UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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AVANOS MEDICAL, INC.,
Petitioner,

v.

STRATUS MEDICAL, LLC
Patent Owner

_____

IPR2024-1209
U.S. Patent No. 10,966,782

IPR2024-1210
U.S. Patent No. 10,736,688

IPR2024-1211
U.S. Patent No. 10,736,688

IPR2024-1212
U.S. Patent No. 10,925,664

Petitioner's Exhibit 1045
Avanos v. Stratus

Deposition of PETER CROSBY held at DLA Piper LLP, One Fountain Square, 11911 Freedom Drive, Suite 300, Reston, VA, commencing Tuesday, August 5, 2025, at 8:52 a.m. pursuant to notice, before Okeemah S. Henderson, RPR, Notary Public in and for the Commonwealth of Virginia.

Job No. 167180

Reported by: Okeemah S. Henderson, RPR

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A P P E A R A N C E S

MEUNIER CARLIN & CURFMAN
BY: CHRIS KELLY, ESQUIRE
999 Peachtree St NE
Suite 1300
Atlanta, GA 30309
404-645-7700
Ckelly@mcciplaw.com

LAURENCE & PHILLIPS
BY: MATTHEW C. PHILLIPS, ESQUIRE
1050 Connecticut Avenue, NW
Suite 500
Washington, DC 20036
202-558-6080
Mphillips@lpiplaw.com

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E X H I B I T S

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P R O C E E D I N G S

PETER CROSBY,

was called as a witness, and having affirmed, was examined and testified as follows:

THE WITNESS: I do.

EXAMINATION

BY MR. KELLY:

Q. Good morning, Mr. Crosby.

A. Good morning.

Q. Can you hear me okay?

A. I can hear you fine.

Q. All right.

A. I'll let you know if I can't.

Q. All right. Could you please state your name for the record?

A. Peter Crosby.

Q. And you understand that you are under oath today?

A. Yes.

Q. Is there anything that would prevent you from providing competent and complete truthful testimony today?

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A. No.

Q. Have you been deposed before?

A. Yes.

Q. About when?

A. When? The last time February of this year abut March.

Q. And about how many times have you been deposed?

A. Over what period of time?

Q. Your career.

A. 30.

Q. So it sounds like you're familiar with how depositions work?

MR. PHILLIPS: Objection form.

A. I'm familiar with how depositions work in some jurisdictions.

BY MR. KELLY:

Q. Okay. Because we have a court reporter transcribing your testimony, I'll ask that you try to let me finish my questions before you answer and if at any point you do not understand the question I'm

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asking just let me know and I will try to clarify it. Okay?

A. Yes.

Q. And if at any point you need to take a break, just let me know and we can do that. That's not a problem. Okay?

A. Yes.

Q. To the extent we do take breaks during today's cross examination do you understand you're not permitted to speak with anyone about the substance of your testimony during those breaks?

A. I understand.

Q. What did you do to prepare for today's deposition?

A. Over what period of time.

Q. The entirety of time that you prepared for today's deposition?

A. I read multiple documents including my declaration, the patent owner's response of their declaration of Dr. Tucker, Dr. Tucker's deposition transcript.

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The patents, a few other documents that I can't recall their names right now. I had several conversations with Mr. Phillips and that's about all I can remember.

Q. Did you prepare for today's deposition by discussing your testimony with anyone other than Mr. Phillips?

A. No.

(Stratus Exhibit 2006 was marked for identification.)

Q. Mr. Crosby, I've handed you a copy of a document that's been previously marked Stratus Exhibit 2006.

Can you identify this document for the record?

A. It appears to be a copy of my declaration in this case.

Q. If you turn to page 91 of Exhibit 2006, is this your signature on page 91?

A. Yes, it is.

Q. And this document was signed

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on May 22, 2025; is that right?

A. Yes.

Q. If you turn to the cover page of Exhibit 2006 there are four IPR proceedings listed on the cover; is that correct?

A. Yes.

Q. And those are IPR case numbers 2024-01209, 2024-01210, 2024-01211 and 2024-01212; is that correct?

A. Yes.

Q. And if you turn to paragraph 1 of this document I believe you repeated those case numbers here in the table following paragraph 1, correct?

A. Yes.

Q. Is it correct that your testimony in Exhibit 2006 was prepared for all four of these IPR proceedings?

A. Yes.

Q. So you prepared just one declaration to apply to all four IPR cases,

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correct?

A. Yes.

Q. So going forward I would just refer to Exhibit 2006 as your declaration; is that okay?

A. Yes, this is part of the declaration but, yes, there are other documents included by reference, if I remember correctly.

Q. Okay. What are those documents?

A. Well, the patents themselves, of course. I think there's another exhibit labeled 2008, if I remember correctly which is a claims chat.

Q. Other than Exhibit 2006 and Exhibit 2008 have you provided any documents that comprise testimony in this IPR?

A. No.

Q. About when did you start working on your declaration?

A. Mid to late February, I

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recall.

Q. February of 2025?

A. Yes, I apologize. February of 2025.

Q. Between February of 2025 and May 22nd of 2025, about how many hours did you spend preparing your declaration?

A. I can't recall. I'd have to look at my invoices for my time history.

Q. Was it more than 20 hours?

A. Yes.

Q. Was it more than 40 hours?

A. I honestly can't recall the exact number. I think it was more than 40 but I don't have a specific number in my mind.

Q. Did you personally write the words in your declaration?

A. Yes.

Q. Did you prepare more than one draft of this declaration?

A. Yes.

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Q. Did you personally write the first draft?

A. The first draft?

Q. Yes.

A. Yes.

Q. Did anyone else write any of the words in your declaration?

A. I asked for and received review comments from Laurence & Phillips Law Firm and I considered those comments and some of them I incorporated and some of them I didn't.

MR. PHILLIPS: I'm going to instruct the witness not to reveal the content of any conversation that you had with attorneys at Laurence & Phillips.

BY MR. KELLY:

Q. Could you turn with me back to paragraph 1 of your declaration. And you see in the table here 3 different Stratus patents are listed, right?

A. Yes.

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Q. In preparing your declaration did you review U.S. Patent Number 10966782?

A. Yes.

Q. And in preparing your declaration did you review the prosecution history of U.S. Patent 10966782?

A. I glanced at it but I wouldn't say I reviewed it. I was aware of it and I had it but I didn't review it.

Q. In preparing your declaration did you review U.S. Patent No. 10736688?

A. Yes.

Q. And in preparing your declaration did you review the prosecution history of U.S. Patent Number 10736688?

A. I think it's the same answer. It was available to me and I glanced at it, but I didn't review it in detail.

Q. Okay. We got one more. In preparing your declaration did you review U.S. Patent Number 10925664?

A. Yes.

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Q. And in preparing your declaration did you review the prosecution history of U.S. Patent Number 10736664?

MR. PHILLIPS: Objection asked.

A. I had the prosecution history available to me and I glanced at it, but I didn't review it in detail.

MR. PHILLIPS: Also objection form to the last question.

MR. KELLY: I think I misspoke with respect to the patent number, so I'm going to ask one more time.

BY MR. KELLY:

Q. In preparing your declaration did you review the prosecution history of US Patent Number 10925664?

A. Yes.

Q. You reviewed the prosecution history of the 664 --

A. I'm sorry. Could you ask the question again?

Q. Yes. Sorry. In preparing

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your declaration did you review the prosecution history of U.S. Patent Number 10,925,664?

A. Similar answer. I had the prosecution history available to me. I glanced at it, but I did not review it in detail.

(Exhibit 1001 was marked for identification.)

BY MR. KELLY:

Q. Mr. Crosby, I've handed you a copy of what has been previously marked as Exhibit 1001.

Can you identify this document?

A. This appears to be a copy of U.S. Patent 10966782 B2.

Q. If you turn to the second page of the 782 Patent do you see a heading that reads, [As read] "Related U.S. application data"?

A. Yes.

Q. In the first full paragraph beneath that heading do you see three

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provisional application numbers listed?

A. Paragraph Number 60 you're referring to?

Q. Yes.

A. Yes, I see that.

Q. And these are provisional application Number 61/357894, 61/357886 and 61/347351, correct?

A. Yes.

Q. In preparing your declaration did you review any of these provisional applications?

A. No.

(Exhibit 1002 was marked for identification.)

BY MR. KELLY:

Q. Mr. Crosby, I've handed you copy of what's been previously marked as Exhibit 1002. This is the 688 patent, correct?

A. It's U.S. Patent 10736688 B2.

Q. If you turn to page 2 do you see another heading that says, [As read]

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"Related U.S. application data"?

A. Yes.

Q. And do you see provisional application number 61/280557 and provisional application number 61/347351 listed here in the 688 Patent?

A. Yes.

Q. In preparing your declaration did you review either of these provisional applications?

A. I don't believe so. No.

Q. Let's turn back to your declaration and could you turn with me to paragraph 23.

A. This is Exhibit 2006?

Q. Yes. Correct.

A. And what paragraph?

Q. 23. You see in the bullet points of paragraph 23 that you refer to the references Racz Ftz, Lee, Young 965 Scheibe, Cosman, Young 201 and Godara?

A. Yes, I see that.

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Q. In preparing your declaration did you review each of these references?

A. Yes.

Q. In paragraph 24 of your declaration you refer to Exhibit Numbers 1031, 1032, 1033 and 1034, correct?

A. Yes.

Q. And these are the declarations of Dr. Tucker?

A. Yes.

Q. In preparing your declaration did you review each of these declarations?

A. Yes.

Q. Did you review each of them in their entirety?

A. Can you expand on that question? I don't understand quite what you mean by that.

Q. Did you review each of Exhibit Numbers 1031, 1032, 1033 and 1034 in their entirety?

A. I understand the numbers but I

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don't understand what you mean by, quote, in their entirety.

Q. Did you review the entire declaration or just part of it?

A. I reviewed the entire declaration.

Q. And that's true for each of Exhibits 1031, 1032, 1033 and 1034?

A. Yes.

Q. Other than lawyers for Stratus Medical, did you speak to anyone else about the substance of your testimony when you were preparing your declaration?

A. No.

Q. At any point did you speak to Cody Jorgensen at Stratus Medical about the testimony in your declaration?

A. About the testimony, no.

Q. During the time period you were preparing your declaration did you speak to Cody Jorgensen?

A. Yes.

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Q. And were lawyers for Stratus Medical present during those conversations?

A. Yes.

Q. I apologize. I was looking for a document I could not locate, so I'll look for it during a break.

At any point, have you spoken to Mark Russo about the testimony in your declaration?

A. No.

Q. Have you spoken to Mark Russo at all in relation to the IPR's addressed in your declaration?

A. No.

Q. During the time period during which you were preparing your declaration did you speak with Mark Russo?

A. No.

Q. Have you corresponded with Mark Russo by e-mail or text in relation to the IPR proceedings addressed in your declaration?

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A. No.

Q. Have you corresponded with Mark Russo by any other means in relation to the IPR proceedings addressed in your declaration?

A. Could you repeat that question? It was compound, just the beginning.

Q. So earlier I asked if you had corresponded with Mark Russo by e-mail or text in relation to the IPRs addressed in your declaration. I think your answer was, "No". Correct?

A. Yes.

Q. So my question is: Did you correspond with Mark Russo by any means other than e-mail or text in relation to the IPR proceedings addressed in your declaration?

A. No.

(Exhibit 2001 was marked for identification.)

Q. Mr. Crosby, I handed you an exhibit previously marked as Exhibit 2001 in

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these proceedings.

Do you see that?

A. Yes.

Q. Have you ever seen this document before?

A. No.

Q. In preparing your declaration, did you, at any point, review this document?

A. No. Hard to review if I haven't seen it.

Q. I agree. In preparing your declaration, did you at any point review a draft of this document?

A. No.

Q. And in preparing your declaration, did you, at any point, review written materials that were prepared by Mr. Russo?

A. I did not review any written materials prepared by Dr. Russo, no.

Q. Did you review any written materials that were provided to you by

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Mr. Russo?

A. No. Let me modify one of those answers, if I may. Dr. Russo published a paper some time ago. I did review that paper but it's publically available, it was not provided by him.

Q. Do you remember what paper that was?

A. Oh, gosh, I think it was something like a history of radiofrequency neurotomy.

Q. And you recall whether that article by Mr. Russo was provided as an exhibit in these IPR proceedings?

A. If I remember correctly, I think it was referenced in the patent owner's response. I don't know if it was in Dr. Russo's declaration because I haven't read it.

Q. And that would have been the only written material prepared by Dr. Russo that you reviewed as part of your preparing

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your declaration?

MR. PHILLIPS: Objection. Form.

A. Well, I reviewed it but it wasn't necessarily as part of preparing my declaration.

BY MR. KELLY:

Q. Okay. Okay. I have some questions for you about your background and experiences. Let's start in your declaration at paragraph 6, if you could turn there.

And in paragraph 6 of your declaration you state that you are, [As read] "A named inventor on over 50 issued U.S. Patents and public applications and foreign equivalence", correct?

MR. PHILLIPS: Objection. Form.

A. That's what it says on paragraph 6, yes.

BY MR. KELLY:

Q. And you testified here in paragraph 6 that, [As read] "Some of my patents focus on the application of

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electromagnetic energy to nerves and some focus on radiofrequency ablation"; is that correct?

A. That's correct. That's what the words say.

Q. What in the difference between these things?

A. Between what?

Q. What is the difference between radiofrequency ablation and applying electromagnetic energy to nerves?

A. Radiofrequency energy is one type of electromagnetic energy and if it's applied to nerve or to any other tissue, radiofrequency energy can cause destruction of tissue.

So you can apply electromagnetic energy to, for example, stimulate a nerve or destroy a nerve or to provide a sensory output from a nerve. There are lots of applications.

Q. You mentioned destroying nerves just now. Is that the same as

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ablation?

A. It can be, but not necessarily.

Q. What's the difference between ablating a nerve and destroying a nerve?

A. My understanding, not being a physician, but my understanding is that with radiofrequency ablation of a nerve depending on how the energy is applied and for what duration and to what temperature the tissue is allowed to heat, it may completely destroy the nerve or destroy some of the fibers in the nerve.

In some clinical applications the objective is to stand or stop conduction of same fibers while allowing the other fibers to continue to function.

So if you completely destroy a nerve you might lose some functions that you want to keep. So it's a precise application of energy to destroy just the functions you want to destroy.

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Q. And I believe you mentioned stimulating nerves also, right?

A. Yes.

Q. Is there a difference between stimulating the nerve and ablating the nerve?

A. There can be, yes.

Q. What is the difference?

A. The purpose of stimulating a nerve would be to more often than not produce an action potential that goes up or down a nerve. So in other words, to provide an electrical stimulation which mimics or replaces a function of the nerve whereas radiofrequency ablation of a nerve, the intention would be to destroy a particular function of the nerve.

Q. In paragraph 6 where you indicate that some of my patents focus on radiofrequency ablation, you're not limiting that to ablation of nerve tissue, right?

A. I have several patents that refer to radiofrequency ablation. One, if I

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remember correctly refers to radiofrequency ablation for the destruction of breast cancer tissue and there are a couple of other patents refer to radiofrequency ablation of a nerve.

Q. So in paragraph 6 when you say, [As read] "Radiofrequency ablation," you mean ablating any kind of tissue with radiofrequency energy?

A. Well, not necessarily, no.

Q. Well, I'm trying to understand the distinction that you've made in paragraph 6 between radiofrequency ablation and the application of electromagnetic energy to nerves.

And it sounds like the application of electromagnetic -- I'll start over. In paragraph 6 when you refer to the application of electromagnetic energy to nerves, that electromagnetic energy has to be applied to nerve tissue, right?

A. More often than not, yes.

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Q. But if you're applying electromagnetic energy to nerves that doesn't mean you're ablating the nerve tissue necessarily?

A. Not necessarily, no.

Q. When you say "radiofrequency ablation," that means the tissue that's receiving the radiofrequency energy must be ablated?

A. Not necessarily, no.

Q. Well, some of the tissue has to be ablated, right?

A. Well, yes but as I said sometimes the purpose of radiofrequency ablation of a nerve is not to destroy that tissue but the expand the tissue so it stops its function.

It's a bit like saying, you know, you're a driver, so you can drive a motorcycle or a truck, right, it's the same thing as driving.

Well, no, they're not. So you have to understand what the application is to be able

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to answer your question.

Q. Okay. Let me see if I can ask it a little more clearly. If a device is designed for radiofrequency ablation, it's not necessarily designed for ablating nerve tissue specifically?

A. Well, yes, of course it is. You can't design a device for ablation of a tissue without knowing the tissue you are trying to ablate. The device you use for ablating something in the brain is going to be something quite different for use for ablating a liver cancer. You can't just say design a device for radiofrequency ablation or for radiofrequency --

THE COURT REPORTER: I'm sorry. You're talking too fast.

A. They're not the same.

BY MR. KELLY:

Q. Well, let me ask it another way. If a device is designed for applying electromagnetic energy to nerves, that

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doesn't necessarily mean the device is designed for ablating nerve tissue?

A. When you say a device designed for applying electromagnetic radiation to a nerve, there are multiple elements of that device.

One is the electrode system which may be adjacent to the nerve. The other is a source of the path. I don't understand your question, which element are you talking about?

Q. You mention earlier that some devices are designed to stimulate nerves, right?

A. Correct.

Q. And some devices are designed to ablate nerve tissue, correct?

A. Yes.

Q. In both of those devices would be applying electromagnetic energy to nerves?

A. Yes, they may be.

Q. If we know that a device is

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designed for applying electromagnetic energy to nerves, that doesn't necessarily mean that it's designed for ablating the nerve tissue?

A. Well, with respect it's a question that doesn't make sense. As a BioMedic engineer you design a device knowing what the type of tissue and what the function is and knowing what the clinical application is.

You don't design a device just for a particular mechanical or electrical function without knowing the application and the target tissue, that doesn't work like that.

Q. Really my question relates to paragraph 6 of your declaration, and I'm trying to understand when you say, [As read] "My patents focus on the application of electromagnetic energy to nerves." That includes devices that are not designed for ablating nerve tissue?

A. That is true.

Q. Okay. I think you mentioned

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earlier that you have worked on devices for ablating breast cancer tissue, right?

A. That is true. Yes.

Q. So a device designed for ablating breast cancer tissue and a device designed for ablating nerve tissue are both examples of radiofrequency ablation devices?

A. In the same way that a motorcycle and a semitrailer are both examples of transport, but they're completely different.

Q. Got it. If a device is designed for RF neurotomy, then that device is also an RF ablation device, right?

A. I go back to my previous statement. Which part of the device are you talking about? In my world the device contains many elements.

You could be talking about the generator, the cables, the wires, the temperature sensor, the user interface, I need some more specificity to be able to

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answer that question.

Q. If a device -- let me see if I can make it clearer. If you have a needle designed for RF neurotomy that needle is necessarily an RF ablation needle, correct?

A. For which application?

Q. If the needle is designed to achieve RF neurotomy then it must be capable of ablating tissue, right?

A. In which anatomical location?

Q. Any anatomical location.

A. Well, generally, yes.

Q. So I'm just trying to understand the words that you're using in paragraph 6. And it sounds like ablation means that the nerve has to be destroyed or otherwise rendered inoperable?

MR. PHILLIPS: Objection. Mischaracterizes.

A. I'm reading paragraph 6 and trying to find those words and I can't find them.

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BY MR. KELLY:

Q. Well, you used the word ablation and so I'm trying to understand -- it sounds like there's a difference between stimulation and ablation; is that right?

A. In many circumstances, yes.

Q. So when you -- it sounds like some of your patents focus on applying electromagnetic energy to nerves but not necessarily ablating nerves?

A. That is true.

Q. And some of your patents focus on radiofrequency ablation of tissue but not necessarily nerve tissue?

A. That is true.

Q. If you look at paragraph 5 of your declaration I understand from this paragraph you have a Bachelor's Degree in Electrical Engineering and a Masters Degree in Engineering Science, correct?

A. Yes.

Q. Did you ever attend medical

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school?

A. As part of my bio-medical engineering courses I attended several classes at the medical school at the University of Alban.

Q. Have you ever received a medical degree?

A. No.

Q. So you're not a medical doctor?

A. No.

Q. And I presume you do not hold any medical board licenses?

A. No.

Q. Have you ever performed an RF neurotomy procedure?

A. On what animal?

Q. On any animal.

A. Yes.

Q. What animal have you performed an RF neurotomy procedure on?

A. A goat.

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Q. And could you describe that procedure?

