 The male thread is not engaging with the
5 female thread as you would expect. So those
6 threads, and they don't have to be threads keep in
7 mind, it talks about serrations, so as long as
8 those don't align up with the threads of the female
9 abutment then they won't get snagged on the
10 threads, or even if they do partially that would be
11 fine to create that retention force if needed but
12 they don't have to, that's what's being taught by
13 the '992 and '781 patent, you're just trying to
14 create alignment with just enough retention to hold
15 it in place but allow it to be removable.

16 Q. Okay. Looking at the screw that you
17 depicted on the right of paragraph 135, you said
18 you -- once you push this in the male threads --
19 because the patent also talks about an interference
20 fit, the male threads would create an interference
21 fit with the female threads of the abutment; right
22 so far? Correct?

23 A. Yes. Without necessarily engaging
24 within the grooves of the thread.

25 Q. Right. And --

1 A. Of the female thread.

2 Q. Got it. When you say that there would
3 be an interference fit, that means that the legs
4 would slightly come inward; is that right?

5 A. If you chose the embodiment with the
6 slot then the legs would come inward slightly and
7 then there would be slight deformation of the
8 threads or serrations if you choose a plastic
9 temporary post or thread.

10 Q. When you talk about deformation, are you
11 talking about permanent deformation or elastic
12 deformation?

13 A. I don't think it would matter but it
14 would be -- it would depend on the polymer you
15 selected if it did matter, but they would deform,
16 whether elastically or plastically.

17 Q. Would every type of plastic deform?

18 A. Depends on the force you're looking at
19 and it depends on the plastic.

20 Q. Which types of plastics would deform?

21 MR. LEWIS: Objection to the form.

22 A. Almost every polymer that I know will
23 deform at some point, at some load or deformation.

24 Q. The range of the forces we're talking
25 about here in this particular use, which types of

1 plastics would deform?

2 A. There's a lot of different plastics that
3 would deform. I think it contemplates -- it
4 mentions polymer -- I'm not sure if I'm remembering
5 this spec or another one but there's one that says
6 PEEK as a material, that's polyetheretherketone.
7 But there would be other polymers and all of the
8 polymers that I could think of that you would use
9 for such a temporary screw would deform if it was
10 under load, it would deform at least somewhat.

11 Q. Would they deform sufficiently to for
12 the screw to slip out?

13 MR. LEWIS: Objection to the form.

14 A. You could -- yes, you could design it as
15 taught by the '992 and '781 patents to do that and
16 namely the technique that's taught that's different
17 in the '992 and '781 is where you don't have a
18 matching thread pattern or pattern that is
19 different than the female pattern in the abutment.

20 Q. To be clear, the patents do not teach
21 anything about the threads deforming; do they?

22 MR. LEWIS: Objection to the form.

23 A. I disagree.

24 Q. Why is that?

25 A. Because it teaches about interference

1 fit and the screws being made of a polymer; so if
2 you have an interference fit and you have a polymer
3 then you're going to have deformation.

4 Q. That's your conclusion?

5 A. That's a science fact.

6 Q. But what I'm saying is the patents do
7 not expressly talk about the threads deforming; do
8 they?

9 A. I would have to search the patent to see
10 if it uses that term, but it is very clear to a
11 person of skill in the art that if you have an
12 interference fit and you have a polymer temporary
13 post or fastener it will deform. It has to.
14 Especially if the abutment is metal.

15 Q. Returning to the figure of paragraph 135
16 on the right, did I understand correctly, when you
17 speak of the threads deforming, you think that is an
18 elastic deformation as opposed to permanent
19 deformation? I think you called it plastic
20 deformation?

21 A. Well, I don't think it matters. You
22 could design it either way. I think the claims are
23 silent as to what occurs when there's an
24 interference fit if that's the embodiment that you
25 choose to achieve the claimed invention.

1 Q. My question, Mr. Leinsing, is if you
2 pull out the screw that you have depicted on the
3 right of paragraph 135 from a position where there
4 is an interference fit between the male threads of
5 the screw and female threads of the abutment, once
6 you pull this up a little bit the threads would, to
7 some degree, go into the female threading of the
8 abutment, or am I wrong about that?

9 A. Not if you choose the male threads that
10 have such a pitch that they wouldn't line up, they
11 would not necessarily do that. And that's
12 something that a person skilled in the art wouldn't
13 have thought of by doing this. You would think
14 normally you would put a male thread matching to a
15 female thread. And that's what is unique here,
16 it's saying a different thread of the temporary
17 screw than the definitive screw or the abutment to
18 achieve that alignment and ease of axial removal.

19 Q. Let's move onto paragraph 145. We're in
20 the chapter about the second of the three species
21 that you opine upon.

22 You call them temporary screws with
23 different symmetric threads; right?

24 A. Correct.

25 Q. Those are screws that, in your opinion,

1 have symmetric threads but a slot; correct?

2 A. Yes, that's one of the species that I
3 talk about here or embodiments.

4 Q. Looking at paragraph 147, that's where
5 you depict such a screw; correct?

6 A. Correct.

7 Q. Do I understand correctly that the
8 figures on the left and on the right are Figure 75
9 and Figure 70 respectively from the patent?

10 A. That's correct.

11 Q. And the middle figure is not in the
12 patent but you created it or somebody under your
13 supervision?

14 A. That's correct. With the understanding
15 of the written specification of the patent.

16 Q. What do you mean by the last caveat?

17 A. The patent teaches how you can combine
18 these embodiments to arrive at what I've depicted
19 there.

20 Q. Are you referring, as you did in the
21 morning, to the sentence in column 7 line 67 through
22 column 8 line 3, we had it in the morning, I will
23 read it into the record, "Furthermore the particular
24 features structures or characteristics may be
25 combined in any suitable manner in one or more

1 embodiments without the limitations," is that what
2 you are referring to?

3 A. Yes, that and what I think the
4 petitioner office has mistaken is in the actual
5 description of Figure 75 in column 23 it also
6 shows, it says here on line 14, it says Figure 75
7 shows a temporary fastener with a head portion and
8 an attachment post portion. Then it goes on and
9 says the attachment post portion 39 is shown as
10 having a slot 41 which is what I've drawn and
11 asymmetric threads or serrations. So what I've
12 drawn there in the middle has serrations and a
13 slot.

14 Q. In the middle what you have drawn in the
15 middle, those are symmetric threads; right?

16 A. Yes. Or serrations.

17 Q. Is threads and serrations the same
18 thing?

19 A. They can be but serrations have a
20 particular pitch. They can just be serrations with
21 out any particular pitch to them.

22 Q. Can you explain that? What does that
23 mean?

24 A. That means they wouldn't have any angle
25 or helical angle to them.

1 Q. You describe the screw as having
2 symmetrical threads; don't you?

3 A. Symmetrical threads which are also
4 serrations.

5 Q. Which are also serrations?

6 A. Correct.

7 Q. You've got me completely confused now.
8 What's the difference between threads and
9 serrations?

10 A. So threads will have a helical angle to
11 them where serrations can but do not have to and
12 they can be separable threaded or serrated
13 portions. If you look at column 23, line 11, it
14 talks about Figure 75 some more, it says, "In
15 alignment the fastener post 39 may contain a
16 separable threaded or serrated portion."

17 So that's what I mean by -- you can
18 have -- if the threads are discontinuous and then
19 they will create like a serrated portion but either
20 a separable threaded part or serrations. So
21 serrations can be like a segment of a thread or
22 they can be just a straight like serration without
23 any particular helical angle to them.

24 Q. Without a helical angle you couldn't
25 screw them in; right?

1 A. That's not true because the female --
2 that's what so unique about these patents when you
3 look at it, you expect and want a male thread to
4 match the female thread but that's not what's being
5 taught here. The female thread because of the
6 minor diameter creates that driving in ability of
7 the temporary screw.

8 You think by reading this, and this is
9 where everybody is making the mistake, the
10 petitioner is making the mistake, the patent office
11 is not seeing this, is that you take a male screw
12 and you think it needs to have the same threads but
13 what's being taught here is you can actually screw
14 in something without a thread, interference thread
15 that's just a shaft and by screwing that into the
16 female thread, because it has those threads in
17 there and they're sharp, it will drive in just like
18 a regular screw even though the male thread does
19 not have threads. It could have serrations, it
20 could have a very different thread and it will
21 still turn in rotationally but also allows axial
22 removal.