A. I try to not. I have not performed radiofrequency neurotomy procedures on humans. I've done some animal work on radiofrequency neurotomy on other animals.

Q. And in those animals you were ablating the nerve tissue of the animal?

A. Not necessarily. It was experimental work to figure out what sort of stimulation, energy and tops of electrodes we might need for that.

So the purpose wasn't necessarily to ablate the nerve it was to explore the types of designs that we might find most useful for doing that.

Q. Have you ever performed a procedure that resulted in the ablation of tissue?

A. I'm trying to understand your question. A procedure that was the manipulation of tissue.

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Q. That ablated the tissue?

A. That ablated the tissue. On which animal?

Q. Any animal.

A. Well, yes, some of the work that I talked about before we were trying to -- you know, part of the work of an engineer working as a research and development team with clinicians to come up with a design that meets the clinical need and if the -- it's a few years ago so I'm trying to remember. If the objective was to design a device for ablation, then I would imagine that in some of those experiments we achieved that. Yes. I don't recall the exact thing at that point.

Q. Are you a member of any pain medicine association?

A. Not now.

Q. Have you ever been a member of any pain medicine association?

A. I used to be a member of the

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North American Neuromodulation Society, NANS which focuses on neuromodulation primarily for pain.

Q. And during what time frame were you a member of the North American Neuromodulation Society?

A. Oh gosh. I think I paid my first dues about 2011 thereabouts, and then I think I stopped paying my dues for the 2018 year.

MR. KELLY: Mr. Crosby, I've handed you a document that has been previously marked Exhibit 2007.

(Exhibit 2007 was marked for identification.)

BY MR. KELLY:

Q. Do you recognize this document?

A. Yes, I do.

Q. Is this your CV?

A. It's my CV as of the date written on the bottom left-hand corner.

Q. Was this CV complete and

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accurate as of May, 2025?

A. I believe so, yes.

Q. If you turn wit me to page 7 of your CV there's a heading that reads: "Scientific Publications".

A. Yes.

Q. Do you see that heading?

A. I do.

Q. And is the list following the heading, Scientific Publications a complete list of scientific articles in which you are accredited as an author or contributor?

A. My recollection is this is a list of the publications which have been peer reviewed. I have many other publications that are not peer reviewed, so I did not include them on that list.

Q. I have some questions about these publications and the subject matter that's addressed in them.

A. Okay.

Q. When I ask you these

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questions, I'm going to use the term RF neurotomy.

A. Okay.

Q. What I mean by RF neurotomy is that there's ablation of nerve tissue. Is that okay?

A. We can take that as a working definition, yes.

Q. If we assume that RF neurotomy refers to the ablation of nerve tissue are any of the scientific publications listed in your CV directed to RF neurotomy?

A. None of these publications, no.

Q. Are any of the scientific publications listed in your CV directed to RF ablation?

A. I'm trying to understand your question referring to -- you know, of any tissue?

Q. Yes, and I'm going to ask you this question repeatedly in relation to a lot

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of documents so I want to make sure we're on the same page about what I mean.

So when I say "RF neurotomy" I mean ablation of nerve tissue and when I say "RF ablation" I mean ablation of any kind of tissue.

Do you understand the distinction?

A. I do.

Q. So just looking back at the scientific publications in your CV, I think you testified earlier that none of those scientific publications are directed to RF neurotomy?

A. Sorry. Is that a question?

Q. Yes, is it correct that none of the scientific publications listed in your CV are directed to RF neurotomy?

A. That is correct.

Q. And are any of the scientific publications listed in your CV directed to RF ablation?

A. Not in this list, no. Several

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of my patents are, of course.

Q. I'm glad you brought it up. On page 6 of your CV there's a heading that reads: "Issued U.S. Patents." Do you see that heading?

A. I do.

Q. And is the list following the heading issued U.S. Patents a complete list of issued U.S. Patents that name you as an inventor?

A. As of May, 2025, yes.

Q. Are any of these issued U.S. Patents directed to RF neurotomy?

A. Yes.

Q. Which ones?

A. 10661078. Sorry. Can I go back to your question. You have two types of questions. Which one was that one again?

Q. So my question was: Are any of the issued U.S. Patents listed in your CV directed to RF neurotomy?

A. Yes, that's what I thought.

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So this is just a neurotomy question. Okay. 12048844. There may be a couple others in that family but I cannot -- I'm just looking at the numbers in the titles. I'm sorry. I didn't realize this was a memory test on my 50 patents or I would have prepared slightly differently.

Q. Off the top of your head do you recall whether your named inventor on U.S. Patents directed to RF neurotomy that are in more than one patent family?

A. I think there are two families but you're asking me to remember details of all these patents.

Q. So there's a lot of patents but we're sure 10661078 and 12048844 are directed to RF neurotomy?

A. Well, they include RF neurotomy as one of the things that's in the patent, yes.

Q. Perhaps you haven't reviewed it but do you recall generally the subject

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matter addressed in 10661078?

A. My recollection is this is for an implantable device which includes several different ways of stimulating nerves and a module for generating greater frequency ablation of the nerve in an implantable device. As the literature will show radiofrequency neurotomy for pain often needs to be repeated.

So one of the basic ideas of this invention is that rather than having to bring a patient in every six months or so for another procedure, you could implant a device which includes a radio frequently generator which would deliver the radiofrequency signal to a permanently implanted electrode adjacent to the nerve.

So this takes the idea of radiofrequency neurotomy one extra step to be able to do it with an implantable device.

Q. So the device is I guess surgically implanted into the patient?

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A. That is correct.

Q. And how long is it operable in the patient?

A. Ten years.

Q. Aside from the issued patents you've identified as being directed to RF neurotomy, are any of the issued U.S. Patents listed in your CV directed to RF ablation?

A. As I said before the patents aren't necessarily directed to RF ablation they include RF ablation. It's one of the several things that are in the Patent disclosure and there's another patent which there is -- directed towards RF ablation but I have to remember which one it is. That's 6106524.

Q. Do you recall any others?

A. They're the few that spring to mind right now.

Q. On page 4 of your CV there's a heading that reads, "Select Expert Engagements and Testimony".

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A. Yes.

Q. Do you see that heading?

A. I do.

Q. Is it correct that you were retained as an expert witness in each of the engagements listed under this heading?

A. I was engaged as an expert, yes.

Q. So you weren't a fact witness in these cases?

A. I see what you're saying. Are you asking -- I don't quite understand the question.

Could you please be clearer on the question.

Q. So the heading says, "Select Expert Engagements and Testimony".

A. Yes.

Q. So from that heading I assumed that all of the cases that you've listed here you were an expert witness and I'm just wondering if my assumption is correct?

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A. I interpret it from a previous question there's a distinction between an expert witness and a fact witness. Is that what you're asking because I wasn't sure?

Q. Yes.

A. I think that these are all expert witness cases, yes.

Q. In any of the expert engagements listed in your CV were you asked to opine on subject matter that included RF neurotomy?

A. Not for RF neurotomy, no.

Q. In any of the expert engagements listed in your CV were you asked to opine on subject matter that included RF ablation?

A. Yes.

Q. Which ones?

A. I knew you were going to ask that. Now I got to go back again.

On the bottom of page 5 Case 337 TA 1356 in the International Trade Commission. This

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has to do with certain dermatological treatment devices and components.

So the basic idea here is radiofrequency ablation for dermatological treatment, treatment of skin, skin resurfacing. So that case in the International Trade Commission which then developed into an IPR.

So I supported the declaration in support of the patent known as preliminary response and was deposed. Appeared at trial in the RTC, three days; were deposed, two days; so that was about radiofrequency ablation of skin.

Q. So in that case --

A. There's one other but okay.

Q. I'm sorry. You can finish. If there's more you wanted to identify, go ahead.

A. Yes, Case No. 21 STCV 30687. This was a product liability case in which a patient had a plastic surgery procedure which involved radiofrequency ablation of fat

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tissue and she alleged an injury and I examined the electrosurgery equipment that we used for that and wrote a declaration in support of the MSJ.

Q. Okay. Any others you can think of?

A. That's all for the moment, that I can talk about.

Q. So just to understand, in the ITC case you mentioned which ends in 1356, you said that involved RF ablation of dermatological tissue; is that correct?

A. Yes. There's another one I just realized on the third one down on page 5. Case No. 337 TA 1262 also in the International Trade Commission which is a similar case regarding Imode and Illoda. For this is about skin resurfacing devices which is radiofrequency ablation of skin.

Q. Is it true that in both of the ITC cases you mentioned the RF ablation at issue was ablation of skin tissue?

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A. Correct.

Q. And in the -- you mentioned the case in the Superior Court of Los Angeles ending in 30687 and that one involved ablation of fat tissue?

A. That is correct.

Q. Any others you can think of now?

A. Not that I can recollect today.

Q. On page 1 of your CV is a heading that reads: "Professional experience". Do you see that heading?

A. Yes.

Q. I've got several questions about your experience and about your professional experience which is wide and varied. So if you want to take a break now we can or we can keep going and I can ask these questions.

(Off record discussion was held at 9:47 a.m.)

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BY MR. KELLY:

Q. The professional experience in your CV is divided into current positions beginning on page 1 and prior positions beginning on page 2, correct?

A. Yes.

Q. Okay. Let's start with current positions. You're currently the CEO and managing partner of Bio Medical Business Resources, LLC; is that right?

A. Yes.

Q. And it looks like you've been running that consulting and advisory business since 1995?

A. Correct.

Q. Other than for your work on the IPR proceedings you're testifying on today, have you ever advised or consulted for Stratus Medical?

A. No.

Q. Have you ever advised or consulted for BioMerics?

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A. The name, please?

Q. BioMerics, B-I-O-M-E-R-I-C-S.

A. No.

Q. Have you ever advised or consulted for NIMBUS Concepts?

A. No.

Q. In your work for Bio Medical Business Resources, LLC, have you ever provided consulting or advisory services relating to an RF neurotomy device?

A. No.

Q. In your work for Bio Medical Business Resources, LLC, have you ever provided consulting or advisory services relating to an RF ablation device?

A. Other than the expert testimony that we've already talked about; is that what you're asking me?

Q. Anything that we haven't already discussed.

A. Okay. No.

Q. In the current position

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section of your CV, I see you currently hold positions at ClinNEXUS Inc., SimTutor Inc., Quench Medical and the University of California Irvine; is that right?

A. Yes.

Q. Has your work for any of those entities involved RF neurotomy technology?

A. I work with several teams of students, often graduate students at the University of California Irvine who have ideas for new medical devices or medical procedures.

I probably looked at 30 or 40 projects while I've been there. I recollect vaguely one that had to do with radiofrequency neurotomy but that's about the extent of my recollection.

Q. So other than that you can't recall any that relate to RF neurotomy?

A. No.

Q. And has your work for any of those entities involved RF ablation

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technology?

A. Similar answer. At the University of California Irvine I recollect one team that was looking at RF ablation of skin. That's about as much detail as I can remember.

Q. And other than that you can't recall any other examples related to RF ablation technology?

A. No.

Q. Turning to your prior positions in your CV, I see you were CEO and director of Main Stay Medical International, PLC from 2009 to 2017, correct?

A. Yes.

Q. Did your work from Main Stay Medical involve RF neurotomy?

A. In some type, yes.

Q. Could you describe the part of your work for Main Stay Medical that involved RF neurotomy?

A. Main Stay Medical was a

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company that I founded with a scientific physician entrepreneur to provide treatment for chronic low back pain.

As part of that work, I was aware of all possible treatments for chronic low back pain that were in current use including radiofrequency neurotomy and it was my work at Main Stay that led to the generation of those patents that we talked about which is an implantable device for radiofrequency neurotomy.

So during those eight years I was deeply immersed in treatments for back pain including radiofrequency neurotomy. I read a lot of literature, I've got about 5,000 references in my library, went to many conferences, spoke to many physicians as part of my general work in the field of chronic low back pain.

Q. So other than what you just described, did your work for Main Stay Medical involve RF ablation technology?

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A. In part, yes.

Q. So I take from your answer that your work at Main Stay Medical involved partially ablating nerve tissue and partially ablating other types of tissue?

A. Partially ablating other types of tissue is one of the treatments for chronic low back pain that sometimes works.

Q. Does your work at Main Stay Medical involve ablating tissue that was not nerve tissue?

A. I'm not sure quite what you mean by "involve". You mean, did I do the procedure, no. Was I aware of it and saw it and knew about it and read the literature, yes.

Q. You've explained to me that at Main Stay you developed a device that is implantable that performs RF neurotomy, right?

A. I patented a device, yes.

Q. Did Main Stay Medical also

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make a device that ablated non-nerve tissue?

A. No.

Q. So did Main Stay Medical ever work on a device for ablating tissue that was not nerve tissue?

A. What do you mean "work on"?

Q. Well, earlier I asked if your work for Main Stay Medical involved RF neurotomy and you explained that in fact it did and you gave some examples of that.

And then I asked other than what you just described, did your work for Main Stay Medical involve RF ablation technology and I recall that you said to some degree, yes; is that right?

A. That's correct.

Q. So what I'm trying to understand is what piece of your work at Main Stay Medical involved RF ablation technology beyond RF neurotomy?

A. Your question was not that. Your question was did I work on. So I'm not

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quite sure what you mean "work on". Did I develop devices, did I read about it, did I talk to physicians. I don't understand your question.

Q. Did you -- well, you're an engineer by training, right?

A. Yes.

Q. Did you contribute to the engineering of any device used for ablating tissue other than nerve tissue at Main Stay Medical?

A. No.

Q. Did you work on designing a device for treating -- sorry. I'll rephrase.

Did you work on designing a device for ablating tissue other than nerve tissue at Main Stay Medical?

A. No.

Q. While you were working at Main Stay Medical, did the company Main Stay Medical design a device for ablating tissue other than nerve tissue?

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A. No.

Q. Can you give me any example of work that occurred at Main Stay Medical that involved ablating tissue other than nerve tissue?

A. As I said at Main Stay we had to be aware of the whole constellation of therapies and treatments for chronic low back pain.

So I was aware of what those therapies were, I read the literature, I spoke with physicians, consultants, I sometimes observed procedures. That doesn't mean I necessarily worked on developing a product to do that, but I had to be aware of all the competing therapies to the one that we were working on.

One of those competing therapies is radiofrequency ablation of what's called the nucleus pulposa, P-U-L-P-O-S-A, of the disc between vertebra sometimes in what's called discogenic pain. The nerves there can be overly sensitive and one treatment is

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radiofrequency ablation of the interior of the disc to reduce the pain of back pain. So I was aware of that, read the literature on that, saw some procedures, spoke to some physicians, but to your specific question I didn't develop a device for that.

Q. Okay. Let's move on to VentriCorp. Your CV indicates you were the CEO and director of VentriCorp from 2005 to 2009?

A. Yes.

Q. Did your work for VentriCorp involve RF neurotomy?

A. No.

Q. Did your work for VentriCorp involve RF ablation?

A. I'm sorry to do this to you. Define that term again, RF ablation in the context of VentriCorp?

Q. So again when I say "RF ablation" I mean, ablation using radiofrequency energy of any kind of tissue

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not just nerve tissue.

A. Well, yes, of course.

Q. Okay. Could you describe that?

A. Any surgical procedure that uses electrosurgery is by definition radiofrequency ablation of tissue.

So if you're doing surgery to implant an artificial heart which is what we were doing at VentriCorp. You are using electrosurgery radiofrequency ablation to open the wound cauterize the tissue and then close it up again. In fact, any surgical procedure will use radiofrequency ablation in most of these businesses here.

Q. While you were at VentriCorp did they make or design any products used for RF ablation?

A. No.

Q. From 1999 to 2004 your CV indicates you were the CEO and director of Ischemia Technologies. Did your work for

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Ischemia Technologies involve RF neurotomy?

A. No.

Q. And did your work for Ischemia Technologies involve RF ablation?

A. No.

Q. From 1996 to 1997 you were CV indicates you were the CEO and director of NeoVision Corporation, correct?

A. Yes.

Q. And did your work for NeoVision involve RF neurotomy?

A. No.

Q. Did your work for NeoVision involve RF ablation?

A. In part, yes.

Q. Can you describe that?

A. NeoVision was a company we developed a device for three dimensional ultrasound image guidance of minimally invasive breast biopsy and sometimes radiofrequency ablation under ultrasound guidance of a suspected cancerous lump in the

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breast.

And it was this work that led to that patent we talked about before which is how to do cauterization of breast tissue under ultrasound guidance.

Q. That was U.S. Patent Number 6106524?

A. I think that's the one. Let me check. Yes.

Q. Back to your CV. From 1989 to 1995 your CV indicates you held various VP level positions at Telectronics Pacing Systems; is that correct?

A. Yes.

Q. Did your work for Telectronics involve RF neurotomy?

A. Adjacently.

Q. In what way?

A. When I was the vice president of research and technology, we were doing some work exploring if ablation of some of the nerves to the heart muscle would alter

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the heart function in animals; didn't go anywhere.

Q. You said ablation of nerves to the heart muscle?

A. Yes.

Q. So where are those nerves located?

A. In the chest.

Q. So they're adjacent to the heart?

A. To the heart muscle.

Q. Out of curiosity, what do those nerves do?

A. How long have you got?

Q. Not long.

A. They help regulate the heart beat. Let's put it that way.

Q. And other than what you've just described did your work for Telectronics involve RF ablation?

A. Only as I talked about before. Any time you do surgery and using

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electrosurgery they're using RF ablation.

Q. During your time at Telectronics, Telectronics did not make or design a device for RF ablation?

A. No.

Q. From 1981 to 1986 your CV indicates that you were a R&D executive at Cochlear Corporation; is that right?

A. Yes.

Q. Did your work for Cochlear involve RF neurotomy?

A. No. Work with Cochlear involved placing electrodes adjacent to auditory nerves in the cochlear, the inner ear, and we work with nerves all the time but we were trying not to destroy them.

Q. What were you trying to do?

A. Restore hearing to people who were profoundly deaf.

Q. So when you're doing that what are you doing to the nerves if you're not ablating them?

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A. You're delivering electrical stimulation to the nerves to stimulate the signal that would have happened had the ear been working properly to fool the brain into thinking that it's hearing something.

Q. Okay. So this is an example of stimulating nerves as opposed to ablating them?

A. Correct.

Q. From 1978 to 1981 your CV indicates that you held a -- sorry. I'll rephrase.

From 1978 to 1981 your CV indicates that you were a director Northern Region Bio Medical Engineering Service at RNSH, Sydney, correct?

A. Yes. Royal North Shore Hospital.

Q. Did your work at Royal North Shore Hospital involve RF neurotomy?

A. Maybe. I can't remember. I was involved in many, many research projects.

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It was a couple of years ago.

Q. You don't recall any from 1978 to 1981?

A. Preferably not.

Q. And I think I know the answer but did your work for Royal North Shore Hospital involve RF ablation?

A. A lot.

Q. Could you describe that?

A. As we talked about before electrosurgery is the standard of care for surgical procedures. I was responsible for purchasing, maintaining, training and the use of and sometimes designing electric surgical equipment or ablation equipment.

Q. You were designing ablation equipment at the hospital?

A. Some experimental equipment, yes.

Q. What was that equipment used for?

A. There were some that was used

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for -- again, it's going long back in time. I did some work with the intensive care ward that was looking at RF ablation of decubitus ulcers, D-E-C-U-B-I-T-U-S, which is otherwise known as bed sores, particularly with paralyzed patients who lie in bed.

So looking at radiofrequency ablation of the margins of bed sores; that's one particular project I can recall

Q. Do you recall any others?

A. I can't recall.

Q. Okay. Okay. I think we have made it through your CV. Do you want to take a break before we switch subjects?

THE WITNESS: Excellent idea.

MR. KELLY: All right. We'll go off the record.

(A break was taken at 10:06 a.m.)

(Proceedings resumed at 10:16 a.m.)

BY MR. KELLY:

Q. Mr. Crosby, I've handed you a copy of a document marked Exhibit 2008. Do

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you recognize this document?

A. Yes.

(Exhibit 2008 was marked for identification.)

BY MR. KELLY:

Q. Can you describe it for me?

A. It's a document which is incorporated by a reference in my declaration, if I remember correctly, which analyzes Claim 1 of the three patented issues in this case and maps the claim language onto the Stratus NIMBUS device.

Q. Okay. Let's keep that document handy and also turn to paragraph 21 of your declaration. You indicate in paragraph 21 that, [As read] "You personally inspected the NIMBUS device and compared it to the claims of the Stratus patents, correct?

A. Yes.

Q. Do you recall roughly when you personally inspected the Stratus device?

A. May 18th at about 3 o'clock in

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the afternoon.

Q. It must have been a memorable experience. Did you take any photos of the device that you personally inspected?

A. Yes.

Q. Did you include any of those photos in your declaration?

A. I think some of those photos are included in this claims chart.

Q. Which of the photos -- you're referring to Exhibit 2008?

A. Yes.

Q. Which of the photos in Exhibit 2008 did you take?

A. I can't recall because some of the illustrations here are from the Stratus literature and some are from photographs that I took so I'm not sure I can exactly tell you which is which.

Q. Can you identify one example of a photo that you took in Exhibit 2008?

A. I think the photo on the

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bottom of the front page is a photo I took, but I can't promise that to be true. As I said, I took lots of photos.

Q. You're referring to page 1 of Exhibit 2008?

A. Yes. The left-hand column is marked "Square parenthesis 1D".

Q. And the image included in 1D you believe is a photo you took of the device you personally inspected?

A. I believe so but I couldn't swear to it.

Q. Okay. And so we're clear, you inspected a physical NIMBUS device, correct?

A. I inspected two physical NIMBUS devices.

Q. Okay. What two NIMBUS devices did you inspect?

A. Yes. There are two different lengths of the neurotomy needle and two different lengths of the disposable radiofrequency probe. So when I say the

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NIMBUS device I mean the needle with the probe but it was actually four separate packages because they're delivered in sterile packages.

Q. Do you recall the lengths of the needle and the probe that you personally inspected?

A. I think there was one of 10 centimeters and one of 15 centimeters.

Q. So when you say the NIMBUS device, you mean a NIMBUS needle having a particular length and a NIMBUS probe having the same length?

A. Yes.

Q. And the ones that you inspected were 10 centimeters and 15 centimeters?

A. My recollection, yes.

Q. And I just want to be clear about this. You personally inspected both a NIMBUS needle and a NIMBUS probe?

A. Yes.

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MR. PHILLIPS: Objection. Form.

A. But I think I said two needles and two probes.

BY MR. KELLY:

Q. Okay. Do you recall the model number of the NIMBUS needle you personally inspected?

A. No.

Q. Do you recall the model number of the NIMBUS probe you personally inspected?

A. No.

Q. Let's look back at Exhibit 2008 which I handed you, that's your claim chart. I think you have it right there.

A. Yes.

Q. Did you prepare Exhibit 2008 yourself?

A. I had assistance with the Laurence & Phillips Law Firm in preparing this exhibit.

Q. Did you speak to anyone about Exhibit 2008 other than the lawyers at

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Laurence & Phillips?

A. No.

Q. There's a number of images throughout Exhibit 2008, and if I understand your testimony earlier, some of them are photos that you took and some are not images that you took, correct?

A. That's correct.

Q. Can you give me some examples of photos that are -- or images in 2008 -- sorry. I'll rephrase.

Can you identify some examples of images included in Exhibit 2008 that are not photos you personally took?

A. The illustration on page 7 of 10 is not an illustration I personally took because it's a video.

Q. How about on page 1, the images of the probe included for element 1A. Are those photos that you took?

MR. PHILLIPS: Objection. Form.

A. I can't recall. I did take

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images of the probes, but I don't know if the images in this document are the ones that I took or if there are -- there are quality images of this one or the other that was from some of the literature of Stratus. I just don't recall.

BY MR. KELLY:

Q. From what literature were these images obtained?

A. I don't recall if it was obtained from the literature or if these are pictures that I took. Some of the images are from the Stratus literature, some of them marketing literature, some of them are indications for user manuals. So I can't tell you exactly where each image came from. I just don't recall.

Q. So your understanding is that some of the images were taken from user manuals or marketing materials from Stratus?

MR. PHILLIPS: Objection. Foundation.

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A. My recollection it was materials from Stratus but I can't be specific as to which literature. I don't recall.

BY MR. KELLY:

Q. Did you obtain the images?

A. Did I what?

Q. Did you obtain the images that were taken from Stratus literature?

A. Documents were provided to me which contained the images. I didn't obtain the documents myself.

Q. Are there any images in Exhibit 2008 that you did not copy and include into Exhibit 2008?

MR. PHILLIPS: Objection. Form.

A. There may be. As I said, I pointed out that illustration of the spine. I think it was -- have to be careful what I say because it may be a privileged conversation about how it was obtained.

BY MR. KELLY:

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Q. So I'll be direct. The images that are included, for example, with element 1E and 1F, those appear to be computer-generated graphics to me and I just want to make sure that your testimony is that you believe these are photos of a physical product; is that right?

A. I don't think that's what I said. I don't recall where those images arose from. I don't think these are photographs that I took.

Q. Okay. But you testified earlier that the image included with element 1 D you believe was a photo you took, correct?

A. I think so.

Q. Sitting here today you can't identify any other photos in Exhibit 2008 that you're confident that you personally took?

A. It's difficult for me to do so. No. I didn't realize it was going to be

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a memory test.

Q. Do you know whether the Stratus literature that contained one or more of the images included in Exhibit 2008 was provided as an exhibit in these IPR proceedings?

A. I'm trying to understand the question. Could you rephrase the question for me, please.

Q. So I understand from your testimony that you believe at least some of the images in Exhibit 2008 were obtained from Stratus literature, correct?

A. Yes.

Q. Was any of that Stratus literature submitted as an exhibit in these IPR proceedings?

A. I don't know.

Q. If you refer to page 1 of Exhibit 2008 there is an image of the needles tip provided in the row for claim element 1D, right?

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A. Yes.

Q. And here it appears the needle has a solid tip and two filaments in a deployed configuration; is that right?

A. Yes.

Q. When you personally inspected the needle -- I'll rephrase.

When you personally inspected the NIMBUS needle did you ever deploy the needle filaments?

A. Can you repeat the question? I think you may have made a mistake in that question.

Q. When you personally inspected the NIMBUS needle, did you ever deploy the needles' filaments?

A. Yes.

Q. How did you deploy the filaments?

A. There's a hub at the proximal end of the needle which is rotatable and when it rotates in one direction the filaments or

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times are deployed and when it rotates in the other direction the filaments or times are retracted.

Q. Did you both deploy and retract the filaments when you personally inspected the devices?

A. Yes, several times.

Q. If you refer to page 3 of Exhibit 2008 there's a row associated with Claim Element 1I in the 782 Patent; do you see that?

A. Let me read it first. I've read it. What's the question, please?

Q. Claim Element 1I requires that the radiofrequency probe is, [As read] "Accepted in the lumen and is in physical contact with the conductive portion at the distal end of the radiofrequency neurotomy needle," correct?

A. Yes.

Q. And in the far right column associated with Element 1I you indicate that

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in the NIMBUS device you inspected, [As read] "The RF probe is inserted into the lumen and is in physical contact the conductive portion," correct?

A. Yes.

Q. Did you ever insert the NIMBUS probe into the NIMBUS needle?

A. Yes.

Q. When you did that how could you tell that the probe was in physical contact with the conductive portion of the distal end of the needle?

A. I looked at it under a microscope.

Q. You look at what a microscope?

A. The tip where I can see the probe in physical contact with the distal end of the needle.

Q. Did you disassemble any portion of the NIMBUS needle or NIMBUS probe?

A. Well, I removed the probe from the needle but I didn't disassemble the

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needle.

Q. How could you see the probe inside the needle using a microscope?

A. I think I said I verified that the probe touched the tip of the needle I didn't look the entire length of the needle but I looked at a microscope. I can see the tip of the probe had physical contact with the inside of the tip of the needle.

Q. So when the probe is inside the tip of the needle, how can you see it with a microscope?

A. You look at it. I looked at the end.

Q. So did you remove the tip of the needle from the needle's cannula?

A. That doesn't make sense.

Q. So when I look at the image included with figure 1D, for example, the tip of the needle looks solid to me aside from the ports where the filaments exit.

A. Okay.

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Q. So if the probe is inside the needle's tip I'm not understanding how you can see the probe when it's inside a solid tip.

A. I understand your question.

Q. Can you explain to me how you could see the probe when it was inside the needle's tip?

A. I guess I couldn't. The probe was extended its entire length and the length of the probe matched the length of the needle so it must have been on the inside of the tip.

Q. So you assumed that it contacted the tip because the probe was the same length as the needle?

A. Well, it couldn't have gone anywhere else.

Q. If the probe wasn't the same length as the needle would it contact the tip?

A. Well, it would have contacted

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the inside of the needle. By definition you can't leave a gap between the probe and the needle, so it contacted the needle in several places.

Q. But to contact the tip, the probe has to be the same length as the needle, right?

A. What do you define as the tip?

Q. You tell me. This is in Exhibit 2008. You refer to the Stratus NIMBUS RF neurotomy needle's tip?

A. The claim element 1D says the needle tip that is configured to pair (ph) tissue of a patient.

Q. Where is the tip in the image shown in 1D?

A. The part of the needle tip that's configured to pair tissue of the patient is the sharpened edge of that tip.

Q. So in the image included with figure 1D it's the silver part, right?

A. I can't hear you.

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Q. In the image included for element 1D in Exhibit 2008 the tip is the silver covered part of the needle, right?

A. Well, the filaments are also silver, but I guess you could say that the tip of the needle is the beveled end of the needle.

Q. Okay. So not the black part of the needle in that image?

A. No.

Q. Okay. So you're saying when you inserted the NIMBUS probe into the NIMBUS needle the probe contacted the tip portion that you just identified and the image associated with 1D?

A. Which claim element are you referring to?

Q. So you made this conclusion with respect to element 1I.

A. Okay.

Q. But there's no figure with 1I so I'm just trying to understand.

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So if we refer back -- and if there's a better image you can tell me. For example, the image associated with 1E has a label that says "tip".

Do you see that?

A. Yes, but I'm trying -- you're bouncing around a bit. I'm trying to understand where on 1I you're referring to the word "tip", I don't see the word "tip" in the claim language or beg your pardon (indiscernible).

Q. So in the image associated with figure 1E the tip is labeled in that image, correct?

A. Yes.

Q. Okay. So if we refer to the image in figure 1E, my understanding is that when you inserted the probe, the NIMBUS probe into the NIMBUS needle, the NIMBUS probe contacted the tip that is identified in the image associated with 1E?

A. Well, that's not what claim

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element 1I says. It doesn't say it contacts the tip. It says it's in physical contact with the conductive portion at the distal end of the radiofrequency neurotomy needle.

Q. The tip is at the distal end of the needle, right?

A. It is at the distal end but it's not the only part that's the distal end.

Q. So when you inserted the probe into the needle, where did the probe contact a distal end of the elongatement?

A. Because it's inserted into the lumen of the needle it must be in contact with the needle over much of its length including at the distal end.

Q. How do you know?

A. Well, you can feel it. You can feel it rubbing on the inside surface. It's not floating in free air. The diameter of the probe it matches pretty close to the internal diameter of the needle.

It would be impossible to insert the

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needle without it contacting the metal inside of the cannula.

Q. Yes, but the requirement in the claim is that the probe contacts a distal end of the elongate member, right?

MR. PHILLIPS: Objection. Form.

A. The language says, [As read] "Is in physical contact with the conductive portion at the distal end of the radiofrequency neurotomy needle," which it is.

BY MR. KELLY:

Q. If I had a 100 centimeter NIMBUS needle which you say you personally inspected, right?

A. No. I understand it was a meter.

Q. Sorry. 10 centimeters. If I have a 10 centimeter NIMBUS needle and I put a 1 centimeter probe into the needle, I think you'd agree that probe is not going to contact a conductive portion of the needle at

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its distal end, right?

A. I don't know why you'd do that, firstly, but it may be in contact with the conductor portion of the lumen which would mean is by definition the electricity is transmitted to the distal end.

Q. But it wouldn't be touching the distal end.

A. It wouldn't be long enough. That is correct.

Q. So how long does the probe have to be to contact the distal end of the needle?

MR. PHILLIPS: Objection. Form.

A. I haven't seen the engineering drawing so I don't know how to answer that but I guess the answer is just long enough.

So I would imagine that it's been designed that the -- our probe when inserted will contact the distal end of the needle, the conductive portion.

BY MR. KELLY:

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Q. Did you ever insert a 10 centimeter NIMBUS probe into a 15 centimeter NIMBUS needle?

A. I don't think so. I don't think I would have had any reason to do that.

Q. Why not?

A. Well, I think the question is why. I don't have any reason to do that.

Q. If you inserted a 10 centimeter NIMBUS probe into a 15 centimeter NIMBUS needle would the probe contact the conductive portion of the distal end of the needle?

MR. PHILLIPS: Objection. Form.

A. Again, I think it comes down to the definition of conductive portion of the distal end. If what you're implying is that it needs to contact the end of the lumen, it would not.

If the answer is that it would contact the internal conductive portion and that electricity would be conducted to the distal

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end then it would.

BY MR. KELLY:

Q. So let me see if I can be a little more clear about what I'm getting at. You have testified that you inspected two different versions of the NIMBUS device. One of which was 10 centimeters and one of which was 15 centimeters, right?

A. Yes.

Q. And in Exhibit 2008 there's no distinction between a 10 centimeter device and a 15 centimeter device, correct?

A. I don't think it refers to the length, no.

Q. But you're saying the device meets the limitation of element 1I, correct?

MR. PHILLIPS: Objection form and relevance and scope.

A. When I inspected the device and put the appropriate probe into the appropriate length needle it met the limitations of the claim, yes.

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BY MR. KELLY:

Q. When you say "the appropriate length probe," what do you mean?

A. I mean, you have a 15 centimeter probe for a 15 centimeter needle and a 10 centimeter probe for a 10 centimeter needle.

And the same way you wouldn't put a 15 centimeter probe into a 10 centimeter needle, you probably wouldn't put a 10 centimeter probe into a 15 centimeter needle, it would be against the labeling; you wouldn't do that.

Q. So if I understand your testimony, the limitation in element 1I is only met if the correct length probe is inserted into the correct length needle?

MR. PHILLIPS: Objection. Form. Scope. Relevance.

A. I don't think that's quite what I said. Because you asked the question earlier. If one were to put a smaller length

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probe into the needle, would that make the claim limitation and we had a conversation about whether your view is that the probe end would have to touch the inside end of the lumen.

And my understand was if it made physical an electrical contact with the interior of the metal lumen it will conduct electricity to the end of the probe.

BY MR. KELLY:

Q. I'm trying to understand what combination of devices that you personally inspected you're saying satisfies element 1E. So I understand -- sorry. Did you want to --

So I understand you inspected four individual components, a NIMBUS needle that was 10 centimeters long, a NIMBUS probe that was 10 centimeters long, a NIMBUS needle that was 15 centimeters long and a NIMBUS that was 15 centimeters long, correct?

A. That's my recollection, yes.

Q. And I'm trying to understand

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what combination of those four components would satisfy element 1I in Exhibit 2008?

MR. PHILLIPS: Objection to form. Scope. Relevance.

A. Any combination of the correct length probe with a reusable or disposable with the correct length needle for which it is matched would satisfy that claim limitation.

BY MR. KELLY:

Q. When you say correct length, you mean a 10 centimeter needle with a 10 centimeter probe or a 15 centimeter needle with a 15 centimeter probe, right?

MR. PHILLIPS: Same objection. Form. Scope. Relevance.

A. That's how they're labeled.

BY MR. KELLY:

Q. For any of the NIMBUS needles that you personally inspected, did you ever activate the needle with RF energy?

A. No.

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Q. Did you ever direct fluid through any of the NIMBUS needles that you personally inspected?

A. No.

Q. Other than the NIMBUS needle and NIMBUS probe that you personally inspected did you rely on any documents or materials in preparing Exhibit 2008?

A. I think I testified that some of these illustrations are from materials that are provided by Stratus.

Q. Did you rely on those materials when you prepared Exhibit 2008?

A. To the extent that they're included in the document. Yes.

Q. Have you identified where they're included in Exhibit 2008?

MR. PHILLIPS: Objection. Form.

A. I'm not sure I understand the question.

BY MR. KELLY:

Q. Have you indicated anywhere in

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Exhibit 2008 which portions of your testimony are relying on documents or materials other than the devices you personally inspected?

A. No.

Q. If you turn to page 8 of Exhibit 2008 and this is a chart comparing the NIMBUS needle and NIMBUS probe to Claim 1 of the 664 Patent; is that correct?

A. Yes.

Q. And Claim 1 of the 664 Patent is a method claim, correct?

A. Yes.

Q. And does claimed method involve inserting a needle into a patient and operating the needle with RF energy, right?

MR. PHILLIPS: Objection. Form.

A. I'm sorry. I got lost in the question.

BY MR. KELLY:

Q. The method of Claim 1 in the 664 Patent involves inserting a needle into a patient and activating the needle with RF

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energy, correct?

MR. PHILLIPS: Objection. Form.

A. I don't see the word "activating," I see the word "inserting a needle into a patient."

Where do you find the word activating.

BY MR. KELLY:

Q. Well, if you refer to element 1H, I'll rephrase. Well, have a look at element 1H first and let me know when you're done.

A. Yes. I read it.

Q. Okay. So the method of Claim 1 in the 664 Patent involves inserting a needle into a patient and operating a needle with RF energy; is that right?

MR. PHILLIPS: Objection. Form.

A. It's not quite what it says. It says operating the radiofrequency probe not the needle.

BY MR. KELLY:

Q. Where does the energy go?

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A. Well, that's a different question.

Q. Does Claim 1 require transmitting RF energy from the probe to the needle?

A. Yes.

Q. Okay --

MR. PHILLIPS: Objection. Form.

BY MR. KELLY:

Q. And you were able to determine whether the NIMBUS needle and the NIMBUS probe are used in this way?

MR. PHILLIPS: Same objection.

A. I did not insert the needle into a patient or myself.

BY MR. KELLY:

Q. In Exhibit 2008 you are testifying that the NIMBUS device satisfies the elements of Claim 1 of the 664 Patent, right?

A. Yes.

Q. And you are able to make that

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determination even though Claim 1 is directed to a method of using the device?

A. Yes.

Q. But you're not an artherotomy physician, right?

A. Yes.

Q. And you were still able to understand the method of Claim 1 and compare it to the NIMBUS device?

A. Yes.

MR. KELLY: We're on to another section. Do you want to keep going or take a break?

THE WITNESS: What time is it, please?

MR. PHILLIPS: 10:50.

THE WITNESS: I'm okay for a bit more.

BY MR. KELLY:

Q. Let's turn to paragraph 58 of your declaration. I have some questions about your definition of level of skill in

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the art. So why don't we start by you reading paragraph 58 aloud for me into the record.

A. [As read] "In my opinion, the key attributes of a POSITA, which is the acronym for a person of ordinary skill in the art, in this case would be a combination of (1) an interventional pain specialist physician with significant experience performing RF neurotomy procedures, and (2) an engineer with a degree in biomedical engineering or a related field and experience in the design and development of devices and methods for applying electromagnetic energy to nerves.

The POSITAs would have either a bachelor-level degree with three years of the design development experience noted above or an advanced degree with one year of the design development experience noted above. Such a POSITA could be a team of two or more people working together."

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Q. Thank you. So I understand your definition of the level of skill to be a combination of physician experience, which you've labeled No. 1 in paragraph 58 and engineering experience which you've labeled number 2 in paragraph 58; is that correct?

A. Yes.

Q. So for simplicity, is it okay if I refer to these two skill sets as those of a physician POSITA and an engineering POSITA?

A. No.

Q. I'll confess, I'm looking for a shorthand way to refer to 1 and 2 in paragraph 58. How would you refer to the skill set labeled one and skill set labeled two?

A. Well, the way you phrased it implies two separate POSITAs. The way I define it is it's a single entity which consists of two people, not an engineering POSITA and a clinical POSITA but a POSITA who

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has multiple attributes.

Q. So can I refer to number one in paragraph 58 as the physician skill set and No. 2 as the engineering skill set?

A. That would be acceptable, yes.

Q. When I refer to a POSITA with a physician skill set, I'm going to be talking about what you've labeled one in paragraph 58, and when I refer to a POSITA with the engineering skill set, I'm going to be referring to what you've labeled two in paragraph 58. And I'm not suggesting when I ask these questions that it has to be one person or two people. It could be either?

A. I'm still confused. It seems you're referring to two individuals. Are you referring to a single individual and two separate skill sets or are you referring to two individuals. I'm still confused.

Q. It could be either. So my questions relate to the skill set of the POSITA, and I think you testified here in

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paragraph 58 such a POSITA could be a team of two or more people working together. So I understand this could be two different people, but I have questions about the different skill sets that you've numbered one and two in paragraph 58?