23 That's what's so great about these two
24 patents.

25 Q. Now in discussing this particular

1 species in paragraph 144 to 149, you talk about
2 symmetric threads interrupted by a slot; correct?

3 A. Correct.

4 Q. That's what you depict in the figure of
5 147?

6 A. Yes, that's what I describe in 147.

7 Q. The only time that serrations are
8 mentioned in the patents are in reference to Figure
9 75; correct?

10 MR. LEWIS: Objection to the form.

11 A. I would need to read it all. I know it
12 mentions serrations quite a few times so I don't
13 know if it's just on Figure 75. But that's the
14 point I was trying to make with the earlier
15 questions, Figure 75 has lots of different
16 embodiments to it when you actually read it, not
17 just look at the picture.

18 MR. REITBOECK: Can we take a short
19 break?

20 MR. LEWIS: Sure.

21 (Recess taken.)

22 BY MR. REITBOECK:

23 Q. Mr. Leinsing, let's move to the
24 interference fit as you discuss it in your report
25 starting in paragraph 150 in the IPR declaration.

1 We talked about it several times already. That's
2 the one that's discussed at the bottom of column 24;
3 right?

4 A. Yes, roughly around line 53 where I
5 describe it in my declaration.

6 Q. You start discussing this in paragraph
7 150 of your IPR declaration?

8 A. That's correct.

9 Q. And you describe --

10 A. My IPR declaration.

11 Q. IPR declaration. Yes.

12 And you describe that the interference
13 fit is one of the approaches, alternative approaches
14 for engaging a temporary attachment post with
15 abutment threads through axial insertion without
16 rotation; right?

17 A. You could insert it without rotation but
18 you also put it in with rotation.

19 Q. It's described as being pushed in;
20 right?

21 A. Let me check that again.

22 Yeah, it describes that as being an
23 axial insertion, but a person skilled in the art
24 reading that would realize you could also turn that
25 in for the reasons I mentioned earlier, the threads

1 or the minor diameter of the female threads would
2 allow you to turn such a post and it would also aid
3 in insertion and allow you to be more precise with
4 the securement.

5 Q. Got it. But it's described as being
6 axially inserted which in common parlance means you
7 push it in; correct?

8 A. Yes, but again, it could be turned in as
9 well.

10 Q. I get that.

11 Turning to paragraph 155 in your
12 declaration in the IPR. You start out by describing
13 the post as a, quote, polymeric post. Do you see
14 that?

15 A. Yes.

16 Q. What makes you think that the post is
17 polymeric?

18 A. Well, that's one of the options
19 described in the '992 patent in column 24 line 3.

20 Q. In column 24 line 3 you said?

21 A. Yes.

22 Q. Same line mentions metal as a material.
23 Could an interference post be made of metal?

24 MR. LEWIS: Objection to the form.

25 A. Potentially. It wouldn't be my first

1 choice. If you had a stainless screw that was
2 softer or would share the deformation or elastic
3 deformation between the male and the female but I
4 think it would be more applicable and a person
5 skilled in the art would understand that a
6 polymeric post would be a better first choice.

7 Q. Could the post in the interference be
8 ceramic?

9 A. I wouldn't think so because ceramics are
10 fairly incompressible and have an interference fit
11 like that with a female thread I don't that -- that
12 would not be my first choice, but it does mention
13 that as an option.

14 Q. If you have a metal-to-metal
15 interference fit which is technically possible; yes?

16 A. Yes.

17 Q. If you have a metal-to-metal
18 interference fit, would the metal post be elastic
19 and create a shallow male thread as you describe it
20 in paragraph 155?

21 A. At a very small microscopic level it
22 would as it's being deformed. But that
23 interference would be very small, in my opinion,
24 which, again, is why I would choose a polymer
25 option as my first choice.

1 Q. Now at the bottom of page 69 in your
2 declaration you have a figure with a red rectangle.
3 Do you see that?

4 A. Yes. That's depicting the temporary
5 post or thread. I guess more the post, temporary
6 post.

7 Q. Temporary post in the interference fit?

8 A. Correct.

9 Q. I take it you or someone under your
10 supervision created this diagram?

11 A. Yes. As directed by the specification
12 of the patent. Particularly the part of the
13 specification in column 24 as I talk about in the
14 previous paragraphs.

15 Q. I understand your opinion to say that
16 once this polymeric post is inserted into the female
17 abutment there would be a shallow male thread; yes?

18 A. Yes, that gets formed by the deformation
19 which is caused by the interference between the
20 two.

21 Q. Before you insert the post, the post
22 would not have a thread at all; would it?

23 A. It could, as we talked about earlier,
24 but I believe that the first -- the description
25 that was talked about in the interference was no

1 threads, but let me read that again please.

2 Yeah, all it says is with an
3 interference fit. So I think you could achieve
4 that either with a straight post with some small
5 threads or a different kind of thread than the
6 female threads of the abutment and still achieve
7 the described invention.

8 Q. Take a look at paragraph 157 of your
9 declaration in the IPR.

10 A. Okay.

11 Q. You say, "A cylindrical post made of
12 plastic with the right diameter could be screwed
13 into the abutment's female threads and would deform
14 to engage the abutment to a predetermined torque,"
15 et cetera, et cetera.

16 Do you see that?

17 A. Yes.

18 Q. Why do you say that the post would
19 deform to engage the abutment to a predetermined
20 torque? What does that mean?

21 A. That means a person of skill in the art
22 could determine what that torque would be based on
23 the amount of interference. So that's where you
24 would take a couple different sizes and then you
25 would try it to what the torque would be and then

1 what the release force would be and then you would
2 be able to quickly come up with a temporary post or
3 fastener that would be great for alignment and
4 release easily with axial force.

5 Q. What is that opinion based on? Your
6 knowledge as a mechanical engineer?

7 MR. LEWIS: Objection to the form.

8 A. Well, it's based on the knowledge of
9 what the patent is teaching me. I would normally
10 put in a screw that matches the threads of the
11 female, but it's talking about doing interference
12 fits and having a temporary screw with threads that
13 are different, or in this case we're talking about
14 interference with the post, it's teaching me that
15 interference and then made me realize that you
16 could actually turn this post with either small
17 threads that were different than the abutment or
18 even just a straight post and it would actually
19 work.

20 Q. Have you looked into the question what
21 torque would be required to screw a plastic post
22 like this into an abutment?

23 A. No. The claims are silent with the
24 amount of torque that you would need so that wasn't
25 required in my analysis, but my personal

1 experience, I've worked with plastic screws in the
2 past so I understand how if you use a plastic screw
3 and then you accidentally cross thread it what that
4 feels like.

5 Q. In paragraph 158 you say, "Rotating the
6 temporary screw into position to achieve this
7 interference fit is preferred over axial insertion
8 without rotation."

9 Do you see that?

10 A. Yes.

11 Q. That's your opinion as a person of
12 ordinary skill?

13 A. I think that's my opinion from reading
14 the specification as a person of skill in the art.
15 I believe it talks about that too, about preferably
16 rotating the temporary screws and then when it
17 talks about interference putting the two together
18 and understanding that in order for this to be
19 removed axially and to be able to be precisely
20 inserted that rotating, as it mentions, is
21 preferred and I would agree.

22 Q. But, Mr. Leinsing, you don't disagree
23 that the patent describes the interference fit as
24 being pushed in as we talked about before; right?

25 MR. LEWIS: Objection to the form.

1 A. It talks about that and then, like I
2 said in column 7 and 8 where you combine the
3 teachings, it's saying it's preferable to rotate
4 these things in for alignment in more precise
5 control of the insertion. So you're not going to
6 ignore other teachings. You're still talking about
7 Figure 75. Once again, Figure 75 is discussed.
8 It's talking about interference where the
9 petitioner is ignoring all of these other teachings
10 when it even specifically mentions Figure 75.

11 Q. And you're referring to the sentence in
12 the specification at column 24, line 51 that says,
13 "The split post bottom structure shown in Figure 75
14 which allows axial extraction"? Is that what you
15 are referring to?