A. All right. If the questions are about the skill sets, I'm happy to take that shorthand.

Q. Okay. So I'll try to be clear and let's see how this goes. With respect to the physician skill set number one, I think we established earlier that you're not an interventional pain specialist physician, right?

A. That is correct.

Q. So you're not offering testimony from the perspective of someone with the physician skill set one?

A. No.

Q. Okay. And in paragraph 60 of your declaration.

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A. 50?

Q. 60. In paragraph 60 of your declaration you state [As read] "By May of 2010 I had engineering skills and knowledge exceeding those needed by a POSITA." Correct?

A. Yes.

Q. So when you said, "you had skills and knowledge exceeding those needed by a POSITA", you mean the engineering skill set that you've labeled No. 2 in paragraph 58.

A. Well, that's what paragraph 60 ends with, quote, I am familiar with the engineering skills and knowledge of a POSITA at the relevant time.

Q. So the testimony in your declaration is from the perspective of a POSITA with an engineering skill set No. 2 in paragraph 58?

A. Yes, but of course I have awareness of the other areas of knowledge of a POSITA. I'm just not claiming to be, and

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I'm not an interventional pain specialist physician.

Q. Okay. Can you turn with me to 50 of your declaration?

A. 50, 5-0.

Q. 50, 5-0, yes.

In paragraph 50 you refer to the definition of a person of ordinary skill in the art that Dr. Tucker provides in his declaration, correct?

A. Yes.

Q. And at the end of paragraph 50 you indicate that you disagree with Dr. Tucker's definition of the level of skill in the art, correct?

A. Yes.

Q. So your definition of the level of skill in the art is different from Dr. Tucker's definition, right?

A. Yes.

Q. In paragraphs 52 and 53 you are discussing Dr. Tucker's definition of the

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level of skill in the art and you refer to quote [As read] "Dr. Tucker's definition of a POSITA/POSA." Correct?

A. Where are you reading that, sir.

Q. It's in paragraph 52 and 53?

A. Okay. I see that, yes.

Q. And I'm trying to be clear, whenever you're referring to Dr. Tucker's definition of the level of skill, you indicate that clearly in your declaration?

MR. PHILLIPS: Objection. Form.

A. That's two examples. I have to read all the other examples to be able to confirm the answer to your question.

BY MR. KELLY:

Q. Well, you use the word POSITA a lot in your declaration.

A. Yes.

Q. Can you think of any example where you use the word POSITA and you're referring to Dr. Tucker's declaration but you

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don't indicate that?

A. Well, I can't remember every word in the declaration, so I can't really answer your question. I don't think so but I can't confirm that.

Q. If at any point in our conversation today we are talking about a POSITA in your declaration and the passage I'm referring to is not referring to your definition, will you please let me know?

A. I understand. Yes.

Q. So I would like to understand better the difference between your definition and Dr. Tucker's definition of the level of skill, and I think you've repeated Dr. Tucker's definition at the end of paragraph 50 and your definition in paragraph 58 of your declaration; is that right?

MR. PHILLIPS: Objection. Form.

A. I have completed Dr. Tucker's definition in paragraph 50, and I have, in paragraph 58, my opinion of the key

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attributes of a POSITA. Yes.

Q. Can you take a minute to review Dr. Tucker's definition in paragraph 50 of your declaration and then your definition again in paragraph 58 just to familiarize yourself with those two definitions?

A. Yes, I have done that.

Q. We discussed earlier your definition of a level of skill includes the skills of a physician, right?

A. Well, I think it's more specific than that, isn't it? My definition says [As read] "An interventional pain specialist physician with significant experience performing radiofrequency neurotomy procedures." That's more than just any old physician.

Q. And Dr. Tucker's definition does not include this physician skill that you've identified in paragraph 58?

A. That is correct.

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Q. So I would like to compare Dr. Tucker's definition of the level of skill with your definition of the engineering skill set that a POSITA would have in paragraph 58?

A. Are you confining your questions to the definition of the engineering skill set then?

Q. Yeah. Well, in paragraph 58 you've testified that a POSITA would have the physician skill set which you've indicated number one, and an engineering skill set which you've labeled No. 2, right?

A. Yes.

Q. And we agree that Dr. Tucker's definition does not include No. 1; the physician skill set?

A. Dr. Tucker's definition doesn't include the specific definition of the physician skill set that I list here. That is correct.

Q. Okay. So what I'd like to do is understand the difference between the

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engineering skills that your POSITA would have and the engineering skills that Dr. Tucker's POSITA would have?

A. Okay.

Q. That's the -- those are the nature of my questions.

A. I think I understand.

Q. Okay. It seems that you and Dr. Tucker agree that a POSITA needs to have a degree in biomedical engineering or related field; is that correct?

A. Yes.

Q. And that degree can be a bachelor's degree or an advanced degree?

A. That is correct.

Q. That degree must be coupled with some practical experience?

A. Well, I think -- yes.

MR. PHILLIPS: Objection. Form.

A. It must be coupled with some specific practical experience.

BY MR. KELLY:

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Q. Okay. And in Dr. Tucker's definition of the level of skill, the POSITA needs experience with "thermal ablation systems and methods." Correct?

MR. PHILLIPS: Objection. Form.

A. I have no clue what he means by that.

BY MR. KELLY:

Q. That's what he says, right?

A. That's what he says.

Q. In your definition of level of skill, the POSITA needs experience [As read] "In the design and development of devices and methods for applying electromagnetic energy to nerves." Right?

A. That is correct.

Q. So under your definition, the POSITA doesn't necessarily need experience designing devices for ablating tissue, do they?

A. That's not quite what I said. Electromagnetic energy to nerves includes

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applying radiofrequency electromagnetic energy. So they could have ablation energy, they could have specific neurotomy experience.

Q. If a POSITA -- sorry.

A. I did not say they don't need it, which is how I interpreted your question.

Q. Well, if a POSITA only has experience stimulating nerves and not ablating nerves, then they fall within your definition, right?

MR. PHILLIPS: Objection. Form.

A. They may.

BY MR. KELLY:

Q. Okay.

MR. KELLY: Do you want to take a ten minute break before we move on?

THE WITNESS: Sure.

(A break was taken at 11:05 a.m.)

(Proceedings resumed at 11:22 a.m.)

BY MR. KELLY:

Q. Welcome back, Mr. Crosby.

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Could you refer back to Exhibit 2008 for me, and if you would look at the image included on page 2 next to element 1E. Do you see that image?

A. Yes.

Q. This appears to be an image of a NIMBUS needle, correct?

A. Yes.

Q. And there are several labels on the image in white text.

Do you see that?

A. Yes.

Q. Did you apply these labels to this image?

A. I don't recall.

Q. Do you know where this image came from?

A. I don't recall.

MR. KELLY: Okay. Mr. Crosby, I have some questions for you about the Racz reference. I've handed you a copy of what's been previously marked as Exhibit 1009.

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(Exhibit 1009 was marked for identification.)
BY MR. KELLY:
Q. Do you recognize this exhibit?
A. Yes, I do.
Q. And you discussed this Racz reference at length in your declaration, correct?
MR. PHILLIPS: Objection. Form.
A. I discussed it in my declaration. I don't know what you mean by at length, but yes, I discussed it.
BY MR. KELLY:
Q. Let's turn to paragraph 98 of your declaration.
And in paragraph 98, you opine that the bend at the tip of Racz is the raison d'etre of the invention; is that right?
A. Raison d'etre, yes.
MR. KELLY: My French is not as good as yours. Sorry.
THE WITNESS: The reason to be.
BY MR. KELLY:

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Q. I would like to explore that a little bit. So why don't we turn to the background section of Racz and if you would, turn with me to column 1, line 33. Let me know when you're there.

A. Yes. How much do you want me to read?

Q. I'm going to refer to this passage, so I just want you to be able to look at it as I refer to it. So in column 1, line 33, Racz explains that "Radiofrequency electrodes are commonly used. These typically have an insulated straight tubular metal shaft with an electrically exposed tip." Is that correct?

A. That's what it says.

Q. In the next paragraph, Racz refers to existing SMK needle from Radionics, correct?

A. I see. You're looking at line 43; is that correct?

Q. Yes.

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A. Okay. I missed it.

Q. In that portion of Racz, do you see that Racz describes the SMK needle as having a straight tip and a removable RF probe?

A. Yes. At line 46 it says [As read] "An exposed tip is a straight extension of the metal tubing shaft of the needle." Yes.

Q. And an SMK needle had a removable RF probe, right?

A. Where do you see that?

Q. In the same paragraph in the background section of Racz.

A. Which line? I'm trying to read where you're referring to.

Q. If you refer to column 1 beginning at line 49 refers to an RF probe being inserted?

A. I see, yes.

Q. So Racz is describing an existing SMK needle that has a straight tip

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and removal RF probe, right?

A. That's the background section, yes.

MR. PHILLIPS: Objection. Form.

BY MR. KELLY:

Q. In the next paragraph, which begins at column 1, line 55, do you agree that Racz explains the SMK needle was commonly used for denervation of a patient's spine?

MR. PHILLIPS: Objection. Form.

A. Well, it says more than that. It's a common use is in the stimulation and denervation of a patient's spine.

BY MR. KELLY:

Q. If you turn to the cover of Racz, the patent indicates that it was filed in 1998; is that right?

A. That's correct, yes.

Q. So Racz would have confirmed to a POSITA that in the 1998 time frame RF neurotomy needles with straight tips and

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removable RF probes were known in the art.

MR. PHILLIPS: Objection. Foundation.

A. He describes in the background section one type of neurotomy needle, it's not all neurotomy needles.

BY MR. KELLY:

Q. Would a POSITA reviewing Racz understand that RF neurotomy needles with straight tips and removable RF probes were known in the art?

MR. PHILLIPS: Objection. Form. Objection. Foundation.

A. A POSITA reading this would understand that Racz describes one example of a radiofrequency neurotomy needle from one company, yes.

BY MR. KELLY:

Q. And that radiofrequency neurotomy needle has a straight tip and removable RF probe, right?

MR. PHILLIPS: Same objections.

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Form. Foundation.

A. It's described as having a straight extension of the metal tubing shaft and a -- with durable and insertable radiofrequency or stimulation probe.

BY MR. KELLY:

Q. Is your understanding from Racz that the SMK needle has a curved tip?

A. I didn't understand that the SMK needle has a curved tip. Racz's needle has a curved tip, that's his invention.

Q. But the SMK needle didn't?

A. It's not described -- the particular example that Racz described did not have a curved tip. I did not know if there were any other needles that have a curved tip. He didn't describe them.

Q. Okay. So a POSITA reviewing Racz is going to understand that the SMK needle, which was available before 1998, has a straight tip, right?

MR. PHILLIPS: Same objections.

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Form. Foundation.

A. The SMK needle described by Racz in the background has a straight tip. Yes.

BY MR. KELLY:

Q. Okay. And Racz describes that SMK needle having a straight tip as being used for RF neurotomy procedures (inaudible)?

A. Which part are you referring to?

Q. I believe this is discussed at the bottom of column 1.

A. On the bottom of what? Sorry?

Q. Column 1.

A. It says [As read] "Radiofrequency heat ablation of a portion of the patient's tissue near the tip of the needle is routinely performed." And it says further on, [As read] "One limitation of the --"

(Reporter interruption.)

A. "One limitation of the

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straight electrodes typically used in such procedures is that the needle may not -- may need to be withdrawn and reinserted multiple times to achieve the proper target region for the needle tip."

BY MR. KELLY:

Q. Would a person of ordinary skill reviewing Racz understand that before Racz was filed, straight tip RF neurotomy needles were used to perform RF neurotomy procedures?

A. A POSITA reading this would understand that certain one example of straight tipped RF neurotomy needles were used to perform ablation procedures on the spine and would also understand the limitations of that as described by Racz.

Q. Okay. And I think you mentioned this earlier in your testimony but Racz explained that straight tip needles have some drawbacks for spinal neurotomy?

A. Racz describes at the end of

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column 1, one limitation of straight electrodes.

Q. And that entire sentence which is at column 1, line 65, Racz states [As read] "One limitation of the straight electrodes typically used in such procedures is that the needles may need to be withdrawn and reinserted multiple times to achieve the proper target region for the needle tip." Correct?

A. The same sentence I read out before, yes.

Q. And in column 2 in the first full paragraph, Racz explains that when the neurotomy procedure involves complex structures, using a straight tip needle could require redirection and repeated manipulation, right?

MR. PHILLIPS: Objection. Form.

A. Where in the -- I'm sorry. Can you highlight which line you're reading?

Q. I apologize. I'll give you a

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chance to review it. So please read Racz column 2, line 3 to line 15?

A. (The witness complies.) I have read it.

Q. And a POSITA reading this portion of Racz would understand that when a neurotomy procedure involves complex structures, a straight tip needle might require redirection and repeated manipulation?

A. No.

Q. Why would they not understand that?

A. Because it's not talking about neurotomy.

Q. Okay. What is it talking about?

A. They're talking about accessing lumbosacral discs, not a nerve.

Q. What is the Radionics SMK needle being used for when it's accessing a lumbosacral disc?

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MR. PHILLIPS: Objection. Foundation.

A. It's -- I don't have the instructions for use of the product in front of me, so I can't answer that question for that product. But what I can talk about is what Racz is discussing in lines -- column 2, lines 3 to 15 is the need to access other complex structures such as the lumbosacral disc, that's not neurotomy.

BY MR. KELLY:

Q. What is that?

A. Well, it's radiofrequency ablation of the disc.

Q. What is the disc made of?

A. A disc is a complex anatomical structure between to vertebrae. It consists of a fibrous ring and a pulpi central section called the nucleus pulposus and sometimes that gets compressed.

The layperson's description is a slipped disc. Sometimes you can relieve pain from

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that compressed disc by ablating the disc content itself. Whereas when you use the term radiofrequency neurotomy in the context of these patents you are talking about ablating the medial branch of the dorsal ramous of the spinal nerve; it's a completely different anatomical location.

Q. So in column 2, from line 3 to line 15 Racz is not identifying any challenges present for RF neurotomy?

A. Well, he's not talking about RF -- he's not talking about radiofrequency neurotomy of the medial branch. He's talking about accessing the lumbosacral discs, which is the disc between the bottom of the flexible spine L5 and the top of the sacrum, which is in your hip, for how to get to.

Q. So if a POSITA was designing an RF neurotomy needle, they would believe this portion of Racz is irrelevant?

A. Well, it depends on the application.

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THE COURT REPORTER: Irrelevant or relevant?

MR. KELLY: Irrelevant.

A. The biomedical engineer has to think about the intersection between the engineering and the biology and the clinical situation; you can't separate them. So a POSITA looking at this paragraph would understand the challenges of complex structures such as lumbosacral discs. That's what this paragraph is about.

BY MR. KELLY:

Q. And you're saying that has nothing to do with neurotomy?

A. No. It's a completely different anatomy, completely different clinical situation.

Q. Would you agree that Racz never indicates its straight tip RF neurotomy needles do not work?

A. What do you mean do not work?

Q. Racz indicates that straight

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tip neurotomy needles were used to routinely perform neurotomy procedures in its background section, right?

A. I think what Racz teaches is their exist straight tip needles that can be used for neurotomy but there are problems associated with him which his invention seeks to address.

Q. And are those problems present in all neurotomy procedures?

MR. PHILLIPS: Objection. Form.

A. What do you mean by all neurotomy procedures?

BY MR. KELLY:

Q. So Racz says that the straight tip needle might need to be reinserted multiple times to achieve a proper target ablation, right; and you mentioned that earlier?

A. Yes.

Q. And when Racz identifies that drawback of straight tip needles, he's

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talking about denervation of a patient's spine, right?

A. Yes.

Q. And all neurotomies are not performed on spine, right?

A. All neurotomy is not performed on the spine, no.

Q. So Racz is identifying a drawback of straight tip needles when a straight tip needle is used near the spine?

A. Well, I'm trying to understand the question, because it's not really specific. What Racz is talking about here is proper placement of the needle tip in the complicated structure of a patient's spine requires great skill by the treating physician -- clinician.

He doesn't say it doesn't work. He says it requires great skill. And then he goes on to say [As read] "One limitation of the straight (inaudible) is typically used in such procedures" and continue as we both

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read. So he's not saying it doesn't work. He's talking about drawbacks and limitations.

Q. So what Racz would communicate to a POSITA is that a bent tip can be preferable to a straight tip in certain situations?

MR. PHILLIPS: Objection. Form. Mischaracterize.

A. Well, Racz talks about solving a problem with his invention which is a medical or needle or cannula or stimulation or ablation that includes a rigid bent tip for simplified placement of target sites within a patient's anatomy; that's in the abstract.

BY MR. KELLY:

Q. So you just mentioned Racz talks about solving a problem with his invention, right?

A. Yes. I can't recall if they use the word problem, but yes, I'll agree with that.

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Q. In your opinion, what is the problem that Racz is solving with his invention?

A. Well, he described some of the problem in the passage to be read out earlier and I haven't read the entire invention today so I'm limiting my conversation to what we talked about already. There may be more. But he says, "Proper placement of the needle tip in the complicated structure of a patient's spine requires great skill by the training clinician."

So the problem implied by that is that not all clinicians might be able to do it, they might not have the skill. And then he says, one limitation, and that's the problem, of the stride electrodes is the needles may need to be withdrawn and reinserted multiple times to achieve the proper target. So that's another problem that he's talking about.

(Reporter interruption.)

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To achieve the proper target region for the needle tip. So that's not a problem that he identifies. He then talks about a problem with a nonneurotomy procedure which is going to lumbosacral discs.

He then talks about another problem starting at line 16. [As read] "Moreover the straight exposed tip of a straight needle cannot harm the contour of a curved burning structure such as the superior articular facet which proximates target nerves. This can present a restriction to target location in some situations."

So he's enumerated, listed multiple problems of straight tip needles for applying stimulation or radiofrequency energy.

Q. And each of those problems are associated with particular clinical applications, right?

A. The ones I just read, yes.

Q. In those applications, a POSITA would prefer the bent tip of Racz?

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MR. PHILLIPS: Objection. Form.

A. I don't think that's what I said. What Racz is suggesting his bent tip may have advantages. I don't think the POSITA would know if he would prefer the bent tip of Racz without looking at more data. You're asking about a preference of a clinician or a clinician part of a POSITA, and clinicians wouldn't want to make that determination without trying it.

BY MR. KELLY:

Q. What would a POSITA want to know if they were choosing between a straight tip and a bent tip for an RF neurotomy needle?

A. Are you referring to a clinical part of a POSITA in my definition?

Q. Sorry. I'm referring to your definition.

A. My definition. So the clinical part of a POSITA in my definition would want to know does it work? Are there

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any data to show that it works? What are the risks associated with it? How do the outcomes compare with a straight tip and a curve tip? There might be all sorts of data a POSITA would want to know before using either of those devices on a patient. Now, I would imagine you would want your physician to know that data before applying it to you.

Q. So you referred to the perspective of a physician, what would a POSITA looking at this from the engineering skill set want to know before designing a RF neurotomy needle with a straight tip or a curved tip?

A. I don't think a POSITA with the engineering skills could do it independently with the part of the POSITA with the clinical skills. You can't design a medical device without input from the physician and an understanding of the anatomy, the desired clinical outcome, the limitations of the procedure; it's not as

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simple as saying hey, I'll just look at this and from an engineering perspective it looks better. Looks better in what context? It doesn't make sense.

Q. So the engineering POSITA -- well, a POSITA with an engineering skill set, as you've defined it in your declaration, would need information from the physician to decide whether to use a straight tip or a curved tip?

MR. PHILLIPS: Objection. Form.

A. A POSITA as I describe it has two sets of skill. So the engineering skill set links inextricably with the clinical skill set. So the clinical skill set can't make a decision on whether to design a device without knowing if that device can be made in ones or in high volume, and an engineer wouldn't design a device without knowing from the clinical part of the skill set if it will serve a particular clinical function and achieve a clinical outcome; you can't

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separate them.

BY MS. KELLY:

Q. What I'm trying to understand is when would a POSITA want to use a bent tip instead of a straight tip?

A. For what procedure?

Q. For RF neurotomy?

A. I don't think I can answer that question without having more data. I don't have enough data to show if the outcomes are different significantly from one or the other; if one is easy to do; if one has a larger pool of candidate population. There's not enough information to answer that question.

Q. So you're saying that's a compensated choice between straight tip and bent tip?

A. Well, but that's not quite what I said. I said in order to answer that question I need more information. I didn't say it was particularly complicated, it might

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be very simple; you just can't do it with that information.

Q. So is it the case that a POSITA with the engineering skill set designing an RF neurotomy needle is not always going to select a bent tip for the needle?

A. Well, a POSITA designing an RF neurotomy needle is unlikely to always do anything. The POSITA with the engineering skill set will talk with the POSITA with the clinical skill set and understand what the needs are and try to design a product to meet those needs.

Q. And you're saying that RF neurotomy needle product might have a straight tip or a bent tip depending on what the engineering POSITA learns from the physician POSITA?

A. It may, yes.

Q. The let's turn to Racz column 2 around line 27 and could you please read

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Racz column 22, line 27 to about line 38?

A. I see that. Yes.

Q. In this portion of Racz, Racz indicates that [As read] "Stimulation in high frequency electrodes have an expandable and flexible curve tips are known." Is that right?

A. Yes.

Q. Just below this, Racz gives an example of the Radionics TEW Electrode Kit and the Radionics ZHK Electrode Kit, correct?

A. Yes.

Q. Are you familiar with features of the Radionics TEW Electrode Kit?

A. Vaguely. I haven't looked at them for a long time.

Q. Do you know whether the Radionics TEW Electrode Kit has deployable nitinol electrodes?

A. I don't know.

Q. Do you know whether the Radionics TEW Electrode Kit has deployable

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stainless steel electrodes?

A. I do not know.

Q. Are you familiar with the features of the Radionics ZHK Electrode Kit?

A. No. Are these the ones that are used for trigeminal ganglion pituitary gland area that is referred to in this paragraph?

Q. I'm just asking you about the TEW Electrode Kit and the ZHK Electrode Kit that Racz called to?

A. So this paragraph does not talk about spinal neurotomy.

MR. KELLY: We're going to move on and talk about the Lee reference. Do you want to break for lunch or do you want to --

THE WITNESS: What time is it?

MR. KELLY: 11:53.

THE WITNESS: I'm happy -- what time do you think we will go until?

MR. KELLY: It's hard to say. It's 11:53 now. This line of questioning might go

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until 12:45, 12:30.

THE WITNESS: Do you have any projection of the end of day?

MR. KELLY: Not right now, but it will be past lunchtime.

THE WITNESS: Sure. And the reason I ask -- are we off --

MR. KELLY: We can go off. That's fine.

(A break was taken at 11:54 a.m.)

(Proceedings resumed at 11:55 a.m.)

BY MR. KELLY:

Q. I have some questions for you now about the Lee reference. I'm handing you a copy of what's been previously marked Exhibit 1009.

MR. PHILLIPS: Objection. Form.

MR. KELLY: Sustained. I'm handing you a copy of what's been previously marked Exhibit 1010.

(Exhibit 1010 was marked for identification.)

BY MR. KELLY:

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Q. Do you see this exhibit?

A. I do.

Q. Do you recognize this exhibit?

A. I do.

Q. I would like to start by referring to paragraph 127 of your declaration. Here in paragraph 127 you indicate that [As read] "Lee is confined to a device for RF ablation of tumors; specifically uterine fibroids." Correct?

A. Yes.

Q. Let's refer to paragraph 150 of Lee. Could you read paragraph 150 of Lee aloud into the record?

A. [As read] "While the inventive device has been illustrated for use in the ablation of uterine fibroids, it is understood that this particular implementation is exemplary and that the inventive device may be employed in a wide variety of circumstances."

Q. Wouldn't this paragraph make

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it crystal clear to a POSITA that Lee is not confined to a device for RF ablation tumors?

MR. PHILLIPS: Objection. Form.

A. Not to me.

BY MR. KELLY:

Q. Why not?

A. Well, the description of Lee's or that uterine fibroids and the problems of ablating uterine fibroids and there may be other compilations like other hard organs or even soft organs like liver or kidney, but it's clear that it's confined to ablation of tumors of which uterine fibroids is the one example and the only one example that he describes.

Q. But that's not what paragraph 150 says, right?

A. Well, 150 says it may be employed in a wide variety of circumstances but there is no description of what any other circumstances in Lee. I didn't really know what that means in Lee.

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Q. It must be wider than ablation uterine fibroids, right?

MR. PHILLIPS: Objection. Form.

A. The description of Lee as I said is really confined to uterine fibroids. Yes, he has the throw away paragraph like many patents, including many of my own, which seek to expand the application but there's no information, examples, embodiments listed for any of those at a wide variety of circumstances that he mentioned.

BY MR. KELLY:

Q. Would a POSITA ignore paragraph 150 in Lee?

A. A POSITA would look at paragraph 150 and say there may be applications in other circumstances but I don't know what they are.

Q. So if the POSITA understands that there may be applications in other circumstances why would they believe that Lee is confined to ablation of the uterine

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fibroids?

A. Because that's all that Lee talks about.

Q. If you have a look at claim 1 under paragraph 150 of Lee, please review that claim and let me know if you see anything in claim 1 that restricts the scope of Lee to the ablation of uterine fibroids?

MR. PHILLIPS: Objection. Scope. Relevance.

A. Claim 1 is not restricted to uterine fibroids, no.

BY MR. KELLY:

Q. So in this patent application Lee was pursuing protection of an ablation element that was not restricted to the use of uterine fibroids, right?

MR. PHILLIPS: Objection. Form. Foundation.

A. You're asking me to form an opinion about what was in Lee's mind when he wrote this patent. Is that what you're

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asking?

BY MR. KELLY:

Q. Well, this claim is included in the disclosure of Lee, right?

A. Claim 1 is included in this application, yes.

Q. And you understand the purpose of a claim in a patent application, right?

A. Yes.

Q. So if there's nothing in claim 1 that restricts it to uterine fibroid it means that the applicant was seeking protection of an ablation element that was not restricted to uterine fibroids, right?

A. I understand your question.

Q. Would a POSITA have ignored that when they were reviewing Lee?

A. I don't think a POSITA would have ignored it. A POSITA would have read this and said, okay, I'm interpreting the claim in light of the description and what else could this be used for, to your

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question, if he says it may be employed in a wide variety of circumstances that the device claimed in claim 1, what other circumstances could that be used for?

That's how a POSITA would look at it. It says could be employed in a wide variety of circumstances? Well, like what? Like, a discount, could be employed in brain surgery, could be employed in replacing a knee, it's a pointless statement.

Q. In your opinion from the perspective of a POSITA as you've defined it, what would a POSITA understand to be these other circumstances referred to by Lee?

A. I think a -- in order to understand what other wide variety of circumstances this invention might be applicable to, it would be important to look at a number of other circumstances and figure out if this invention could be used for them.

Could, for example, this invention be used for knee surgery? Well, no, but that

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might be included in a wide variety of circumstances. Could it be used for brain surgery? Once. Could it be used for surgery on your prostate? Well, not on mine.

So the wide variety of circumstances requires some interpretation. It's not a completely open-ended, it can be used for anything. A POSITA would look at that and say well, it doesn't say it can be used for anything. It might be employed in a wide variety of circumstances for which this technology invention is applicable.

Q. I understand -- I'm asking you to interpret this statement from the perspective of a POSITA. So can you tell me for the perspective of a POSITA what circumstances this portion of Lee would communicate to a POSITA that Lee's device could be used for?

MR. PHILLIPS: Objection. Asked.

A. For a POSITA to answer that question, you'd have to do research on

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different types of clinical circumstances which require radiofrequency ablation for which this invention might be employed.

I have not done that research. I don't know that, and it would take me several hours and some research to do that. I can do it now if you would like.

BY MR. KELLY:

Q. No, you don't need to do it now. It's okay. Let's refer to paragraph 84 of Lee. Beginning at paragraph 84, Lee states, [As read] "In accordance with the invention energy delivery devices are provided which are adapted to the destruction of target tissue at the site where the electrodes are located.

Accordingly, the operator can deliver the treatment safely and effectively. One such target tissue for the devices of the present invention is a uterine fibroid."

Do you see that?

A. Yes, I see that.

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Q. And would you agree that in this portion of Lee the reference indicates that tumors are just one example of tissue that can be ablated with the disclosed RF ablation needle?

A. That's not what it says. It says uterine fibroid are one example. It doesn't say tumors. Uterine fibroid is a subset of tumors, there are lots of other tumors. I wouldn't use this on a brain tumor, for example.

Q. Would you agree that Lee indicates that uterine fibroids are just one example of tissue that can be ablating with the disclosed RF ablation needle?

A. That's not the language that Lee uses in that paragraph. They describe it as one such target tissue.

Q. Is there anything in this paragraph that would communicate to a POSITA that Lee's device can only be used for uterine fibroids?

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A. This paragraph and in particular the last paragraph we were reviewing before would lead a POSITA to ask the question. Knowing this device and how it works and how it's applied and the tissue it's designed for, what other tissues, what other situations or circumstances could this device be used for.

And if Lee says one such target tissues a uterine fibroid, I would say to myself or a POSITA would say to one's self; what other tissues are like a uterine fibroid that this particular device could be used for.

Q. And when you were preparing your declaration, did you do that analysis?

A. No.

Q. Let's turn to paragraph 228 of your declaration. I'll read paragraph 228. Let me know when you're done.

A. Paragraph 228 of my declaration. If Racz's R-A-C-Z apostrophe S -- Sorry.

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MR. PHILLIPS: I thought you mispelled it but you did spell it correctly. Sorry.

A. If Racz's modified device is intended for use in neurotomy like Dr. Tucker says, then it would have to be as a much -- should be at a much smaller scale than Lee's device for ablating uterine fibroids. I understand that an RF neurotomy needle must be between 16 and 22 gauge in size.

The smaller the gauge number the bigger the needle. The 16 gauge needle has an outer diameter of approximately 1.651 millimeters with a wall thickness of 0.229 millimeters.

A 22 gauge needle has an outer diameter of approximately 0.718 millimeters with a wall thickness of 08.152 millimeters.

Q. In this paragraph, you're opining that a device intended for neurotomy would have to be in a much smaller scale than Lee's device, right?

A. That's what I say, yes.

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Q. Isn't it true that Lee never discloses a required size for its RF ablation needle?

A. I don't recall seeing any dimensions in Lee. I do recall seeing the device, the actual commercial device which was made from Lee at least in the information I could find which is much bigger than that.

Q. But there's no disclosure anywhere in Lee that requires the RF ablation needle to be a particular size?

A. I don't recall seeing that. If you're saying that's true, then sure. I don't recall seeing anything.

Q. So based on Lee's disclosure, why would a POSITA conclude that a neurotomy needle must be a much smaller scale than Lee?

MR. PHILLIPS: Objection. Form.

A. I think you're mixing two things that don't make sense to me. There's a separate statement about the size require ment of a neurotomy needle, and then your

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question then had to do with what is the size of the Lee device, and are you asking then is the Lee device of a size suitable for neurotomy. I'm not sure I understand your question.

Q. Well, I think we agree that Lee doesn't say how vague his RF ablation needle is?

A. I don't recall seeing dimensions in Lee, no.

Q. So if there's no dimensions in Lee, how is a POSITA making a conclusion about its size relative to a neurotomy needle?

A. A POSITA looking at this would look at this complicated mechanism and say, how can I build that and how big would it have to be for me to build that. How big would it have to be for me to build one or build it in mass production.

And a POSITA looking at this would say this is a pretty complicated device, and you

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can like at all these illustrations here, all the multiple machine components and you can say, there's no way I can do that in a 22 gauge needle. I can't do it. There's no technology that let's me do that on a 22 gauge needle.

Even 16 gauge needle is going to be really tough, maybe in a 16 gauge needle (inaudible) experimentation and work to find out if I could even make it in a 16 gauge needle.

So somewhere who has the engineering skills of working with devices like this would say that's too big to be able to use for neurotomy. I can't make that 16 gauge. I certainly can't make a 22 gauge.

Q. And a POSITA would make that determination without any dimensions at all in Lee?

A. Yes.

Q. Let's refer to paragraph 231 of your declaration.

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A. I see that.

Q. Here you provide an image that purports to be from figure 12.1 of the Acessa user guide; is that right?

A. Yes.

Q. Did provide a copy of this Acessa user guide with your declaration?

A. I don't think so. It's available online somewhere.

MR. KELLY: Mr. Crosby, I have handed you a copy of what has been previously marked as Exhibit 2010.

(Exhibit 2010 was marked for identification.)

BY MR. KELLY:

Q. Do you recognize this document?

A. I do.

Q. Is this the Acessa user guide that you are referring to in paragraph 231 of your declaration?

A. Let me just check. It maybe. I think so but what I was looking at is that

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figure in the Acessa user guide which is on page 21 of 55 which is labeled in section 12.2.

So I'm not sure if this is the same version I looked at because my declaration said 12.1. Having a said that, I might have made an error in the number. So it looks the same but I can't represent that it is identical.

Q. Well, sitting here today, can you identify any difference between the image that you included in paragraph 231 of your declaration and the image that appears at page 21 of Exhibit 2010?

A. No, it appears the same.

Q. Could you turn with me to the very last page of exhibit 2010 which I think is page 55. The copyright on this document is the year 2018; is that right?

A. Yes.

Q. So at the time of the invention for the Stratus patents a POSITA

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would not have had access to Exhibit 2010, right?

A. I don't know if they were earlier versions of this with an earlier copyright. This is the only version I could get online, there might have been a 2010 copyright version. I just don't know.

Q. But this version, Exhibit 2010, has a 2018 copyright?

A. That is correct.

Q. So a POSITA would not have had access to Exhibit 2010?

A. He wouldn't have had access to this version of it, that is true, but what I'm saying to you I don't know if this is a document that's undergone revisions over the years and that particular illustration would have been in an earlier version that is not accessible to me.

Q. And you haven't provided an earlier version of this document?

A. I don't have an earlier

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version, no.

Q. And in paragraph 231 you're relying on Exhibit 2010 to show the size and shape of the ablation volume produced by Lee's device, right?

MR. PHILLIPS: Objection to form.

A. I use that illustration for my next part of the declaration in paragraph 232, yes.

BY MR. KELLY:

Q. So a POSITA without Exhibit 2010 wouldn't know what shape or size Lee's device produces with respect to its (inaudible) volume, right?

A. Not necessarily. Based on the Lee patent you could certainly determine approximately the shape of an ablation zone and a POSITA could make some assumptions about the size of the Lee device and make some projections about the size of the ablation zone.

Again, you talked about a document from

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2018. I do not know if there's an earlier document that would have been accessible to a POSITA to have come up with the same illustration. I just don't know.

Q. At the time of the invention, would a POSITA have understood that Lee's advice produces the ablation shapes and sizes included in paragraph 231 of your declaration?

A. At the time of which invention?

Q. The invention of the Stratus patent?

A. It's possible.

Q. I'm asking you.

A. I don't know. It's possible.

Q. I guess if you're not sure whether a POSITA would have understood that Lee's device produces these ablation shapes and volumes, then I struggle to understand why paragraph 231 was included in your declaration. So maybe you can explain to me

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why you included paragraph 231?

MR. PHILLIPS: Objection. Form.

A. Can you repeat the first part of that question it was an if-then question. I missed the if part.

BY MR. KELLY:

Q. I think we established that at the time of the Stratus patents invention Exhibit 2010 did not exist, correct?

A. What I've said is this version of the user manual for the 2018 copyright obviously did not exist. There may have been other versions with an earlier copyright. I do not know.

Q. Okay. So if we're evaluating the Stratus patents from the perspective of a POSITA at the time of the invention of the Stratus patents, what is the relevance of paragraph 231 in your declaration?

A. It seems to me that's kind of linking two things. If this is the Lee device, then it would have had this ablation

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characteristics whether it was in 2011 or 2018. The copyright notice on the user guide doesn't change the ablation size and volume, it just changes when one would know better is what you're arguing from that document. So if we assume that that is the ablation volume from the Lee device, then 232 is quite clear.

Q. Well, you said if this is the Lee device, but in paragraph 231 you say Acessa is the commercial embodiment of Lee?

A. That is correct.

Q. So is there any if? You're not saying if, are you?

A. Acessa is the commercial embodiment of Lee. The inventor Lee from the web page of the Acessa device saying this is my invention. There shouldn't be any dispute, I would hope, that this is the commercial embodiment of Lee.

Q. So how would a POSITA have known about these ablation shapes and volumes at the time of the invention for the Stratus

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patents?

A. Well, as I explained, I would imagine at the time the Acessa device became available, the user guide at that time would have become available. The 510-K regulatory submission summary would have become available. The POSITA would have known and could have known at the time of the availability of the Acessa device the ablation volumes from Lee.

Q. Let's look ahead one paragraph to 232 in your declaration. Here you indicate that [As read] "A deployment of Lee's times at the minimum of 0.5 centimeters and energy time of 1 minute yields an ablation size of 1.9 centimeters by 1.7 centimeters." Correct?

A. Yes.

Q. And that's, just so we're clear, that's. 19 millimeters by 17 millimeters, correct?

A. Correct.

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Q. And there's no cite in paragraph 232 of your declaration. So what is the source of this number?

A. It's my measurement from these pictures and the labels that they have of how big the ablation volume is. I'll have to go back to the Acessa manual to look at that because I don't have it memorized in my head.

Q. Well, let's look at section 12.4 of the Acessa manual.

A. There you go and there are the data.

Q. When I look at this table I see an indication of the major diameter and the minor diameter.

Do you see that?

A. Yes.

Q. This table indicates that when the Acessa filaments are deployed 0.5 centimeters, then the major diameter of the ablation size is 1.9 centimeters and the minor diameter of the ablation size is 1.7

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centimeters; is that right?

A. That's what it says.

Q. Is your understanding that the major diameter and the minor diameter referred to in section 12.4 corresponds to the image that is provided in section 12.2?

A. Yes.

Q. So in paragraph 232 of your declaration when you say 1.9 centimeters, are you referring to the major dimension that is indicated on the diagram of page 21 of Exhibit 2010?

A. Yes. I realize there's an error in my paragraph 232 because I say it's an ablation time of one minute but in fact this table refers to an ablation time of 30 seconds.

Q. But the value of 1.9 centimeters in paragraph 232 of your declaration is a major dimension of the ablation size?

A. Yes.

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Q. And the value of 1.7 centimeters is the minor dimension of the ablation size?

A. Yes. At 95 degrees Celsius.

Q. How would you describe the shape of the ablation volume shown in the diagram on page 21 of Exhibit 2010?

A. You're asking me for a geometrical description or what are you asking for?

Q. Well, it's not a circle, right, so I'm just wondering how would you describe that shape?

A. Well, it can't be a circle because it's a three-dimensional object.

Q. Sure.

A. So maybe oblate spheroid.

(Reporter interruption.)

A. Oblate, O-B-L-A-T-E, spheroid, S-P-H-E-R-O-I-D.

BY MR. KELLY:

Q. So when Lee's times are

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deployed 0.5 centimeters, the result is an ablation size of 19 millimeters by 17 millimeters. That's your testimony?

A. And this is (inaudible) studies, this is beef liver as it says in 12.4.

Q. Okay. What's the relevance of it being beef liver?

A. When you're designing this type of device you can't obviously do experiments with humans to do this so you need an animal model and the animal model they've chosen is beef liver and beef liver is fairly uniform.

Q. Okay. My question was when Lee's times are deployed 0.5 centimeters, the result is an ablation size of 19 milliliters by 17 millimeters, right?

A. And beef liver at 95 Celsius, yes.

Q. And the shape of that lesion is an oblate spheroid?

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A. It looks like it. Yes. What it's like in other tissue, we don't know.

Q. And your testimony in paragraph 232 of your declaration is that is this ablation size would be orders of magnitude larger than would be appropriate for RF neurotomy, right?

A. Certainly the 6 centimeters by 5 centimeters is order of magnitude larger, my understanding.

Q. What about 1.9 centimeters by 1.7 centimeters?

A. It's larger, probably not an order of magnitude larger because an order of magnitude would be 1.9 millimeters and you would want it bigger than that.

Q. How much larger is 1.9 centimeters by 1.7 centimeters than would be appropriate for RF neurotomy?

A. I'm not the clinician to be able to answer the question of how much volume the clinician wants to trade with

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neurotomy. You would have to ask the physician POSITA about that one. But my understanding is that it's smaller than these numbers here.

Q. Well, you've testified in paragraph 232 that these are orders of magnitude larger than would be appropriate for RF neurotomy, right?