16 A. Yes. And onward where it says, "Can
17 also be used for axial insertion," and then it
18 says, "Similarly an interference fit between the
19 bottom of the post with the threads may also be
20 designed to provide sufficient engagement to
21 provide adequate alignment and fixing of the coping
22 for pick-up bonding process as described earlier
23 for non-rotary extraction of the post. It is not
24 necessary to have the extraction force of the post
25 abutment thread interfere greater than the force

1 required for relative movement of the coping or tap
2 with the upper end of the post." Then it goes on.

3 That's in combination with the rest of
4 the discussion on Figure 75 that talks about
5 preferably rotating the temporary fastener in for
6 insertion. It makes more sense to, it's more
7 comfortable for the patient to rotate something
8 like that in versus push against the patient's jaw
9 to insert it. So I agree with what the patent
10 says.

11 Q. Let's take a look at paragraph 139 in
12 your declaration, Mr. Leinsing.

13 A. The IPR one?

14 Q. IPR, yes.

15 A. Okay.

16 Q. All the way through paragraph 143 you
17 address the issue whether it has to be a slot or
18 not; fair? Do you remember that?

19 A. Yes.

20 Q. In paragraph 140 you say, "As a
21 mechanical matter the temporary screw can properly
22 function (screw in and then release the thread)
23 without any split post structure."

24 Do you see that?

25 A. Yes.

1 Q. In turning to page 61 of your
2 declaration which is at the bottom of paragraph 142.

3 A. Which paragraph are we --

4 Q. Paragraph 142.

5 A. Okay.

6 Q. At the end of that paragraph you have
7 two figures.

8 A. Okay.

9 Q. To the left is Figure 75; right?

10 A. Yes.

11 Q. And to the right am I right that this
12 figure is not from the patent but that you or
13 someone under your supervision created it?

14 A. It's as described by the patent and I
15 drew there what was taught by the patent.

16 Q. Okay. So you created the figure, that's
17 all I'm asking.

18 A. But it's described in writing in the
19 patent. Or text.

20 Q. So you're saying -- to be clear, this is
21 a temporary screw with a buttress thread but no
22 slot; yes?

23 A. That's correct, like all the other
24 temporary screws that don't have a slot.

25 Q. And you're saying that is described in

1 the patent?

2 A. Yes.

3 Q. Where?

4 A. It's showing all of the different
5 configurations for a temporary screw, and then in
6 column 8 it says you can combine each of the
7 different teachings and then in combination with
8 the additional comments of interference fit for
9 Figure 75, if you're going to create more of an
10 interference fit then you would delete the slot.

11 Q. In the absence of the slot you take from
12 the embodiments a little further in the beginning of
13 the patent; is that fair?

14 MR. LEWIS: Objection to the form.

15 A. Can you repeat that question please.

16 Q. The absent of the slot, from which
17 embodiment are you taking that?

18 A. Almost every other embodiment. I think
19 just about every temporary screw or post is drawn
20 without a slot except for the one in Figure 75, and
21 then Figure 75 it talks about the interference fit
22 that then would teach a person of skill in the art
23 that if you want to create more of an interference
24 fit you delete the slot.

25 Q. And the way the screw, the one we see on

1 the right of paragraph 142, would work is that you
2 create that interference fit between the male
3 buttress thread of this temporary screw and the
4 female thread of the abutment threading; is that
5 correct?

6 A. To be more accurate I would say that the
7 buttress thread of this male temporary screw would
8 be an interference with the minor diameter of the
9 threads of the female -- female threads of the
10 abutment.

11 Q. That's interference fit --

12 A. It's a different thread. That's what is
13 key here, between the two, that's what allows it to
14 axially be removable.

15 Q. The interference fit you mention, that's
16 coming out of the bottom of 24 again; correct?

17 A. Correct.

18 Q. Applying the forces that are -- applying
19 roughly the range of forces that are in use here in
20 using this system, are there any polymers that would
21 not deform?

22 A. I think a reasonable polymer that you
23 would select, I can't think of one that would not
24 deform to at least some degree.

25 Q. There are hard plastics; right?

1 A. Yeah, but not as hard as the steel
2 abutment. Or metal I should say.

3 Q. If you made this screw that you depicted
4 on the right of paragraph 142, if you made it out of
5 PC -- do you know what PC is?

6 A. Polycarbonate.

7 Q. That's a hard plastic; is that right?

8 A. It's not very hard. It's not harder
9 than -- if you look at the Young's modulus or the
10 modulus elasticity of that versus metal or
11 stainless steel, it would be softer, which is why I
12 keep getting pits on the headlights of my car.

13 Q. What is a hard plastic?

14 A. It would be in a range of what I think
15 would be unreasonable. It would be either liquid
16 crystal polymer or polysulfone or something glass
17 filled that would be extremely hard, but it would
18 still be softer than metal from my memory.

19 I think this is all sort of irrelevant
20 to the claims because it's not particular to that.

21 Q. You claim that the threads of the
22 temporary screw could deform; right?

23 A. Not just could, I think it would and
24 that's what you would want as a person skilled in
25 the art reading the specification so that you would

1 have some retention force and alignment but yet be
2 still easily removable, and you would not want to
3 deform the abutment threads because those are the
4 threads that are then -- become permanent and then
5 need to be sufficiently engaging to the definitive
6 screw. You don't want to damage them in any way.

7 Q. So if you look at the screw of paragraph
8 142 on the right, in your theory the threads would
9 deform sufficiently for the screw to slip up; fair?

10 A. With the different threads of the
11 temporary screw inside the female threads of the
12 abutment, those buttress threads or asymmetric
13 threads would deform, it would already be deformed
14 and then that amount of interference would be just
15 enough to hold it and just enough to align it but
16 then be low enough to remove it. Low enough in
17 axial retention force.

18 Q. So once you stick this in there's an
19 interference fit and the threads hold it to the
20 female threading of the abutment by way of that
21 interference fit, once you pull it out the threads
22 deform a little more for this thing to slip out?

23 MR. LEWIS: Objection to the form.

24 Q. That's how you see it?

25 A. They may but they won't necessarily have

1 to.

2 Q. How else would the thing come out if
3 there's no slot?

4 A. Well, there can't be slots, that's the
5 point, it allows for alignment and so the
6 threads -- if they're -- say the threads on the
7 temporary screw are -- because they're different
8 and the pitch is different so they don't go inside
9 the threads of the female threaded abutment then
10 the amount of deformation that's at the time of
11 securement would be no less or no more than the
12 amount of deformation to pull it out. You would
13 have that deformation throughout the entire time
14 even during pull out. They're already deformed.
15 And that deformation is what creates the force
16 inside the female threads and normal force or force
17 times friction is the force to resistance of
18 pulling it out.

19 Q. So you have to overcome that threshold?

20 A. That's correct.

21 Q. Of pulling it out?

22 A. But you don't necessarily have to deform
23 it more to pull it out, you just have to overcome
24 the friction and the force caused by deformation.

25 Q. I understand.

1 A. That's what makes this invention so
2 great.

3 Q. You mentioned Young's modulus earlier.
4 Can you explain what that is?

5 A. It's the modulus of elasticity. It's
6 the stress over strain on the polymer that defines
7 its stiffness. In general terms.

8 Q. So the higher that number the stiffer
9 the material?

10 A. Generally correct, yes.

11 Q. Is PEEK generally seen as being stiff?

12 MR. LEWIS: Objection to the form.

13 Q. Compared to other plastics?

14 A. Are you talking about
15 polyetheretherketone?

16 Q. Yes.

17 A. It's in the middle of the road I would
18 say. It's stiffer than polypropylene and
19 polyethylene generally. There's a lot of modified
20 polymers out there.

21 Q. What about --

22 A. Not as stiff as liquid crystal polymer.

23 Q. What about nylon?

24 A. If it's glass filled nylon, it would be
25 softer than glass filled nylon. Nylon that's not

1 glass filled. I would have to look it up. It
2 would be really close I think.

3 Q. If you could take your declaration in
4 the PGR.

5 MR. LEWIS: We've been going for --
6 I think we've been going for a little more
7 than an hour. Can we take a break?

8 MR. REITBOECK: Sure.

9 (Recess taken.)

10 BY MR. REITBOECK:

11 Q. Mr. Leinsing, if you could take your
12 declaration in the PGR, Exhibit 2021. Do you have
13 that?

14 A. Yes.

15 Q. And go to paragraph 197.

16 A. Okay.

17 Q. This section, in particular 197, refers
18 to claim language, "Where the distal shaft portion
19 is sized and configured so that it does not engage
20 the implant abutment threads continuously between a
21 most distal position of the distal shaft portion and
22 a proximal end of the implant abutment threads."

23 Do you see that?

24 A. Yes.

25 Q. If you go to paragraph 201. You

1 referred to, "Temporary fasteners with continuous
2 threads that are threaded into only a portion of the
3 abutment threads thus leaving abutment threads above
4 and/or below the temporary fastener empty." Do you
5 see that?

6 A. Yes.

7 Q. You depict that type of temporary
8 fastener in the following paragraph by copying
9 Figure 31 and highlighting the -- what I understand
10 to be the empty portion in yellow. Correct?

11 A. Correct.

12 Q. My question for you, Mr. Landing, is the
13 temporary fastener -- does the temporary fastener
14 described in paragraph 201 and depicted in paragraph
15 202 meet the claim language we just read into the
16 record and that is part of your paragraph 197?

17 A. No, it does not. But there's other
18 combinations that I discuss in this section that
19 would, namely the temporary fasteners with slots or
20 temporary fasteners that would go further into the
21 female threaded abutment such as the temporary
22 screws shown in Figures 68 and 69. The reason I
23 put this in the declaration was there was some
24 discussion about how to meet this requirement would
25 need to be above and below, and I don't recall

1 where I read that or heard that, so that's why that
2 was shown there in that figure that it's where
3 threads would be not continuous from the temporary
4 screw but that yellow box there would need to be at
5 the top in order to meet that particular claim
6 element.

7 Q. At the top where? Where at the top?

8 A. So the claim element covers the distance
9 from the distal point of the temporary screw to the
10 proximal point of the female thread and the
11 abutment so it covers that range. So the
12 discontinuous thread would need to be in that range
13 and the yellow box is outside that range, but it
14 would not be if you put in the temporary fastener
15 68 and 69 of the '992 or if you put in a slotted
16 temporary screw in that female abutment.

17 Q. Where in your opinion are you referring
18 to Figure 68 and 69?

19 A. I think I just say above and below. I
20 say in paragraph 200 it speaks to continuous
21 engagement, not to what petitioner's describing,
22 leaving abutment threads above or below the
23 temporary fastener empty. That's where that came
24 from, was the petitioner was talking about above
25 and below and to the extent that the petitioner's

1 argument was looked at that it was described in the
2 patent as below that space. And then above it as I
3 talk about I think in 201.

4 Q. My question was you referred to Figures
5 68 and 69 and I don't see that anywhere in your
6 opinion --

7 A. I don't think I have it in the
8 declaration. I think I just talk about the yellow
9 box was to show what empty threads would look like
10 and to the extent that -- since you're asking me
11 now, I'm giving you another example of what that
12 would mean is 68 and 69 would also achieve that on
13 the other end to meet that claim limitation.

14 Q. What do you mean on the other end?

15 A. So the claim is talking about a range
16 from, again, the distal point of the temporary
17 screw to the proximal point of the female thread in
18 the abutment. So one end is the distal end which
19 is the end of the screw the other end is the
20 proximal end. So an example of where you would
21 have no threads covered on the proximal end, 68 --
22 figures 68 and 69 of the '992 patent would achieve
23 that.

24 Q. What makes you say that?

25 A. Because if you look at the shafts 96 on

1 Figure 68 of the '992 you note that the shaft is
2 smaller than the threads which would allow that
3 threaded fastener to go in further and potentially
4 leave empty threads at the top.

5 Q. You've got to explain it to me. If you
6 take the screw of Figure 68, Mr. Leinsing, and you
7 screw it in, you screw the coping onto the abutment,
8 the cap number 94 would hold the coping in place;
9 right?

10 A. Correct. But depending on the length,
11 as patent figures are not meant to be scaled or
12 sized, but you can see at least proportionally that
13 the shaft portion of what is shown in 68, namely
14 96, that part there is smaller than the thread. So
15 those threads could be screwed in further into the
16 female abutment.

17 Q. Why?

18 A. Because there would be nothing at that
19 top end stopping the threads like all the other
20 screws.

21 Q. Well, the cap would stop the threads;
22 right?

23 A. Depending on where the cap was placed.
24 As you can see, that cap is friction fit disk so
25 that can be placed anywhere along that shaft.

1 There's also another example if you want more
2 examples in I think the last embodiment. Figure --
3 also the temporary screw shown in Figures 35 and 36
4 which I believe I did talk about.

5 Q. What about them?

6 A. Same thing with those, if you look at
7 the temporary screw 101 shown in figure 34 you see
8 how its shaft portion 101A is smaller than the
9 minor diameter of the threads? And then even in
10 this case if you want to try to scale the temporary
11 screw you can see that temporary screw has four
12 threads going in but when you look at the female
13 abutment there's approximately 8 threads. So if
14 you screwed in that screw all the way into the
15 female threads of the abutment, you would leave
16 empty threads at the top of the female thread
17 abutment.

18 Q. Is that described anywhere in the patent
19 that you would screw it that far in to leave an
20 empty shaft in the space of the abutment?

21 A. Well, the patent is showing that. I
22 don't think it's specific to language but a person
23 with skill in the art seeing that screw would see
24 that. This is only -- this is only being discussed
25 because I believe the petition was looking for

1 empty threads above and below. I as a person
2 skilled in the art feel like the claim talking
3 about discontinuous threads is talking about the
4 slotted version or talking about -- in column 23,
5 line 11 where it talks about separable threads or
6 serrated portions. So if you have a separable
7 threaded section where the threads are
8 discontinuous then they create a discontinuous male
9 thread on the temporary screw that would not go
10 continuously around in the female abutment,
11 therefore, meeting and describing that claim
12 limitation.

13 Q. Saying it's discontinuous because the
14 slot interrupts them?

15 A. Correct.

16 Q. You referred to Figure 35. Let me try
17 to understand your opinion there.

18 You're saying you would screw this so
19 far into the abutment that between the top most
20 portion of the abutment threading and the distal end
21 of the screw there would be a portion that is the
22 empty shaft, unthreaded shaft?

23 A. That's correct. It's better to look at
24 Figure 34 because 35 has that item 102 on there
25 with the torques adapter that's removable. If you

1 look at the screw that's in Figure 34, if you count
2 those threads on there there's roughly four to five
3 threads and if you look at the female threads of
4 all the other abutments you're going to count more
5 than that. If I look at Figure 4, for example,
6 there's 1, 2, 3, 4, 5 -- it's goes into 6 or more
7 threads. I counted 8 on one somewhere. Figure 9
8 has 7 threads.

9 Q. Isn't 102 the cap of the --

10 A. 101 is the temporary screw, 102 is a --
11 yeah, they call 102 the cap.

12 Q. Let's maybe look at Figures 68 and 69
13 and let me try to understand what you are saying in
14 the context of those figures.

15 If I understood you correctly,
16 Mr. Leinsing, you said, taking the screw of Figure
17 68, you could screw this so far in that the shaft 96
18 would end up below the top end of the abutment
19 threading. Did I understand that correctly?

20 A. The proximal end in just the portion of
21 96, not the entire shaft, just the small portion to
22 meet what the petitioner was looking for which was
23 empty threads at the top and the bottom. As I said
24 before, I don't agree with that understanding of
25 the claim limitation, I believe it's describing the

1 slotted temporary fastener or the separable threads
2 or serrations.

3 Q. So the Figures 68 and 69 would not even
4 be covered by the claim language?

5 A. I think it could be, yes, because of the
6 size of the shafts, 96. If the claim language was
7 to be interpreted the way the petitioner was
8 talking about then, yes, that would satisfy it. If
9 you put those into the female threads. And if you
10 look at that temporary fastener compared to all the
11 others, you note that 96 size is smaller than the
12 minor diameter of the threads which is unique to
13 the other temporary fasteners which have the shaft
14 portion roughly the size of the major diameter of
15 the threads which would prevent meeting the claim
16 limitation if understood by the petitioner, which I
17 don't think that's the proper read but I discuss it
18 in both ways in this section.

19 Q. You discuss it on the assumption that
20 that understanding of the claim language is as it is
21 presented in the petition? That's why you discuss,
22 you know, Figure 31 in your opinion and Figure 68
23 now?

24 A. That's correct. Yeah. To the extent
25 it's going to be understood that way. The

1 specification does show embodiments that could
2 achieve that but, once again, I think the slotted
3 temporary fastener or with -- as described in
4 column 23, the separable threads or serrations
5 would more properly meet that limitation.