A. Yes.

Q. So you yourself must have some concept of the size that is appropriate for RF neurotomy, right?

A. I have some concept, yes.

Q. Okay. What is the size that is appropriate for RF neurotomy?

A. It's in the order of a few millimeters, maybe 10 millimeters by maybe 8 millimeters, that sort of size but again, it's not a hard and fast number. Depends on the tissue, the temperature that you're talking about and how much time you apply the energy.

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Q. When you use the words [As read] "These are orders of magnitude larger than would be appropriate for RF neurotomy" in paragraph 232, are you referring to both the ablation sizes that you included earlier in the paragraph?

A. I think I testified that 1.9 by 1.7 centimeters is probably not an order of magnitude larger but the 6.5 centimeters would be an order of magnitude larger.

Q. So the smaller ablation size of 1.9 centimeters by 1.7 centimeters is much closer to the size that would be appropriate for RF neurotomy, correct?

MR. PHILLIPS: Objection. Form.

A. It may be.

MR. KELLY: Okay. I'm handing you a new exhibit that's been marked Exhibit No. 1051.

(Exhibit 1051 was marked for identification.)

BY MR. KELLY:

Q. Have you ever seen this

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document before?

A. No.

MR. PHILLIPS: Objection. Scope.

BY MR. KELLY:

Q. Can you read aloud the title of this document as it appears on the cover page?

A. The title is RadioFrequency Ablation in Interventional Pain Management Using RF Multitined Expandable Electrode. First edition.

Q. Who is the author indicated on the cover page of Exhibit 1051?

A. Robert E. Wright, MD. Edited by Aaron Calodney, MD.

Q. And if you turn to the copyright page of this document, the copyright owner is indicated as Stratus Medical, LLC; is that correct?

A. Yes, I'm looking for the date. Can you tell me the date of this?

Q. I can't.

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A. Pardon.

Q. I don't have the date with me.

A. Usually the cover page has a date on it but okay.

Q. So this is Stratus Medical's book, right?

A. I don't know. You've just presented it to me. I've never seen it before.

Q. The copyright holder is Stratus Medical, LLC. Would you agree it's probably Stratus Medical's book?

A. Probably.

MR. PHILLIPS: Objection. Scope.

BY MR. KELLY:

Q. If you can turn to the page labeled No. 3 which I believe shows the image of the NIMBUS device.

Do you see that?

A. Which page number are you talking about?

Q. It's three here.

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A. Yes.

Q. Does the device shown on page 3 of the Stratus book appear to be the NIMBUS device that you personally inspected?

A. It appears --

MR. PHILLIPS: Objection. Scope. I'm going to have a running objection to all questions concerning this document.

BY MR. KELLY:

Q. Does the device shown on page 3 of the Stratus book appear to be the NIMBUS device that you personally inspected?

A. It appears to be.

Q. Let's turn to page one which has the heading introduction. Do you see that page?

A. I do.

Q. Could you take a moment to review page 1 including the images below the heading NIMBUS lesion geometry and let me know when you're done?

A. I see that.

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Q. Looking at the left-most lesion image on page 1 of the Stratus book, would you agree this depicts a lesion that is indicated as being 11 millimeters long and 10 millimeters wide?

A. It does, but it's missing some other information to be able to evaluate that image. I don't know what the temperature is, I don't know what tissue it's in, I don't know how long the radiofrequency energy was applied for.

Q. But the lesion that's illustrated is indicated as being 11 millimeters long and 10 millimeters wide, right?

A. The one on the left, yes, of both of them, yes.

Q. How would you describe the shape of that lesion?

MR. PHILLIPS: Objection. Form.

A. Rounded cone.

BY MR. KELLY:

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Q. Does it not appear to be an ablate spheroid?

A. Possibly.

Q. I'm asking for your opinion.

A. It could be -- you could describe it as an ablate spheroid but you're asking how I would describe it. To me it looks more like a flat bottom rounded cone, a circular cross section.

Q. Okay. I'm asking you to describe the shape of the two-dimensional image on the left-most portion of page 1 of Exhibit 1051?

MR. PHILLIPS: Objection. Form. Foundation.

A. You're asking me for the two-dimensional step.

BY MR. KELLY

Q. Well, earlier we looked at the Acessa guide and I asked you to describe the shape of the lesion that you saw in the Acessa guide, right, and you described it as

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an ablate spheroid. So what I'd like to know is whether the lesion that is depicted on page 1 of the Stratus book is also an ablate spheroid?

A. They are similar shapes, yes.

Q. So let's refer back to the Acessa guide which is Exhibit 2010, page 22.

A. Yes.

Q. And I would like to compare the dimensions here to what is indicated in the Stratus book. So in the Stratus book, Exhibit 1051, it indicates the NIMBUS lesion can be at 11 millimeters long, correct?

A. 11 millimeters, yes.

Q. And the Acessa guide Exhibit 2010 indicates the Lee lesion can be 19 millimeters long, right?

A. Well, again, I think you're comparing apples and oranges. I don't know because it doesn't provide the information how much time the energy was applied, what the temperature was to describe that shape,

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what tissue it's in. I don't know how to make that comparison without more information.

Q. Well, I'm asking you to compare the dimensions that are indicated in the documents.

A. Yes. I can tell you the length of a banana and the length of an orange, it doesn't mean they're comparable. What -- the Acessa document is very specific in explaining that this is representative ovation sizes and X, V vary, in other words, dead, cow liver. I don't know how these were produced. Can you tell me how these were produced?

Q. Is 19 millimeters an order of magnitude difference for 11 millimeters?

A. An order of magnitude is usually taken to be three, so not three times, no.

Q. So you're saying an RF -- strike that. You're suggesting that a Lee --

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I'm trying to rephrase to be clear. In paragraph 232 of your declaration, you indicate that the ablation sizes produced by Lee are orders of magnitude larger than would be appropriate for RF neurotomy.

So are you saying that the ablation sizes produced by Lee are three times the size of the lesions indicated on page 10 -- on page 1 of Exhibit 1051 of the Stratus book?

A. If you look at that table on section 234 about half are at least three times the size -- two thirds are at least three times the size shown in this Stratus. So if you look at table in 2.4, the fourth entry is 3.3 which is an order of magnitude bigger than 11. That's 3 times 11.

Q. So we had to increase the deployment of Lee's filaments to two centimeters before the ablation size gets an order of magnitude larger than would be appropriate for RF neurotomy?

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A. Well, I'm just reading the numbers that are in this table.

Q. Is it true that if I take the lesion geometry that is indicated on page 1 of the Stratus book and I make it three times larger, I now have ablation volume that would make sense for tumor ablation?

A. I didn't hear the end of your question.

Q. If I take the NIMBUS lesion geometry indicated at page 1 of the Stratus book and I make it three times larger, is it now appropriate for tumor ablation?

MR. PHILLIPS: Objection. Form. Foundation.

A. Is it now you appropriate for tumor ablation. Well, which tumors, which organ. There's no until way I'm answering that question without more information.

BY MR. KELLY:

Q. Well, you're testifying there's a difference between the size of

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ablations that are appropriate for tumors and the size of ablations that are appropriate for RF neurotomy, right?

A. Well, what I said is that the difference in size of the ablation produced by Lee's device and the size that's appropriate for a neurotomy. I'm not saying that there's a difference in size for ablation of all tumors. Your question was much more encompassing than that.

Q. Is it your understanding that the lesion produced by Lee when its filaments are deployed 0.5 centimeters is appropriate for tumor ablation?

A. I don't know. That's a clinical question, not an engineering question.

You're asking me is the size of the ablation here suitable for tumor? Again, the question has to go back to which tumor and in which organ and what type of tumor.

Would I use a thing like that on a

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highly vascular tumor, probably not, would I use it on a fibroid; maybe. There's no simple answer to that question. It's not answerable without more information.

Q. In your declaration you felt comfortable testifying that the ablation sizes produced by Lee were bigger than would be appropriate for RF neurotomy, right?

MR. PHILLIPS: Objection. Form.

A. I said that, yes.

BY MR. KELLY:

Q. But you can't tell me what ablation size is appropriate for tumor ablation?

A. I think I replied that that's a question that is unanswerable. Which tumor, and which organ, how big, how vascular, it's not possible to answer that question without knowing more clinical information or anatomical or physiological.

Q. How can you say that these tumor ablation volumes indicated in the

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Acessa guides are not appropriate for RF neurotomy?

MR. PHILLIPS: Objection. Form. Foundation. Mischaracterization.

A. RF neurotomy is one particular example with one particular anatomical location, actually there's several, for one particular purpose.

The term "tumor ablation" covers a multitude of clinical applications a multitude of organs, a multitude of types of tissue.

You're saying is one device suitable for one application the same as one device for 50 applications? That's a non-answerable question.

BY MR. KELLY:

Q. You've made a conclusion about what ablation sizes are and are not appropriate for RF neurotomy in paragraph 232, correct?

A. Correct.

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Q. And in the NIMBUS book it says the ablation volume is 601 millimeters cubed, right?

A. Correct.

Q. How much larger does that volume have to be before it's not appropriate for RF neurotomy?

A. I don't have an answer to that question.

Q. Then how can you determine what ablation sizes are and are not appropriate for RF neurotomy?

MR. PHILLIPS: Objection. Form.

A. Well, my understanding of RF neurotomy is that you're trying to target a particular small anatomical location with multiple structures around it and a nerve passing through.

So you're trying to find a very small pace of a very small nerve to provide the neurotomy to ablate that piece of nerve.

That's a completely different clinical

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and anatomical situation than trying to get ablate a tumor which has usually a uniform tissue structure.

Some what might be appropriate for RF neurotomy with a very world defined location and clinical outcome is completely different from a tumor.

BY MR. KELLY:

Q. My question was: How can you determine what ablation sizes are and are not appropriate for RF neurotomy?

MR. PHILLIPS: Same objections.

A. I have looked at -- from my experience of looking at RF neurotomy and understanding where the anatomical location target is, it's clear to me that the ablation sizes provided by the Acessa device particularly the last ones would not be appropriate for RF neurotomy.

So I can tell you that 6 centimeters by 5 centimeters is actually not appropriate for RF neurotomy, but I'm not answering the

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question as to what is the maximum size for RF neurotomy, that's a clinical question. I think it's more than 6-by-5.

BY MR. KELLY:

Q. Is it your testimony that an ablation size of 1.9 centimeters by 1.7 centimeters is not appropriate for RF neurotomy?

A. The physical embodiment of Lee can be deployed up to five centimeters and what I'm saying is did a deployment at the times at minimum of half a centimeter, 5 millimeters used in ablation size of 1.9 by 1.7 centimeters and a deployment of 5 centimeters used an ablation size of 6 centimeters by 5 centimeters, in my view those are larger than would be appropriate for RF neurotomy.

Q. So the major diameter dimension of Lee's ablation volume is 8 millimeters more than what is in the NIMBUS book, right?

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MR. PHILLIPS: Objection. Form.

A. Where are you looking?

BY MR. KELLY:

Q. In the Acessa guide, it says, [As Read] "The major diameter of Lee's ablation volume when the filaments are deployed 0.5 centimeters is 1.9 centimeters", right?

A. In cold beef liver in a laboratory at 95 celsius.

Q. In the Stratus book it says the major dimension of the NIMBUS lesion is 11 millimeters?

A. I don't know under what circumstances that's taken. So, again, I think I've tried to say this a few times, it's comparing apples and oranges.

Until I know how those were generated, I don't know how to compare it with what's in the Acessa device.

What I know is that if these were the ablation volumes that are representative if

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you tried to use it on neurotomy, then these -- most of these volumes, all these volumes would be too big.

Q. So sitting here today you cannot articulate for me at what point an ablation volume becomes inappropriate for RF neurotomy with respect to its size?

MR. PHILLIPS: Objection. Form. Asked.

A. I can give you the same answer I said before. It depends on the clinical situation and which particular vertebrae you're at. The anatomical situation, there's no simple answer to that question.

There's no bright line difference to say anything below this is fine and anything bigger than this is not fine. It's not a question that has an answer.

BY MR. KELLY:

Q. But you've opined on that very thing in your declaration, right?

A. No. I've said these are too

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large. I didn't opine on what is the maximum volume for neurotomy ablation. I didn't provide any opinion about that.

And that seemed to be what you're asking me about. I don't have an opinion.

Q. You're saying you can opine on what is not appropriate for RF neurotomy but you can't opine on what is appropriate for RF neurotomy?

A. I have opined on what's not appropriate for RF neurotomy. I have not opined on what is appropriate.

MR. KELLY: Okay. All right. It's 12:52. Shall we break for lunch?

THE WITNESS: Let's do that.

(A break was taken at 12:52 p.m.)

(Proceedings resumed at 1:45 p.m.)

MR. KELLY: Welcome back, Mr. Crosby.

THE WITNESS: Thank you.

BY MR. KELLY:

Q. Before we move on to our next

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topic I just want to ask you one more question about paragraph 232 your declaration.

A. Yes.

Q. In paragraph 232 the last sentence as we discussed reads, [As read] "These the orders of magnitude larger than would be appropriate for RF neurotomy." And you emphasized orders of magnitude in this sentence, correct?

A. Yes, it's in italics.

Q. When you wrote "orders of magnitude," what did you mean mathematically?

A. Well, mathematically in order of maintenance you did something E which is a number larger. So three and a bit times larger. It's a general kind of definition.

Q. So if one ablation volume is three times larger than another, you would regard that as an order of magnitude difference?

A. Yes, thereabouts.

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Q. And an order of magnitude is not a difference of a factor of 10, in your opinion?

A. No, of course not.

Q. Let's turn to paragraph 127 of your declaration. I would like you to look at the last sentence in paragraph 127 and here in paragraph 127 of your declaration you state, [As read] "In my opinion a POSITA would not have found Lee in a search for prior art on RF neurotomy and would not have looked to the field of Lee"; is that right?

A. Yes. Second to last sentence.

Q. In your opinion Lee's field is far off ablation of tumors?

A. Well, let's look at what he says on the patent rather than just trying to remember.

All right. It doesn't have a separate field section but it's pretty clear that it's about RF ablation and tumors. It's paragraph 0 -- 008 the summary of the invention talks

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about tumors.

Q. So it's your opinion that a POSITA working on an RF neurotomy device would simply not consider references directed to tumor ablation devices?

A. No. I don't think a POSITA would, no. That's a double negative. I'm agreeing with your statement. The POSITA would not have found Lee.

MR. KELLY: Okay. Mr. Crosby, I've handed you a copy of a new exhibit that's been marked Exhibit No. 1050.

(Exhibit 1050 was marked for identification.)

BY RM. KELLY:

Q. And this exhibit is US patent Number 10661078, correct?

A. Yes.

Q. And you're a named inventor on this patent, correct?

A. Yes.

Q. And I think you referenced this one earlier today, correct?

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A. Yes, I think this is a continuation of an earlier one, if I remember directly.

Q. If you look at the second page of 078 patent I think you'll see the earliest claim priority date for this patent is March 11, 2010; is that right?

A. Yes.

Q. And do you recall earlier today testifying that this patent was directed to RF neurotomy?

A. The path of this patent is directed to RF neurotomy. Yes.

Q. Let's turn to figure 6 of your 078 patent.

A. You're taking me back a while.

Q. Hopefully it's fun memories. And here in figure 6 this illustrates an implantable device 70.

Do you see that? That?

A. Yes.

Q. And the implantable device 70

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illustrated in figure 6 includes an RF ablation circuitry module 78, correct?

A. Yes.

Q. Let's turn to column 16, line 38 of this patent. And at column 16, line 38 the 078 patent describes figure 6's implantable device --

A. Can I read it?

Q. Sure.

A. (Witness reads document.)

Okay.

Q. And at column 16 beginning at line 38 the patent indicates that, [As read] "The implantable device is intended for chronic implantation to perform serial RF ablations in scenarios where it is necessary to repeat RF ablation of tissue in a particular region of the body after certain periods of time."

Do you see that?

A. Yes.

Q. Let's move a little ahead to

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column 17 around line 10. You're welcome to read that as well.

A. (The witness complies.) I've read that.

Q. And around column 17 line 10 the patent indicates that the implantable device 70, [As read] "Further comprises RF ablation circuitry module 78 coupled to controller and designed to periodically ablate tissue or never fibers using RF energy." Correct?

A. Yes.

Q. So this is describing the implantable device 70 and its ability to be used for RF neurotomy, right?

A. Yes, it's periodically ablate tissue or nerve fibers using RF -- yes.

Q. Let look back at column 16. Let me know when you see a heading that reads, "Stimulator with RF ablation capability" around line 3?

A. Okay.

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Q. And this portion of the patent is again talking about the implantable device 70 that's shown in figure 6, right?

A. Let me just read this, yes.

Q. If you look at column 16 line 6 of the 078 patent.

A. Yes.

Q. This reads, [As read] "Although a primary application of the inventive technology is pain reduction in connection with improving stability of the spine, the inventive technology may be advantageously applied in other areas." And then it gives some examples, right?

A. Yes, I see that.

Q. In one of those other areas is RF ablation of tumors; is that right?

A. Yes.

Q. And in column 16, line 26, do you find that line?

A. I do.

Q. It lists passages 078 patent

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says, [As read] "The field of RF ablation is well developed in parameters suitable for ablating nerve fibers and other tissues such as RF energy and intended issues is well known to those of ordinary skill in the art," correct?

A. Yes, that's referring to the radiofrequency energy parameters.

Q. Okay. And in the sentence immediately after that passage, the 078 patent sites to an article titled: "Tumor ablation with radiofrequency energy." Correct?

A. Yes.

Q. So when you co-invented a device for RF neurotomy, you didn't ignore tumor ablation, right?

A. Your question's incorrect. I didn't invent a device just for RF neurotomy. I invented a device with multiple applications of which RF neurotomy is one which is what it clearly says on the face of

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the patent.

Q. So in your patent you're discussing RF neurotomy and RF ablation tumors in relation to the same device?

A. That's some examples of what it's used for. If you read the whole patent that is only part of it. It provides multiple therapeutic parameters.

Q. And you testified in your declaration that, [As read] "Lee has little to no relevance to the Stratus patents because it's directed to tumor ablation," right?

MR. PHILLIPS: Objection. Form. Mischaracterizes.

A. I said in my declaration, [As read] "In my opinion a POSITA would not have found Lee in search for prior art on RF neurotomy. I would not have looked to the field of Lee." I stand by that. This patent is not just about RF neurotomy, it's got multiple things.

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BY MR. KELLY:

Q. So your testimony is that a POSITA at the time of the invention of the Stratus patents would have done the opposite of what is disclosed in this patent, right?

MR. PHILLIPS: Objection. Form.

A. I'm not clear what you mean by opposite. What are you suggesting?

BY MR. KELLY:

Q. Well, you have testified that a POSITA interested in RF neurotomy doesn't look at RF tumor ablation references, right?

A. What I said is in my opinion a POSITA would not have found Lee in a search for prior art or RF neurotomy. This is not -- the 078 patent is not a patent just for RF neurotomy it's about multiple things.

So the search for prior art would include multiple things, not just RF neurotomy.

Q. Let's look at column 20 Claim 1 of your 078 patent.

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A. Claim 1?

Q. That's column 20 and then look at Claim 1 and read Claim 1 and let me know when you're done.

A. Yes, I've read that.

Q. And Claim 1 is directed to a method to alleviate back pain, correct?

A. Yes.

Q. So when you're investigating a method for alleviating back pain you were interested in RF neurotomy and tumor ablation?

MR. PHILLIPS: Objection. Foundation.

A. Claim 1 has nothing to do with RF neurotomy.

BY MR. KELLY:

Q. So you told me earlier today that the 078 patent was directed to RF neurotomy. And you're telling me now that Claim 1 has nothing to do with RF neurotomy?

A. That's not what I said. I

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said this patent includes something with RF neurotomy. It's not directed at or just to RF neurotomy.

Claim 1 has got nothing to do with RF neurotomy. This is also a continuation. The previous patent also issued had a different set of claims.

Q. When you were co-inventing the devices described in the 078 patent, you looked to the field of Lee, right?

A. No.

MR. PHILLIPS: Objection. Form. Foundation.

A. I beg your pardon. No.

BY MR. KELLY:

Q. We discussed earlier the field of Lee is tumor ablation, right?

A. Yes.

Q. And there are repeated references to tumor ablation in the 078 patent?

A. I think the patent stands on

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its own. There are multiple references in here. I can go through them all if you'd like. There are multiple publications here, references, I've got two pages of it.

I needed a search for multiple references in multiple fields including neuromuscular electrical stimulation of nerves, radiofrequency neurotomy, tumor ablation, motor control of nerves to control the back. This is a pretty broad patent of which RF neurotomy is one part.