6 Q. Let's look at --

7 A. Or be a written description for it is I
8 think the proper legal term.

9 Q. If you look at paragraph 212 through 214
10 of your PGR, in paragraph 212 you reproduce the
11 claim limitation of the temporary fastener, "Wherein
12 the distal portion of the shaft of the temporary
13 fastener is configured to deform during the
14 application of the axial force in the proximal
15 direction to thereby release the coping and the
16 temporary fastener as the unit from the implant
17 abutment."

18 Do you see that?

19 A. Yes.

20 Q. That comes out of claim 14 of the '781
21 patent; yes?

22 A. That's correct.

23 Q. Paragraph 213 discusses a, "Temporary
24 fastener that can be pulled out of the abutment
25 without being unscrewed because its threads detach."

1 Do you see that?

2 A. Yes. That's what the petition says
3 which I disagree with.

4 Q. What do you disagree with?

5 A. That it does not describe a temporary
6 fastener that can be pulled out -- it doesn't
7 require the threads to detach, it's talking about
8 deforming -- let me use the right word here --
9 yeah, deform is the right word, no detach. There's
10 a big difference.

11 Q. Is a temporary fastener that can be
12 pulled out of the abutment without being unscrewed
13 because its threads detach covered by the claim
14 language you quote in paragraph 212 or not?

15 MR. LEWIS: Objection to the form.

16 A. I don't think detach is the right word.
17 It doesn't use detach. The claim says deform. If
18 they mean that detach means that the threads are
19 moving away from the threads of the fastener,
20 temporary fastener are moving away from the female
21 threads of the female -- female threads of the
22 abutment then I suppose it may mean that, but I
23 think this was another attempt of the petitioner to
24 try to confuse the patent office to say that the
25 male threads are somehow engaged into the female

1 threads, in other words, matching threads, which
2 they are not. When you look at some of that claim
3 language about different threads that the more
4 proper language is deform. That's what's in the
5 claim. It doesn't say detach.

6 Q. I know that, but my question -- and I'm
7 not entirely sure where we ended up.

8 A. If you know that why are you asking me?

9 Q. I know what the claim language says,
10 Mr. Leinsing, my question is whether a temporary
11 fastener where the threads detach, in other words,
12 come off, whether it is covered by the claim
13 language or not?

14 MR. LEWIS: Objection to the form.

15 A. I don't like the wording of your
16 question, you're saying like the threads come off,
17 they detach, these words you choose I think are not
18 proper. The claim says temporary fasteners
19 configured to deform, the threads do not detach
20 from the post, in other words, they do not like
21 fracture and come off from the temporary fastener.
22 I think it's improper to use the word detach. The
23 entire temporary fastener detaches from the
24 abutment, but to say the threads detach makes it
25 sound like the threads are fracturing and that's

1 improper.

2 Q. What if the threads are fracturing?

3 A. That would be bad --

4 MR. LEWIS: Objection to the form.

5 Q. What if the threads fracture and detach
6 from the post, is such a temporary screw covered by
7 this claim language or not?

8 MR. LEWIS: Objection to the form.

9 Incomplete hypothetical.

10 A. First, that would not be desirable to do
11 that. That's one of the reasons why I think
12 Poovy -- the issues with Poovy because the silicone
13 coated thread could do that. Here in the asserted
14 patents '992 and '781 the claim is talking about
15 deforming the threads such that you would not have
16 fractured teeth, they would deform and stay part of
17 the temporary screw.

18 Q. Doesn't the claim language quoted in
19 paragraph 212 cover a fastener where the threads
20 detach to bring release?

21 A. So to the extent you're asking me a
22 legal question on that, I cannot answer. But the
23 claim says to deform and to a person of skill in
24 the art like myself reading it, when it's saying
25 deform, it means it's deforming and not fracturing

1 or breaking off pieces, and then understanding the
2 claims in view of the specification, a person
3 skilled in the art would understand that that would
4 not be desirable to fracture off little pieces into
5 a person's mouth in a female threaded abutment that
6 you would then need to put another screw into. So
7 they may legally or technically, which I'm not an
8 attorney to answer that question, physically cover
9 a fracture because as long as they at least deform,
10 if they do something in addition I believe legally
11 that could be true, but as a person of skill in the
12 art, technically I wouldn't understand it to say
13 that because it wouldn't make sense.

14 Q. Let's go to paragraph 136 of your PGR
15 declaration.

16 I'm sorry, to clean up on the previous
17 issue, one more question.

18 Would you agree that the patent never
19 discusses or describes a temporary fastener where
20 the threads detach?

21 MR. LEWIS: Objection.

22 Q. During release?

23 MR. LEWIS: Objection to the form.

24 A. If you're saying detaching means the
25 threads fracture off of the screw, I don't recall

1 the specification talking about that, but I will
2 let the specification of the two patents speak for
3 themselves. And again, it wouldn't make sense to a
4 person of skill in the art when the claim says
5 deform. When you read the word deform that means
6 that it's deforming and not fracturing.

7 Q. Deforming in the sense of bending?

8 A. Correct. That it would be bending,
9 compressing, doing anything but fracturing when
10 you're removing that temporary screw.

11 Oh, and I found where it says PEEK.
12 Column 28, claim 13. I knew it said PEEK
13 somewhere.

14 Q. Let's turn to paragraph 136 of the same
15 declaration in the PGR Exhibit 2021. This section
16 is about the claim limitation whereby, "The shaft
17 threading contour does not essentially match the
18 implant abutment thread's contour."

19 Do you see that?

20 A. Yes.

21 Q. Looking at paragraph 147, you have
22 opined that, "The language of this limitation
23 adequately informs a POSA of the scope of the
24 claimed invention because it indicates a plus/minus
25 10 percent difference in any one or all of several

1 well-known properties of screw threads."

2 Do you see that?

3 A. You lost me where you went to.

4 Q. Paragraph 147.

5 A. I'm way off. Okay. I'm with you.

6 Q. That plus/minus 10 percent value comes
7 out of the specification where it defines the word
8 essentially; right?

9 A. That's correct.

10 Q. When the claim language talks about the
11 shaft threading contour does not essentially match
12 the implant abutment thread's contour, that means
13 that in percentage the difference is more than 10
14 percent; correct?

15 A. That's correct. It's outside of the
16 tolerance range.

17 Q. So the 10 percent is the tolerance range
18 and once you go beyond 10 percent it does not
19 essentially match anymore?

20 A. That's correct.

21 Q. When you talk about a, "Plus/minus 10
22 percent difference in any one or all of several
23 well-known properties of screw threads," you discuss
24 those properties of screw threads in paragraph 140;
25 is that right?

1 A. That's correct.

2 Q. One of the properties is the major
3 diameter; right?

4 A. That's correct.

5 Q. Another one is the minor diameter;
6 correct?

7 A. That's correct.

8 Q. Another one is the thread angles;
9 correct?

10 A. That's correct.

11 Q. And I would assume that it coats both
12 the proximal and distal thread angle, is that right?

13 A. That's correct.

14 Q. And under property is the radius at the
15 crest; correct?

16 A. That's correct.

17 Q. Then you mention slots that cover 10
18 percent of the thread area; correct?

19 A. That's correct, which I think comes from
20 the file history.

21 Q. Then you have the property pitch
22 diameter; correct?

23 A. That's correct.

24 Q. Pitch circumference; correct?

25 A. Yeah, which is a function of pitch

1 diameter.

2 Q. Can you explain for the record what
3 pitch diameter means?

4 A. There's a formula where you actually can
5 calculate the pitch diameter which is the -- it's
6 hard to describe. It's between the minor and major
7 diameters of the thread. Approximately halfway but
8 it's defined by a calculation which is used in
9 calculating strength, retention strengths of
10 threads where the force is mostly applied to the
11 thread.

12 Q. Okay. Which of the properties you
13 mention in paragraph 140 would have to differ by
14 more than 10 percent for the thread profile to,
15 quote, not essentially match, unquote, the abutment
16 threading profile?

17 MR. LEWIS: Objection to the form.

18 A. It could be any one of these thread
19 parameters as long as it's greater than the 10
20 percent such that it would not, quote, unquote,
21 essentially match the female threads of the
22 abutment.

23 Q. And so for the reader of the patent to
24 determine whether that limitation is met, one would
25 have to go through the list of screw properties you

1 discuss in paragraph 140 and determine whether any
2 of them differs by more than 10 percent?

3 MR. LEWIS: Objection to the form.

4 A. That's correct. In addition to looking
5 to all the other claim limitations.

6 Q. Would a person of ordinary skill in the
7 arts know the list of screw properties as you have
8 listed it in paragraph 140?

9 MR. LEWIS: Objection. Form.

10 A. Yes.

11 Q. In your opinion, would a person of
12 ordinary skill in the art know to look at those
13 properties in determining whether the claim
14 limitation is met or not?

15 A. They would know to look at those
16 properties or if it's obvious enough during the
17 prosecution of the patent and you see the slots as
18 shown in paragraph 143, it's clearly showing that
19 the male threads do not essentially match or are
20 different than the female threads in the abutment.

21 Q. Would the person of ordinary skill in
22 the art reading this patent look at any other screw
23 properties to determine whether they match or not
24 match the thread profile of the abutment?

25 MR. LEWIS: Objection. Form.

1 A. These are the properties that I can
2 think of that a person of skill in the art would
3 think of but -- for example, an infringement
4 analysis, I would want to look at the particular
5 threads. There might be something they do with
6 serrations or something different that would not be
7 a slot or would be something else that would make
8 the threads not essentially match some other
9 feature, either drilling a hole through the threads
10 or something that would make it different.

11 Q. How about pitch, is pitch a screw
12 property that one would have to consider in figuring
13 out whether the thread contour matches or not,
14 essentially matches or not?

15 A. Well, you would know that from pitch
16 diameter and the pitch circumference so, yes, that
17 would be one of the properties that's inherently
18 known if you know the other properties.

19 Q. Pitch is the distance between threads;
20 right? Vertical distance?

21 A. That's correct.

22 Q. How would you know the pitch based on
23 the pitch diameter?

24 A. I would have to review the formula
25 again, but I believe you can figure that out from

1 the other variables, but pitch should be included.
2 If it's not in here then I meant to include pitch.
3 Because your pitch would need to be the same if the
4 threads are going to match.

5 Q. If the pitch differs by 9 percent does
6 it essentially match the thread contour of the
7 abutment?

8 MR. LEWIS: Objection to the form.

9 A. Well, according to the specification, if
10 that's the only thing that's different then that
11 would be close enough that it would match. It
12 would be a very problematic screw if that was the
13 case, but that's the limits that the patent talks
14 about such that there are sufficient differences
15 between the threads.

16 But that also could be what we discussed
17 earlier where the pitch is different and you asked
18 me, well, how can it happen, how can it not
19 deflect, and I talk about interference and as long
20 as the threads are different, and you asked me how
21 can they be different, and I said well, you can
22 have different pitches. Well, as long as that
23 different pitch is above 10 percent then it would
24 not match, it would meet the claim limitation and
25 you would achieve the invention.

1 Q. How about pitch angle, is that a screw
2 property that one would have to measure to determine
3 whether the claim limitation we talk about is met or
4 not?

5 A. Well, that term is I think -- I did a
6 lot of research with that one reading
7 Mr. Breunski's declaration, and pitch angle is
8 interpreted quite differently depending on
9 different people, that's why I didn't include that
10 here. I included the thread angles on both the
11 front and back, and if you have pitch and diameter
12 that would be sufficient to describe the threads in
13 my opinion, and then the pitch would be the other
14 one. I don't like to use the word pitch angle
15 because I don't think it's consistent across texts
16 and formulas.

17 Q. Now two of the screw parameters that you
18 mentioned are minor diameter and thread angle;
19 right?

20 A. Correct.

21 Q. What if the minor diameter differs by 6
22 percent and the proximate thread angle differs by 6
23 percent? Does it meet the claim limitation of not
24 essentially matching or not?

25 A. If everything else is within the same

1 specifications as the matching thread then it --
2 then it would not meet the claim limitation. It
3 would not be different enough to meet the claim.

4 Q. So are you saying that all of these
5 screw parameters that you mentioned can go up to 10
6 percent but as soon as one of them exceeds 10
7 percent it does not essentially match anymore?

8 A. According to what the patent says,
9 that's correct.

10 Q. The patent doesn't say anything about
11 that; right?

12 A. Yes, it does.

13 Q. Where?

14 A. It says what it essentially means, it
15 says plus or minus 10 percent and then it says
16 essentially match. So that means then the threads
17 can't be within the 10 percent, otherwise, they
18 would match.

19 Q. Can we agree that the patent never talks
20 about measuring any of the screw properties in the
21 context of the plus minus 10 percent?

22 MR. LEWIS: Objection to the form.

23 A. If you're talking about different
24 threads or you're talking about matching threads
25 then a person of skill in the art would know that

1 these are the properties that you have to look at.
2 Also this is not like an exhaustive list. As I
3 said above, it's the acceptable dimensional
4 tolerances of a female and male thread in which
5 they fit into. So in order to apply that 10
6 percent you have to apply it to something. What
7 are you going to apply it to if you don't apply it
8 to the thread's dimensions?

9 Q. You mean the screw properties?

10 A. Yes. To determine that it matches or
11 not you can't just look at a picture, you would
12 need to know the properties of the male thread and
13 then the female thread and then to have a --
14 basically the line drawn in the sand, the spec of
15 the patent talks about the 10 percent. So my
16 understanding reading this as a person that's
17 skilled in the art, talking about the threads being
18 different, they would have to be different by more
19 than 10 percent.

20 Q. In any of these screw properties that
21 you mention?

22 A. That's what the spec says, yes, they
23 would need to have something different from one
24 thread to the other. This patent, that's what's
25 unique about it, is not making them the same. A

1 person of skill in the art prior to this would not
2 have thought of making those threads different from
3 the temporary screw to the female threads and the
4 abutment, but that's what this patent is teaching,
5 making those threads different beyond what we would
6 think. Even the pitch.

7 Q. The screw parameters that you have in
8 paragraph 140, did I understand you correctly to say
9 that this is not an exhaustive list?

10 A. Yes. Meaning that -- when you asked me
11 about pitch, all the parameters that you would
12 typically use to describe a thread would be
13 included in that plus or minus 10 percent.

14 Q. Which other ones are there?

15 MR. LEWIS: Objection to the form.

16 A. I may have missed pitch. If your
17 understanding pitch is not included here, pitch
18 would clearly be included because that describes
19 threads.

20 Q. Is there any other screw parameter that
21 is not included in paragraph 140 that you think
22 should be included in the list?

23 A. I think I included them all. If there's
24 something else -- if this was an infringement
25 analysis I would ask counsel to do a discovery on

1 what the specifications are of the two threads, I
2 would look at the dimensions of each and then I
3 would compare those and see if they're inside 10
4 percent or outside 10 percent.

5 Q. But it would compare the screw
6 parameters you have in paragraph 140; right?

7 A. If they're provided or if they're
8 provided differently. Maybe they put a dimension
9 in there that's a radius. So to get a diameter I
10 would need to multiply times 2. There might be a
11 different dimension given that I'm not thinking of
12 right now, but it would describe the thread in some
13 way that you could compare to -- compare a male and
14 female thread. I think that I have listed the ones
15 that are important including the pitch.

16 Q. The pitch you added here right, it's not
17 in here?

18 MR. LEWIS: Objection to the form.

19 A. It is in here. I talk about pitch
20 diameter, pitch circumference so in order to
21 calculate pitch diameter, pitch circumference you
22 need to know the pitch. I also say above that, I
23 say acceptable dimensional tolerances of female
24 threads of which it fits into.

25 Q. What are you referring to? I'm sorry.

1 A. So I say, "In my opinion, a person of
2 skill in the art would have understood that the
3 claimed shaft threading contour does not
4 essentially match the implant abutment thread's
5 contour if it is outside of acceptable dimensional
6 tolerances of the female threads of which it fits
7 into."

8 So I'm talking about acceptable
9 dimensional tolerances that you expect to see for a
10 female thread and then you look at those same
11 dimensional tolerances on the male thread and then
12 I say, in other words, major diameter, minor
13 diameter, all these types of dimensions that you
14 would look at for the threads.

15 Q. If your pitch differs by 10 percent and
16 you look at for example -- take Figure 75. How far
17 could you screw that in? How many rotations in your
18 opinion?