Q. Let's turn to paragraph 47 of your declaration. I'd like you to read paragraphs 47 through 49 to refresh your recollection. Just read them to yourself.

A. (The witness complies.) I've read it.

Q. In these paragraphs you're testifying that there's no overlap between RF neurotomy and RF ablation of tumors, right?

A. Where do you see the word overlap in these paragraphs? I couldn't find

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that.

Q. It appears in paragraph 48.

A. 48? What I said is, [As read] "Specialist doctors have practically no overlap with each other and have no overlap with pain medicine specialists."

So the doctors who treat tumors don't have overlap with those who treat back pain. That's what I'm talking about. I think the words are pretty clear.

Q. But there is overlap between engineering of RF neurotomy devices and engineering of tumor ablation devices, right?

A. There may be, depends on the engineer.

Q. You say maybe but that's exactly what's in the 078 patent, right?

MR. PHILLIPS: Objection. Form.

A. The 078 patent is directed to multiple therapeutic modalities including radiofrequency ablation. I am a biomedical engineer and I've worked in multiple fields.

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BY MR. KELLY:

Q. So in the engineering community it's common for engineers to work on tumor ablation devices and RF neurotomy devices?

MR. PHILLIPS: Objection. Foundation. Form.

A. I don't know what you mean by common.

BY MR. KELLY:

Q. Well, you gave me an example that you've had a varied career, right, in multiple fields?

A. Are you suggesting I'm common?

Q. Well, I'm saying the testimony in your declaration is that a POSITA would never look to Lee because Lee is directed to tumor ablation, right?

A. Well, that's actually not what I said. If you direct me to those words again.

Q. Look in paragraph 129.

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A. Yes, paragraph 127 in my opinion a POSITA would not have found Lee a search for prior art on RF neurotomy. That doesn't mean the person doing the search doesn't have other skills.

But if you're doing a search on RF neurotomy it's unlikely you would have found Lee I don't think you would have.

Q. So you're saying a POSITA wouldn't have looked at Lee's field, right, at all?

A. No, I don't think so.

Q. And that's despite the fact that your own patent talks about both RF neurotomy and tumor ablation?

MR. PHILLIPS: Objection. Form.

A. Well, my own patent is talking about multiple things. My own patent is not just about RF neurotomy. My own patent is talking about several different therapeutic modalities so I would have been interested as I was in prior art in multiple therapeutic

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modalities.

My statement here in paragraph 127 in my declaration is, [As read] "A POSITA would not have found Lee in a search for prior art on RF neurotomy.

In my path now we're doing a search for prior art in multiple therapeutic modalities, they're not comparable.

BY MR. KELLY:

Q. So when you were developing a device for RF neurotomy you considered whether that device could be used for multiple modalities, right?

A. I wasn't developing a device for RF neurotomy. I was developing a device with multiple modalities of which RF neurotomy was one.

Q. But you're saying that the POSITA at the time of the invention of the Stratus patents wouldn't have even considered other modalities other than RF neurotomy, right?

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MR. PHILLIPS: Objection. Form.

A. Well, I think I'm pretty clear. A POSITA would not have found Lee in a search for prior art on RF neurotomy. If I were doing a search for prior art or other things I might have found Lee.

But if I'm doing a search for prior art on RF neurotomy I don't think you would have found Lee and you would not have looked to the field of Lee.

We're talk about my patent. My patent is not a search for prior art and RF neurotomy, it's a search for prior art on multiple therapeutic modalities because the device has got multiple modalities.

BY MR. KELLY:

Q. Let's look at paragraph 86 of your declaration. And read paragraph 86 and let me know when you're done?

A. Yes.

Q. At the end of paragraph 86 you conclude [As read] "The delivery of RF

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electromagnetic energy and RF neurotomy must be precisely controlled which is fundamentally different from RF ablation to destroy tumors." Correct?

A. Yes.

Q. In your 078 patent you described a device that actually does both of these things, right?

MR. PHILLIPS: Objection. Form.

A. Well, I'll draw your attention to it. My patent the bit you read out before column 16, line 10. A sensory nerve is ablated to prevent sensory signals from reaching the brain.

Such as Rhizotomy at the medial branch of the dorsal ramus and I'm trying to find somewhere else because we read that before where we talked about affecting afferent nerve fibers only but I don't have this whole patent memorized so I can't remember where it is. But it is fundamentally different.

BY MR. KELLY:

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Q. But I think the conclusion you're reaching in your declaration is that RF neurotomy and tumor ablation are so fundamentally different that a POSITA looking at RF neurotomy just ignores tumor ablation prior art, right?

A. That's not what I said. I'll go back and read what I said again. That is a person -- let me find it. [As read] "A POSITA would not have found in a search for prior art on RF neurotomy would not have found Lee."

Q. And you also state in paragraph 127 that POSITA would not have looked to the field of Lee?

A. Yes. I don't think a POSITA would have looked to the field of Lee if you're doing a search for RF neurotomy.

Q. So that's ignoring the field of Lee, right?

A. Not looking for and ignoring are different constructs. Not looking for

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doesn't mean I -- ignoring implies that I found something and I ignore it. I'm saying you wouldn't look for it. It's a different meaning.

Q. So your POSITA would not even look to tumor ablation technology?

A. For -- I don't understand that question.

Q. A POSITA at the time of the invention of the Stratus patents, if it was working on a RF neurotomy device, would not have even investigated tumor ablation efforts?

A. I don't think so. No. That's my opinion.

Q. And that is in spite of the fact that you've described in your patent one device that does both RF neurotomy and tumor ablation?

MR. PHILLIPS: Objection. Form.

A. My device has multiple therapeutic modalities. I would have done --

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did a search for prior art on each of those therapeutic modalities whereas what I'm talking about is if you're doing a search for prior art on RF neurotomy you would not have looked for the field of Lee and would not have found Lee.

I'm doing a search for multiple modalities; it's not comfortable.

BY MR. KELLY:

Q. Why would a POSITA have limited their search to prior art directed to RF neurotomy only?

A. Well, if that's the objective of doing the invention to improve RF neurotomy that's why I would have done a search for RF neurotomy.

I wouldn't have done a search including orthopedics either.

Q. Is it your opinion that the Stratus patents have no other modalities than RF neurotomy?

A. Which Stratus patent are you

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referring to?

Q. The ones addressed in your declaration?

A. Well, there are three and they have slightly different claims so I'm not sure which one you're referring to.

Q. Let's look at the 688 patent. I think I already handed you that.

A. I have it.

Q. And let's look to Claim 1 of the 688 patent.

A. Before we go to Claim 1 let's look at the abstract which says, [As read] "Methods and systems for spinal radiofrequency neurotomy."

Q. Okay. Could you go to column 31 and review Claim 1 of the 688 patent and let me know when you're done.

A. I've read Claim 1.

Q. Claim 1 in the 688 patent is not limited to RF neurotomy, is it?

A. I don't see that it's limited

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to RF neurotomy, that's correct.

Q. There's not a single element of Claim 1 that requires it to be configured to RF neurotomy, right?

A. The words RF neurotomy do not appear in Claim 1; that is correct.

Q. Is there any aspect of Claim 1 that tethers it to RF neurotomy?

MR. PHILLIPS: Objection. Form.

A. I'm not sure what you mean by "tethers to". Is that a legal term?

BY MR. KELLY:

Q. I'm just trying to confirm that Claim 1 is not in any way limited to RF neurotomy?

MR. PHILLIPS: Objection. Asked.

A. Claim 1 does not have limitations of RF neurotomy. I agree with that.

BY MR. KELLY:

Q. Okay. Let's look at Claim 53.

A. I've read Claim 53.

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Q. And Claim 53 is not limited to RF neurotomy, is it?

A. I don't see any claim limitations in 53 for RF neurotomy.

Q. Let's look at Claim 56.

A. I've read Claim 56.

Q. And Claim 56 is not limited to RF neurotomy, right?

A. I do not see any limitations on RF neurotomy in Claim 56.

Q. So the 688 patent claims could cover tumor ablation device, right?

A. Perhaps. As the abstract says this is about methods and systems it's not a radiofrequency neurotomy.

Q. Is it your understanding that the abstract limits the scope of the patent?

A. No.

Q. So if the claims could cover tumor ablation devices why are you suggesting that a POSITA would not have looked to tumor ablation?

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MR. PHILLIPS: Objection. Form.

A. I think that's kind of inverted logic. A POSITA writing this patent would have looked for prior art for methods and system of spinal radiofrequency neurotomy and then thought about how else could use this invention and maybe think about writing some claims which would expand the original invention which was targeted at radio frequency neurotomy.

BY MR. KELLY:

Q. Let's turn to paragraph 278 of your declaration. In paragraph 278 you evaluate some properties of a Nitinol filament, right?

A. That's correct.

Q. And in your example you assume the Nitinol filament has a diameter of 0.2 millimeters, right?

A. Yes.

Q. Nitinol is N-I-T-I-N-O-L. And you also assume that the Nitinol filament has

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a deployed length of 10 millimeters, correct?

A. Correct.

Q. And you calculate the maximum bending force on this Nitinol filament, right?

A. Yes.

Q. Did you rely on any textbooks when you were making these calculations?

A. Oh, gosh. The state of engineering, mechanical engineering textbooks. I can't remember which ones I looked at.

Q. You didn't identify any of those textbooks in your declaration, right?

A. No.

Q. From those textbooks is that where the formulas that are provided in paragraphs 277 and 278 came from?

A. Well, these are kind of engineering 101 mechanical engineering formulas that'd be in multiple textbooks.

Q. I'm just asking what you

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relied on?

A. I relied on my own knowledge which I refreshed with doing a search for online textbooks on how to do these calculations.

Q. What did you rely on to identify the material properties of Nitinol?

A. There are many, many publications on the material properties of Nitinol. If I remember correctly, I looked up multiple references on Nitinol mechanical properties. I don't recall which ones.

Q. You didn't identify any of those in your declaration, correct?

A. No.

Q. In paragraph 278 you conclude that a 0.2 millimeter diameter Nitinol filament would not work for a RF neurotomy device, right?

A. What I said is a force of 16 grams or about half an ounce simply would not work. It's not enough force to penetrate

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tissue and a physician could not regulate the applied force with that accuracy.

Q. So are you saying that a RF neurotomy device with .2 millimeter diameter Nitinol filaments would not be useable by a physician?

A. Well, I was responding to Dr. Tucker's declaration and doing some calculations which he did not about the forces associated with his example.

Q. I'm asking about your conclusion from those calculations?

A. My conclusion is that Dr. Tucker's example would not work.

Q. So if a POSITA prepared an RF neurotomy device with deployable filaments made of Nitinol that were .2 millimeters in diameter, your opinion is that that device would not work?

A. Well, that's not quite what I said. I was referring really to Dr. Tucker's declaration and what I'm saying is the

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example in his declaration I think would not work.

If you have another theoretical device that you want to talk to me about I'll have a look at that one.

Q. Well, you're saying that any Nitinol filament that is .2 millimeters in diameter and has the length of 10 millimeters is not strong enough to work in an RF neurotomy device, right?

A. I said it's not enough force to penetrate tissue and a physician could not regulate the implied force. In some circumstances it might work. It certainly would be risky to rely on that to work in all circumstances.

Q. Well, your declaration doesn't say it might work, right? It just says it wouldn't work?

A. Well, yes, it's --

MR. PHILLIPS: Never mind.

A. It simply -- it would not work

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of the device that you certainly want to commercialize. It might not work in particular patients. There may be one or two patients in which it might work, but when I say it simply would not work, it's a is this a device of someone who started multiple medical device companies where Trump would want to rely on to start to sell? No.

Q. Your opinions are being offered from the perspective of a POSITA, right?

A. Correct.

Q. So your testimony is that a POSITA would not implement Nitinol filaments that were .2 millimeters in diameter and 10 millimeters long in a RF neurotomy device?

MR. PHILLIPS: Objection. Form.

A. I well, that's not quite what I said. I was responding to the example in Dr. Tucker's declaration. I'm not making a general statement about any particular neurotomy device. There might be a different

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type of design in which these dimensions might work.

Again, if you tell me the device that you have in mind, I can do an analysis but I'm responding to Dr. Tucker's example.

BY MR. KELLY:

Q. But your conclusion is based on the calculation in paragraph 278, right?

A. For Dr. Tucker's example, yes.

Q. What aspects of Dr. Tucker's example are included in your analysis of paragraph 278?

A. I think they refer to Dr. Tucker's example. If the filaments are .2 millimeters in diameter as suggested by Dr. Tucker, Exhibit 1031 at paragraph 228, so I'm referring specifically to his example.

Q. And it sounds like the only parameter that you've drawn from his example is the diameter of the filaments; is that right?

MR. PHILLIPS: Objection. Form.

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A. I think he also suggested the material.

BY MR. KELLY:

Q. Okay. Anything else?

A. I've made some assumptions from his example because -- so I'm clear about the filament length and I say assuming a filament length. So I made an assumption about length.

Q. So based on the material Nitinol, the diameter of the filament, the length of the filament, and the ultimate yield strength of Nitinol you concluded that Dr. Tucker's example would not work?

A. That's my conclusion.

Q. Okay. Since you reached that conclusion based only on those four parameters, it would make sense to me that any other device that satisfied those four parameters would also be inoperable?

MR. PHILLIPS: Objection. Form.

BY MR. KELLY:

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Q. Right? Right?

A. You're asking me if it's correct that it makes sense to you?

Q. I'm asking what your opinion is.

A. I can't answer that question until knowing the exact configuration of that device. The configuration is important.

Q. But the configuration was not accounted for in paragraph 278, right?

A. Yes, it is because it refers to Dr. Tucker's device and that has a specific configuration as the circled Racz modified device. If you want to show me a different type of configuration, we can do a different type of analysis.

Q. But in this calculation, the only parameters from Dr. Tucker's device that you relied on were the diameter filaments, the material of the filaments, the length of the filament and the ultimate yield strength of the material, right?

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A. And the configuration of Dr. Tucker's device which equals the Racz's modified device.

Q. Where is that accounted for in paragraph 278?

A. I refer to Dr. Tucker's declaration. It's pretty clear to me -- if I hadn't written it so that it's clear, I apologize, but this is talking about Dr. Tucker's so-called Racz's modified device and I'm trying to figure out because his explanation is so unclear, what he actually means about it.

Q. Okay.

A. So it depends on the configuration as well.

Q. I would like you to turn to the 782 patent, Exhibit 1001. If you would turn to column 21, line 49. So here the 782 Patent indicates that the deployable filaments may be constructed from a material operable to conduct RF energy, for example, a

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metal such as stainless steel, such as 303 stainless steel, Nitinol or shape memory alloy. Do you see that?

A. I see that.

Q. So the 702 Patent says Nitinol works for its filaments?

A. Well, the 782 Patent says that the material may be used in this configuration with this design may include Nitinol.

Q. Okay.

A. Do you have information on the dimensions in this patent of the filament?

Q. Yes. Can you turn to column 22, line 37?

A. Okay.

Q. The 782 Patent in column 227 indicates that the filaments each have a diameter between .025 -- excuse me. I'm just going to read the metric range so that it's not confusing.

In column 22, the 782 Patent indicates

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that the filaments each have a diameter between about .06 millimeters and about 1 millimeter.

Do you see that?

A. Yes.

Q. So the 782 Patent says that the filaments can be made of Nitinol and they can be substantially smaller than what is proposed in Dr. Tucker's declaration, right?

A. No.

MR. PHILLIPS: Objection. Form.

A. Sorry. No, because this just talks about diameter which is also a parameter.

BY MR. KELLY:

Q. In the Stratus patents a .06 millimeter filament is workable, right?

A. At what length.

Q. This is what the patent says?

A. That's my point. The workability, to use your term, depends on the diameter and the length. If you have a

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filament of a small diameter that doesn't extend far it might work. If you want to have a small diameter that extends a large distance it probably won't work. They're not independent.

Q. What we can assume, at some length the filament can be .06 millimeters in diameter, right?

A. Well, the patent uses that as an example as between .06 and about 1 millimeter. I don't see here where the length is associated with that. And the bending in my declaration, length is a crucial parameter.

Q. But we know from the Stratus patent that at some length of filament a .06 millimeter filament works in an RF neurotomy device, right?

A. We know that the Stratus Patent described filaments that as small as .06 millimeter. It doesn't say that they work. I don't see any information here that

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says clinical results or experimental results on that and at what length.

So what we can say is that the Stratus patent describes some filaments as small as .06 millimeters at some length we don't know what it is and that it might work.

Q. So you're suggesting that the Stratus patents disclose embodiments of the invention that do not work?

MR. PHILLIPS: Object to form. Mischaracterizes.

A. I don't think that's what I said. I said there's not enough information here. You need to know the length as well. Think of an example take a drinking straw. If I have a drinking straw which is an inch long, it would probably support this can.

If I have a drinking straw that's 3 feet long, it won't. But the diameter and the length indirect with each other to yield information about the strength. You can't look at one without the other.

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BY MR. KELLY:

Q. Okay. Let's look back at paragraph 278 of your declaration.

A. 78.

Q. 278. And when you were performing your calculations, you assumed a filament length of 10 millimeters, correct?

A. Yes.

Q. Why did you assume a filament length of 10 millimeters?

A. Dr. Tucker circled Racz modified device doesn't give any dimensions. I tried to guess from the information he provided what a length might be and I use that assumption. If you want to take a different assumption, leave that with a different answer.

Q. Why did you chose 10 millimeters?

A. It was what's known in engineering as a W-A-G.

Q. I'm a lawyer, so you'll have

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to --

A. Wild ass guess.

Q. Let's look at paragraph 93 of your declaration. And you indicate that removable RF probe is "highly advantageous for neurotomy procedures" in paragraph 93, right?

A. Yes.

Q. And you explain in paragraphs -- strike that. You explain in paragraph 94 one of the reasons a removable RF probe is advantageous is because it reduces the overall cost, correct?

A. Yes.

Q. You explain further in paragraph 95 that the removable RF probe allows the needles moving to be used to infuse fluids when the probe is removed, right?

A. Yes.

Q. Is it your opinion that a person of ordinary skill in the art would

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have appreciated these vantages at the time of the invention?

A. Certainly a person of skill in the art would have appreciated the advantage of being able to instill fluid such as anesthetic. The cost difference is depends a little bit on what manufacturing techniques might be used, but a person of skill in the art at the time of the invention would have considered that.

Q. Let's refer back to Racz reference?

A. I have Racz.

Q. If you turn to figure 2 B of Racz?

A. Yes.

Q. Racz discloses that it's needle has a removable RF probe, correct?

A. Yes.

Q. If a person of ordinary skill appreciated the advantages of a removable RF probe, then they would have had good reason

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not to eliminate Racz's removable RF probe, correct?

A. I'm sorry. Have to try that one more time.

Q. Sure. If a person of ordinary skill appreciated the advantages of a removal RF probe, then they would have had good reason not to eliminate Racz's removable RF probe in any modification of that device, right?

MR. PHILLIPS: Objection. Form.

A. Well, I don't actually agree with that statement. It depends what you're trying to modify the device for. As I've said a couple of times, biomedic engineering is the intersection of engineering and clinical medicine and anatomy and physiology.

You can't answer that question without knowing what the device is destined for. Or what its clinical use is, what part of anatomy it's going to.

BY MR. KELLY:

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Q. Let's turn to paragraph 172 of your declaration. Just take a second to refresh your recollection on what this is discussing?

A. Okay. I've read 172.

Q. In this portion of your declaration you're suggesting that a POSITA desiring to increase the ablation volume of Racz would have done so by adding deployable electrodes from Fitz instead of Lee, correct?

MR. PHILLIPS: Objection. Form.

A. I can read the paragraph. What these three documents might have suggested to a POSITA desiring to increase the ablation volume would have been to reconfigure Racz's needle to have multiple desilapitures (ph) as taught by Fitz and replace Racz's single removable probe with a multiple deployable RF electrode probe to Fitz.

BY MR. KELLY:

Q. So in your modification of

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Racz discussed in paragraph 172 you have eliminated Racz's removal RF probe?

A. Oh, I see where you're confused. No, not at all. What I've said is to replace Racz's single probe with multiple probes. It hasn't eliminated anything. It's added to.

Q. Okay. So how many probes are there in your proposed modification of Racz?

A. Three, (inaudible) Fitz.

Q. How are those three probes inserted into the devices?

A. I don't provide information on how they were inserted into the device but I say the removable with a -- it replaces Racz's single removable probe with multiple deployable RF electrodes. So the single probe of Racz could be replaced with an equivalent structure which has three probes, not just one.