19 MR. LEWIS: Objection to the form.

20 A. I would need to see the rest of the
21 parameters of the screw. Are you saying that the
22 diameter and everything would be the same?

23 Q. Diameter of what?

24 A. I don't understand your question. I
25 can't answer your question as asked.

1 Q. Let me put it this way, Mr. Leinsing.
2 Is a 10 percent difference in pitch an acceptable
3 tolerance for a screw?

4 A. Which part of the screw?

5 Q. Sorry?

6 A. Which part of the screw?

7 Q. The pitch is in the threading area;
8 right? I don't understand your question.

9 A. I don't understand yours.

10 Q. We discussed the pitch; right?

11 A. That's not what you said in your
12 question. You said is plus or minus 10 percent an
13 acceptable tolerance for a screw.

14 Q. My question was: Is a 10 percent
15 difference in pitch an acceptable tolerance for a
16 screw?

17 A. I would have to see the rest of the
18 screw and the application to answer that. Depends
19 on the screw. Depends. I don't think that's the
20 question to be asked. This 10 percent is to be
21 asked whether or not to put a line in the sand as
22 to what is a male thread and whether or not it's
23 actually matching the female thread to basically
24 make the claim definite that there's a physical
25 line in the sand, what it means to match or not

1 match.

2 It's not whether or not it's acceptable
3 for a thread or not. The question is whether or
4 not it's different enough. That's this whole
5 invention, is the temporary screw being different
6 with different threads than the female thread of
7 the abutment. That's what none of the prior art
8 talks about and that's the name of the game on
9 these two patents.

10 Q. Let me give you your declaration in the
11 PGR -- the first declaration, it eventually became
12 Exhibit 2010 in the PGR although it wasn't stamped
13 as filed but it dates September 25, 2025.

14 If you turn to paragraph 94, this
15 section talks about the same limitation; right?

16 A. That's correct.

17 Q. Similar to your later declaration that
18 is Exhibit 2021 in paragraph 94, you discuss screw
19 properties that can be measured in the context of
20 this claim limitation; right?

21 A. Yes, that's what I talk about.

22 Q. In here you do have pitch; do you see
23 that?

24 A. Yes. It's not intended to be excluded
25 from the other one. I did include pitch diameter

1 and pitch circumference so pitch is a factor.

2 Q. This one also discusses pitch angle, do
3 you see that?

4 A. Yes, I think I wrote this before I saw
5 Mr. Breunski -- I'm starting to forget names now --
6 was starting to confuse that whole pitch angle so I
7 didn't want to talk about pitch angle, that's why I
8 talked about the -- I said thread angles instead.

9 Q. Well, thread angle is something very
10 different than pitch angle; is it not?

11 A. It is, but in some textbooks pitch angle
12 is the same as the thread angle I talk about.

13 Q. What do you understand pitch angle to
14 mean?

15 A. It's looking at a thread from along its
16 axis and drawing a line from one point of the
17 thread to the other point and then what that angle
18 is in relation to the perpendicular line to the
19 axis which is a very weird kind of arbitrary angle
20 that I don't often see or use and clearly from my
21 research that gets confused with thread angle. So
22 I try -- I'm trying to avoid that term.

23 Q. Which term do you use for this property,
24 helix angle?

25 A. Helix angle, yes -- well, I usually

1 don't use Helix either. I prefer to use pitch and
2 thread angles as I did in my second declaration. I
3 tried to clarify all of those features of the
4 threads better than I did in the first declaration.

5 Q. You got me confused. The angle you
6 described earlier between outer point of the thread
7 going to the outer point of the thread on the other
8 side of the screw, what do you call that angle?

9 A. Well, I believe I would call that a
10 pitch angle but, like I said, there's some texts
11 that call the angles of the actual threads
12 themselves a pitch angle. I don't like that term
13 like I said. You can calculate any of these
14 parameters from pitch and thread diameter and all
15 the other properties I put in my second
16 declaration.

17 The important point is that it's the
18 plus or minus 10 percent in all of these things
19 that define the threads and being outside of that
20 and if the threads happen to define pitch angle and
21 they clearly describe it on one drawing then you
22 would look for that to be outside of 10 percent on
23 the male thread in order to be infringing that
24 claim limitation. That's what's important and
25 that's what I intend to talk about here in my

1 declaration.

2 Q. So is pitch angle one of the properties
3 that should be added to the list?

4 A. It can be but, again, you can get there
5 from pitch with some of the other properties. In
6 other words, it's a redundant -- it could be a
7 redundant description of the thread or it could be
8 in place of some of the other descriptions of the
9 thread. That's why I'm saying it's better to say
10 whatever the dimensions are that describe the
11 female thread, the male thread dimensions must at
12 least in one of those parameters for the threads be
13 different by more than 10 percent.

14 MR. REITBOECK: Shall we take a
15 short break?

16 MR. LEWIS: Sure.

17 (Recess taken.)

18 BY MR. REITBOECK:

19 Q. Mr. Leinsing, let's turn to the issue of
20 obviousness and I'm now looking at paragraph 206 in
21 your IPR declaration, Exhibit 2021.

22 A. Which paragraph?

23 Q. In particular, I'm looking at paragraph
24 211.

25 A. Okay.

1 Q. You say in here in roughly the middle
2 you say, "This assumption is unsound because nothing
3 in Bernhard, Poovy or Gracco teaches or suggests
4 using a temporary screw with a thread profile that
5 is different from a definitive screw or the
6 abutment."

7 Do you see that?

8 A. Yes.

9 Q. Then you go on and you discuss this
10 concept of temporary screw having a thread profile
11 that is different from a definitive screw or the
12 abutment. To be honest, I'm not quite sure anymore
13 whether it was you or your counsel in the brief but
14 it's referred as mismatch concept in shorthand. Is
15 that okay with you?

16 A. I prefer the language of the claim. I
17 think it uses the term different thread.

18 Q. The different thread concept?

19 A. Yeah.

20 Q. Okay. Then you go on and you discuss
21 that Bernhard does not disclose the different thread
22 concept and you discuss that Poovy does not disclose
23 the different thread concept and you discuss that
24 Gracco does not disclose the different thread
25 concept. Later on in 222 you also discuss that

1 Derey does not disclose the different thread
2 concept.

3 My question for you is: Is it your
4 understanding that at least one of those references
5 that is asserted by petitioner would have to
6 disclose the different thread concept in order to
7 find obviousness?

8 MR. LEWIS: Objection to the form.

9 A. Yes, I think it would have to be some
10 teaching and there would have to be motivation from
11 looking at the primary reference as to why you
12 would want to even modify it even beyond the first
13 one but on the second one or third one it's my
14 understanding that patent law, it's not a cherry
15 picking exercise, but even if you do that, he's
16 missing a cherry. The cherry is that there's no
17 disclosure of the different threads which is
18 contrary to the way a person with skill in the art
19 would think how you would match a male thread to a
20 female thread normally, but the patent is
21 contemplating differences which allows the
22 advantageous alignment as well as easier pull out.

23 Q. If you make the thread of the Poovy
24 screw a buttress thread as described in Gracco,
25 would that make pulling out the temporary screw of

1 Poovy harder or easier?

2 MR. LEWIS: Objection to the form.

3 A. Well, according to Gracco that would
4 make it easier but it's with a female thread that
5 matches the male thread. So it still doesn't meet
6 all the limitations of the claim.

7 Q. Well, my question, Mr. Leinsing, is if
8 everything else equal but you turn the symmetrical
9 thread of Poovy into a buttress thread, would that
10 make pulling out the screw easier or harder?

11 MR. LEWIS: Objection. Incomplete
12 hypothetical.

13 A. That's not the combination -- I think
14 you're saying keep the threads -- the female
15 threads of Poovy and put in a male thread of Gracco
16 but that's -- first, I don't recall that being
17 discussed or presented. I'd have to look at the
18 configuration that was being made and it would
19 depend on how that was combined, but according to
20 Gracco, I would think it would come out easier, but
21 again, Gracco is -- the way it was presented in the
22 petition is that it would still have a matching
23 female thread and there was nothing in Gracco that
24 said you would do that differently nor does Poovy
25 suggest that.

1 Q. The fact that the screw would come out
2 easier if you make the thread of the screw a
3 buttress thread, you don't need Gracco to conclude
4 that; do you?

5 MR. LEWIS: Objection to the form.

6 A. Well, Poovy talks about a method of a
7 temporary screw for axially removing that I don't
8 agree with with the heat-labile plastic or the
9 silicone, but if you're following Poovy, for that
10 temporary screw that you don't even need to look at
11 Gracco, it's already solved that problem, that's
12 part of the issue with even looking at Gracco.
13 There's no reason or motivation to look at Gracco
14 after you've added Poovy.

15 Q. Poovy solved which problem?

16 A. Well, if I recall the declaration and
17 the petition, that Poovy would solve the problem of
18 allowing a temporary screw to be removed axially
19 but in a method that uses silicone or heat-labile
20 plastic but with a male thread that matches the
21 female thread. And so there's no motivation or
22 issue to be solved with the combination of Poovy
23 and Bernhard to then now look at Gracco. It
24 doesn't make sense why you would look at Gracco if
25 Poovy already solves the axial release but with a

1 matching thread.

2 That's why none of these combinations
3 can match because none of them are contemplating
4 making all this work with a male thread that
5 doesn't -- with a male thread that is different
6 from the female thread.

7 Q. Let's go back to my original question,
8 Mr. Leinsing.

9 If you change the thread design of the
10 screw in Poovy from symmetrical to buttress thread,
11 the screw would be easier to pull out; correct?

12 A. I mean it would depend on some other
13 parameters of the threads. In general, I think
14 that would be the case but I don't recall that
15 being presented to take -- that's not what Gracco
16 is teaching, it's teaching a reverse buttress
17 that's inside of a reverse buttress thread. So now
18 you're taking a reverse buttress and putting it in
19 a symmetrical thread which is not what the petition
20 contemplates.

21 Q. I wasn't referring to Gracco,
22 Mr. Leinsing. I was simply asking you if you change
23 the thread design in Poovy from symmetrical to
24 buttress thread the screw would generally be easier
25 to pull out; correct?

1 A. Yeah, I mentioned Gracco because Gracco
2 is where you get the buttress thread. Or where
3 that argument is coming from. The only problem is
4 none of these references talked about the threads
5 being different between the male thread of the
6 temporary screw and the female thread of the
7 buttress.

8 Q. Let's focus on my question,
9 Mr. Leinsing. I'm not talking about Gracco. I'm
10 asking you if you change the thread design in Poovy
11 from symmetrical to buttress, generally speaking the
12 thread would be easier to pull out; is that correct?

13 MR. LEWIS: Objection to form.

14 Incomplete hypothetical. Asked and answered.

15 A. It would depend on the other parameters
16 of the screw. I would need to look at what that
17 combination is because Gracco in particular doesn't
18 teach two different threads and whether or not
19 that's easy to pull out, it only talks about when
20 the buttress thread is matched with a female
21 buttress thread which is not what the '992 patent
22 and '781 patent are teaching.

23 Q. Again, I'm not referring to Gracco. Can
24 we leave Gracco out for a second?

25 A. No.

1 Q. Well, I can and it's my question and I'm
2 asking you under oath if you change the thread in
3 Poovy from symmetrical to buttress thread, generally
4 speaking, would the thread be easier to pull out,
5 yes or no?

6 MR. LEWIS: Excuse me, counsel, you
7 cannot tell my deponent how to answer your
8 question. You can ask him whatever you want,
9 you cannot tell him how to answer the
10 question.

11 MR. REITBOECK: That's true.

12 A. The only reason -- I'm not trying to be
13 argumentative. I'm bringing up Gracco because
14 that's the only reference that we have to reference
15 to know and why you potentially know why a buttress
16 thread may be easier to remove is because Gracco
17 teaches us that. So it's hard to answer your
18 question without referring to Gracco. And the only
19 reason why we can all say or think that it might be
20 less is because Gracco teaches that, but Gracco
21 teaches a male thread that's a buttress has less
22 retention when matched with a female thread that
23 has matching threads. It does not teach what it
24 would be if you take a buttress thread and put it
25 into a symmetrical thread.

1 So I already answered your question. I
2 think it would be likely but it would depend on
3 other parameters of the screw and I would need to
4 look for that, but again, it does not -- those
5 references don't teach to do that and nor does the
6 petition contemplate that combination.

7 Q. If you take your declaration in the IPR
8 Exhibit 2010, the first declaration.

9 A. Okay.

10 Q. And look at paragraph 84. You said
11 that, "Gracco does not teach anything more than the
12 other prior art and inherent geometry disclosed to
13 the examiner."

14 Do you see that?

15 A. Yes.

16 Q. So at that point you were of the opinion
17 that what Gracco teaches us is simply geometry;
18 didn't you?

19 A. It teaches us geometry of a male thread
20 that matches a female thread. But again, it
21 doesn't teach what the '992 and '781 patents are
22 disclosing which is mismatching or threads that are
23 different between male and female.

24 Q. If you add the structural feature of the
25 deflecting legs of Derey to the screw of Poovy,

1 would that make it easier or harder to pull out?

2 MR. LEWIS: Objection to the form.

3 A. Again, if you take Poovy which has
4 matching threads of male to female and just had a
5 slot, I think it would make it easier. But again,
6 I don't recall that combination contemplated nor
7 would it meet the claim limitations because the
8 threads still match and are not different between
9 male and female.

10 MR. LEWIS: Counsel, can we take a
11 quick water break?

12 MR. REITBOECK: Sure.

13 (Recess taken.)

14 MR. REITBOECK: All right,
15 Mr. Leinsing, for the time being I have no
16 further questions and I pass the witness.

17 MR. LEWIS: I have no questions.

18 THE REPORTER: Mr. Reitboeck, would
19 you like a copy of the transcript?

20 MR. REITBOECK: Yes.

21 THE REPORTER: Would you like a
22 copy of the transcript, Mr. Lewis?

23 MR. LEWIS: Yes please.

24 MR. REITBOECK: And a rough.

25 MR. LEWIS: I don't need a rough.

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Thank you.
(Deposition concluded at 5:07 p.m.)
(Signature reserved)

1 STATE OF NORTH CAROLINA

2 WAKE COUNTY

3 REPORTER'S CERTIFICATE

4 I, Andrea L. Kingsley, a Notary Public
5 in and for the State of North Carolina, do hereby
6 certify that there came before me on Wednesday, the
7 May 20, 2026, the person hereinbefore named, who
8 was by me duly sworn to testify to the truth and
9 nothing but the truth of their knowledge concerning
10 the matters in controversy in this cause; that the
11 witness was thereupon examined under oath, the
12 examination reduced to typewriting under my
13 direction, and the deposition is a true record of
14 the testimony given by the witness.

15 I further certify that I am neither
16 attorney or counsel for, nor related to or employed
17 by, any attorney or counsel employed by the parties
18 hereto or financially interested in the action.

19 IN WITNESS WHEREOF, I have hereto set
20 my hand this the 5th day of June, 2026.

21
22 

23 Andrea L. Kingsley, Notary Public

24 Notary Public #201903800023
25

Jonathan Lewis, Esq.

JLewis@smithlaw.com

June 5, 2026

RE: Straumann USA LLC v. Smart Denture Conversions LLC
5/20/2026, Karl Leinsing (#8156892)

The above-referenced transcript is available for
review.

Within the applicable timeframe, the witness should
read the testimony to verify its accuracy. If there are
any changes, the witness should note those with the
reason, on the attached Errata Sheet.

The witness should sign the Acknowledgment of
Deponent and Errata and return to the deposing attorney.
Copies should be sent to all counsel, and to Veritext at
cs-ny@veritext.com.

Return completed errata within 30 days from
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If the witness fails to do so within the time
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Yours,

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1 Straumann USA LLC v. Smart Denture Conversions LLC
2 Karl Leinsing (#8156892)

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24 Karl Leinsing Date

1 Straumann USA LLC v. Smart Denture Conversions LLC

2 Karl Leinsing (#8156892)

3 ACKNOWLEDGEMENT OF DEPONENT

4 I, Karl Leinsing, do hereby declare that I
5 have read the foregoing transcript, I have made any
6 corrections, additions, or changes I deemed necessary as
7 noted above to be appended hereto, and that the same is
8 a true, correct and complete transcript of the testimony
9 given by me.

10
11 _____
12 Karl Leinsing

_____ Date

13 *If notary is required

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

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