Q. So are you suggesting three separate removal RF probes or one RF probe

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that has three electrodes. I'm just trying to understand.

A. I'll read it again. It says it replace Racz's single removable RF probe with a multiple deployable RF electrode that fits. And the purpose of this paragraph and this section is to explain my opinion that a person of skill in the art who is trying to increase the ablation volume would have found an easier way than the very complicated Dr. Tucker's, Racz modified device. You don't have to have it as complicated as that to achieve the stated objective, the motivation to combine these things.

Q. Okay. So in paragraph 172 when you say you're replacing Racz's single removable RF probe with multiple deployable RF electrodes of Fitz, you're suggesting that these multiple deployable RF electrodes that you refer to are disclosed in Fitz, right?

A. Well, Fitz discloses three RF electrodes in one embodiment of his

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invention. I can show you if you want.

Q. Yes. So if I understand your testimony, you're saying that Fitz discloses multiple removable RF probes?

MR. PHILLIPS: Objection. Form. Foundation. Mischaracterizes.

A. I think you're referring to Exhibit 1011 which is the Fitz patent.

MR. KELLY: Yes, and I apologize Mr. Crosby, I've handed you a copy of what's been previously marked Exhibit 1011.

(Exhibit 1011 was marked for identification.)

BY MR. KELLY:

Q. And Exhibit 1011 is the Fitz reference, correct?

A. Correct.

Q. So could you show me where in Fitz are the multiple deployable RF probes that you are suggesting adding to Racz in paragraph 172 of your declaration?

A. If you look at the illustration figure 4 it shows three

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radiofrequency probes. And paragraph 20 describes figure 4. Figure 4 illustrates a further alternative embodiment of the invention particularly applicable to side port introduction.

In this case, the introducer 402 is curved and a plurality of electrodes are employed through the tip or multiple side ports.

Q. And your understanding is that those electrodes consist of removable RF probes?

MR. PHILLIPS: Objection. Form. Mischaracterize.

A. So would you ask your question again I forgot the question while reading the patent.

BY MR. KELLY:

Q. Sure. Is it your understanding that the plurality of electrodes discussed in paragraph 20 of Fitz and illustrated in figure 4 are removable RF

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probes?

MR. PHILLIPS: Same objections.

A. Fitz doesn't use the word removable but he does I think use the word I have to find it again, deploy. So in the abstract he talks about an introducer used to deploy a set of electrodes to an area to be treated.

So I think a person of skill in the art would understand that the introducer is introduced into the tissue and then the electrodes are deployed through the introducer, that's what he says.

Q. In your example that you describe in paragraph 172 of your declaration, can those deployable electrodes be removed from the device?

A. I don't think it really matters. They may be.

Q. Earlier I think you testified there were three removable RF probes in your proposed modification of Racz; is that not

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accurate?

A. No. Can I read it again, replace Racz's single removal RF probe with a multiple deployable RF electrodes of Fitz.

Q. When you start with Racz's device you have a device that has a single removable RF probe, right?

A. Yes.

Q. And that removable RF probe has several advantages, right?

A. Yes.

MR. PHILLIPS: Objection. Form.

BY MR. KELLY:

Q. We're removing that removable RF probe from Racz --

MR. PHILLIPS: Objection to form.

BY MR. KELLY:

Q. -- and replacing it with electrodes that are not removable?

MR. PHILLIPS: Objection.

BY MR. KELLY:

Q. Is that what you're suggesting

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in paragraph 172?

MR. PHILLIPS: Objection. Form.

A. I did not say they're not removable. I used the words that Racz uses -- excuse me, Fitz uses which is deployable. I say we would look at that at the invention of Fitz and say he uses the word deployable but I understand that I have to put the introducer into the body first and then put the electrodes in.

So I would try to be very careful in my language to use only the language of Fitz but I'm not saying that you're removing the deployable electrode of Racz, that's a mischaracterization of what I said.

BY MR. KELLY:

Q. Where is the deployable electrode of Racz in this example that you have in paragraph 172?

MR. PHILLIPS: Objection. Form.

A. Where is the deployable electrode of Racz?

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BY MR. KELLY:

Q. Excuse me. Where is -- you just testified a moment ago, I'm not saying that you're removing the deployable electrode of Racz. And I think you may have misspoke. So Racz has a removable RF electrobe, right or RF probe right?

A. Racz describes it as a removal RF probe, yes.

Q. And that removable RF probe is not present in the modification of Racz that you suggest in paragraph 172?

A. That's not what I said. I said a person of skill in the art would understand from reading Fitz that you have to insert the radiofrequency after inserting the introducer. But Racz doesn't use the word "removable," right -- excuse me, Fitz. Let me start that again.

A person of skill in the art would understand that Fitz describe as cannula which is put into the body and introducer and

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then electrodes deployed in that cannula. So I was very careful to use the language of Fitz which is deployable, but that doesn't mean they're not removable.

You seem to be drawing an inference because I use his language, that I have taken away the words of Racz which is a removable RF probe. That's not what I said.

Q. Well, you said here in paragraph 172 that you replaced Racz's single removable RF probe with the multiple deployable RF electrodes of Fitz, right?

A. Correct.

Q. In your proposed device, Racz's single removable RF probe is gone, and in its place are multiple deployable RF electrodes of Fitz, correct?

A. Yes, but there's multiple deployable RF electrodes of Fitz may be removable too. In which case, a single removable electrode of Racz is replaced by three deployable, also known as removable,

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electrodes of Fitz.

Q. Do you indicate in your declaration that the multiple deployable RF probe electrodes of Fitz are removal RF probes?

A. As I said, I -- let me read a little bit more because you're asking about one paragraph, and rather than focusing on one paragraph, let me read the context of this. I draw your attention to paragraph 174 where I say, [As read] "At the end of this, thus replacing Racz's temperature sensing probe with Fitz's electrodes could be seen as a reasonable functional trade off if the POSITA's objective were solely a expansion of the ablation volume."

Q. Could you describe the functional trade off that you're referring to?

A. The functional trade off goes back to what I have been saying, and that is, if you're designing a medical device, it's

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the intersection of the engineering, the clinical application and the anatomy and physiology.

So the clinician may have been prepared to trade off something like, hey, I would accept larger ablation volume, but not have temperature sensing. That is a trade off that a physician might have been prepared to make, which is basically what I say I think.

Q. So when you indicate in paragraph 174 that replacing Racz's temperature sensing probe with Fitz's electrodes could be seen as a reasonable functional trade off, what are the functions that are being traded off?

MR. PHILLIPS: Objection. Answered.

A. Racz's single RF probe provides a fairly small you ablation volume. Fitz's multiple RF probes provide a larger ablation volume. Fitz's RF probe has a temperature sensor. If it were necessary to

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make the RF probe smaller and it was necessary thereby to eliminate the temperature sensor, it may have been a reasonable functional trade off for a physician to expect -- to accept larger ablation volume, but not have a temperature sensor. That's all I'm saying in that paragraph.

BY MR. KELLY:

Q. So you're saying in your proposed modification of Racz, there is no longer a temperature sensing probe?

A. I don't think that's exactly what I say. If you look at more of paragraph 174, I say -- I also note that [As read] "Fitz alleges that it is able to achieve an enlarged ablation volume with its design and does not require temperature sensing with its design."

So if the Fitz design is multiple RF probe with that temperature sensing, incorporating those multiple RF probes of

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that temperature sensing may have been a reasonable functional trade off. That's all I'm saying.

Q. What I'm trying to understand is that the temperature sensing probe that you're saying you're replacing here is the one that's disclosed in Racz, right?

A. Yes. The RF probe, yes.

Q. So that RF probe is gone in your proposed modification of Racz?

A. Well, in the sense that the precise exact RF probe of Racz is no longer there and is replaced by three RF probes of Fitz, yes, I have replaced one single temperature sensing probe with three non-temperature sensing RF probe to Fitz, if that's what you're asking.

Q. But Fitz doesn't describe them as probes, right? Fitz describes them as electrodes?

A. It's to say one would understand they're indistinguishable.

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Q. Can you tell me how many removable RF probes are in the device that you have illustrated after paragraph 172 in your declaration?

A. It shows the three that you see in Fitz figure four. I took the end of Fitz figure four and added it to Racz, so it's exactly what's in figure four of Fitz.

Q. And your testimony is that all three are removable probes?

A. My testimony is that all three are deployable as Fitz describes them which may mean they are removable. Fitz does not specifically say they are removable, and what I think I testified before is that a POSITA would understand that the introducer of Fitz has to be put in the body and then the problems to deployed.

The POSITA would understand that those probes are deployed by inserting them. If they're insertable, then they are removable. I think we have answered this question ten

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different ways the same way so far.

Q. You haven't yet told me based on my understanding of your testimony how many removable RF probes are in this picture.

A. I thought I said three, the same as Fitz.

Q. You said three, but then you told me a minute ago that Fitz does not disclose removable probes.

A. Okay. Sorry. I may --

MR. PHILLIPS: Objection. Mischaracterizes.

A. I may have misunderstood your question. Would ask you it again?

BY MR. KELLY:

Q. How many removable RF probes are in the device that you have illustrated in paragraph 172 in your declaration?

A. There are three deployable probes from Fitz in this illustration, and a POSITA would understand that a deployable probe is likely to be removable. So the

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answer to your question is if you want to relabel Fitz's deployable probes as removable, then the answer is three.

Q. Are there deployable probes in the Stratus patents?

MR. PHILLIPS: Objection. Form. Scope.

A. The Stratus patent talks about a probe which is inserted into the cannula, if I remember correctly. So it is deployed into the cannula. Sure, it's deployable.

BY MR. KELLY:

Q. Deployable where?

A. What do you mean "where"? Deploy means make available for use. That's the -- how I understand it, the English language definition of that word. So its made available for use by inserting it into the cannula.

Q. Okay. So a deployable filament doesn't have to exit the cannula at any point?

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A. Where did I say that?

Q. You have said that the deploy just means "make available for use," and so an RF probe that is inserted into the cannula and never outside of it is deployed.

A. It could be, yes.

Q. Okay. So a deployable filament doesn't ever have to exit the cannula?

MR. PHILLIPS: Objection. Form.

A. I'm completely baffled by that question.

BY MR. KELLY:

Q. I'm as baffled by your answer because I'm having trouble understanding what you mean by "deploy". So deploy does not mean deploy out of something else?

A. Well, depends what the use is. Deploy means make available for use. If the use is, it needs to be out off, then deployable means out off. If deploy means -- sorry. If the use is to not go out of

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something, then deploying it means making it available for that use. You deploy troops to use in an army. You deploy -- it means make available for use. It doesn't means comes out of.

Q. I think we agree that Fitz does not disclose removable electrodes; is that right?

A. No.

Q. Where does Fitz disclose removable electrodes?

A. Fitz discloses deployable electrodes. An entry used to deploy a set of electrodes to an area to be treated. So if they're deployed, they're from one position to another position of use. That could mean that the introducer is put into the body, and then the electrodes deployed meaning into the introducer.

Q. So the word "deploy" did not appear anywhere in my question to you. My question was, where does Fitz disclose

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removable electrodes?

A. I think the word "deploy" could include the idea of removable electrodes. That's what I have been trying to say for sometime. If it's English language word definition, maybe we can look up a dictionary.

But certainly, in my mind and to a person of skill in the art, Fitz describes a cannula which is inserted into the body and then has electrodes that are deployed through that cannula. If they're deployed there at one point, and not there at another point, then by definition, they're removable.

Q. So you don't need a precise description of a features function and a reference for a POSITA to understand it? Is that what you're saying?

MR. PHILLIPS: Objection. Form. Foundation. Scope.

A. Understand what? You said "understand it". What's "it"?

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BY MR. KELLY:

Q. Well, you have testified that Fitz doesn't explicitly say that its electrodes are removable, right?

A. Yes.

Q. And even though Fitz doesn't say its electrodes are removable, you're saying that a POSITA would understand that the electrodes could be removable, right?

A. Well, let's look at the words of the patent again, rather than just talking about something else. Paragraph 19 of Fitz refers to Figure 3 and says [As read] "Allowing the electrodes to be independently or collectively slidingly received therein."

To me, that says the cannulated sleeve is introduced, then the electrodes are received into the cannula. Under paragraph 20, it says [As read] "The introducer is curved and a plurality of electrodes are deployed through the tip and multiple side ports."

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So when it talks about "slidingly received" or "electrode deployed through the tip," a POSITA would look at that and think, well, they could be removed to be slidingly received -- sorry. They could be removed not inserted in advance, in which case they are removable.
The inserter is put in, then the electrodes are put in, the therapy is provided, then the whole thing is removed. So although the Fitz references Spas, I think its fair to say a POSITA would understand that those electrodes which are received or deployed through the tip could be removable.
So your question seem to imply it's one or the other. I'm saying that's not true. I think the word deployable could include removable.

Q. And the electrodes that are slidingly received described with respect to Fitz's Figure 3; is that right?

A. That's correct.

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Q. And are those the electrodes that you proposed adding to Racz's device?

A. Well, if you look at the figures of Fitz and the description of Fitz, all the electrodes are described as being the same sort of thing. They're insulated electrodes, so the electrodes in Figure 3, and Figure 2 and Figure 4 are equivalent, and he describes them as being equivalent.

Q. In figure -- or in paragraph 172 of your declaration, you have arranged these images as a mathematical equation which reads based on the images Racz's device plus Figure 4 of Fitz equals your proposed combination, right?

A. That's what the figure shows, yes.

Q. Figure 3 is not in that equation, is it?

A. I beg your pardon?

Q. Figure 3 is not in the equation that you put this page 172 of your

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declaration, is it?

A. No.

Q. Okay.

A. Figure 4 is backwards and Figure 4 contains same electrodes that are in Figure 3 and Figure 2 of -- and figure 5 of Racz, so they're the same -- excuse me, of Fitz, so they're the same electrodes.

Q. Where does it say they're the same?

A. Under paragraph 9, it says [As read] "Each electrode has a proximal end configured for attachment to a source of energy and an exposed distal tip to deliver the energy to a localized region, and each electrode slides within its respective cannula to enhance the energy coverage area."

So that description of the electrodes is universal for all of the embodiments, each electrode.

Q. So the electrodes show in figure 5 slide within their respective

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cannula, correct?

MR. PHILLIPS: Objection. Foundation.

A. Paragraph 21 says, turning now to figure 5 -- turning now to figure 5, [As read] "Yet a further alternative embodiment of the invention is depicted. In this case utilizing an introducer having a tip and sufficient side port to form an array of electrodes once deployed."

So if those are electrodes are deployed in the same word that's used in previous embodiments, then those electrodes are sliding within that cannula, yes.

MR. KELLY: Okay. Let's take a break.

(A break was taken at 3:09 p.m.)

(Proceedings resumed at 3:31 p.m.)

BY MR. KELLY:

Q. Welcome back Mr. Crosby.

(Exhibit 1003 was marked for identification.)

BY MR. KELLY:

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Q. I have handed you an exhibit that's been previously marked Exhibit 1003 in this case. This is the 664 patent; is that right?

A. Yes.

Q. Okay. I just have a couple of questions for you about this patent. Could you turn to column 31 and review Claim 1 of the 664 patent?

A. I read Claim 1.

Q. Is Claim 1 of the 664 patent directed to -- excuse me. Is Claim 1 of the 664 patent limited to RF neurotomy?

A. I don't see any limitations for RF neurotomy in Claim 1.

Q. Could you review claim 21 beginning on column 32?

A. I reviewed 21.

Q. And is claim 21 in the 664 patent limited to RF neurotomy?

A. I don't see any limitations to RF neurotomy.

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Q. Okay. Let's turn back briefly in your declaration to paragraph 278, and I just had a couple minor questions to clarify your testimony on paragraph 278. When you say you assumed the filament link was 10 millimeters in paragraph 278, is that the length of the filament extending beyond the tip of the device?

A. Yes.

Q. Okay. And at the end of paragraph 278, you suggest the filament is not strong enough to penetrate tissue; is that right?

A. A .2 millimeter -- let me read this again. A .2 millimeter diameter filament -- where I say is half an ounce applied to the filament is not enough force to penetrate tissue.

Q. So, in what direction is that force acting on the filament?

A. In a longitudinal direction.

Q. So your testimony is that the

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maximum bending moment is measuring the resistance to force in a direction that is parallel to the longitudinal access of the filament?

MR. PHILLIPS: Objection. Form.

A. What I'm saying is, if you take a ten millimeter piece of wire that's.2 millimeters in diameter, and you apply a longitudinal compressive force to it, it will bend if the forces are greater than.2 or 16 kilograms.

BY MR. KELLY:

Q. In that example, where does the force apply to the filament, and in what direction relative to the filament?

A. The force would be applied along the long axis of the filament.

Q. In a direction that is perpendicular to the filament?

A. No. Along the long axis of the filament.

Q. So this is a force that is

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compressing the filament; is that right?

A. Correct.

Q. And you believe this -- the maximum bending force is a measurement of the filament's resistant to compression?

A. No. It's a resistance to bending.

Q. If it's resistant to bending, then wouldn't the force be applied perpendicular to the longitudinal access of the filament?

A. I don't understand your question. The filament is a one dimensional object. The force is applied in the direction of the length of the object. You're asking about another force applied lateral to it?

Q. Well, when I think of -- when I think of maximum bending moment, I think of a diving board at a swimming pool, so the diving board is can't leave it off over the swimming pool, right?

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A. You can't leave it like that.

Q. Right. And the diving board bends when someone stands on the end of the diving board, and in that example, the force is perpendicular to the longitudinal access of the diving board, right?

A. Yes, but that's got nothing to do with this example.

Q. Okay. So the here the -- here, maximum bending force is not measuring that force?

A. No. Go back to the example I gave before. Take a drinking straw. If you stand a drinking straw up on the table and put your force on it with your hand, it will bend probably in the middle. The longer that is, the thinner it is, the less force you need to bend.

So it's -- to get into the mathematics and the engineering is called Euiler's moment, E-U-I-L-E-R, he's the mathematician who figured it out, so any column, whether

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it's a column that supports a building like these one here will bend if the force in the longitudinal axis is enough based on the length, the diameter, and the material properties. It's not lateral force, it's longitudinal force.

Q. Okay. And these calculations assume that the filament is essentially floating in air, right?

A. No. It's assuming that there's a -- you're applying force in the longitudinal access, and there's resistance to that force which is either from the end or something else. If it's from the end, which is what this calculation is based on, then that will bend about halfway alone the axis with about 16 grams of force.

Q. Okay. If the filament length is ten millimeters and the filament is being used in an RF neurotomy device, then at that point, it would be surrounded by tissue along its length, right?

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A. Well, if it's inside the body, it's surrounded by something, yes.

Q. And would the fact that the filament is surrounded by tissue impact its resistance to bending?

A. It may depending on tissue. If it's surrounded by fluid, if it's in a blood vessel, it wouldn't have any difference.

Q. Okay.

A. If it's in bone, of course, it would.

Q. Let's turn back to Exhibit 1002. This is the 688 patent.

A. The 688 patent. I have it.

Q. Okay. Let's begin with figures 2A, 3A, and 3B in this 688 patent, and if you would have a look at those figures and just refresh your recollection of what is illustrated there. Let me know when you're done.

A. 2A, 3A, and 3B? Which figures

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again, please?

Q. 2A, 3A, and 3B.

A. Okay. I have it.

Q. And if you turn to column 5 of the 688 patent, about line 25. I think around line 25 is when the 688 patent offers some description on what is shown at figure 2A, thereafter figure 3A and 3B.

A. Column 5, line 25. Okay. I see.

Q. Okay.

A. Let me read it. How much do you want me to read?

Q. Well, I have questions for you that relate to what is shown in figures 3A, 3B and 2A, but this is an open book test, so feel free to refer to the description of what's this those figures in the patent. I wanted to give you a heads up to where a lot of it is described.

A. Okay.

Q. Okay. Let's start with figure

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2A.

And figure 2A is illustrating a needle 103; is that correct?

A. Yes, that's described on line 48, the needle 103.

Q. Okay. And among other things, the needle 103 includes an elongate member 203 tip 201?

A. Where are you reading from, please?

Q. I'm just looking at the figure 2A, but I think you can a description in column 5.

A. Okay. I see. Column 5, line 27, [As read] " The needle 103 may further include an elongate member 203."

Q. And a tip 201, correct?

A. Connected to the tip 201 at the distal end 202 of the needle.

Q. Do you see the elongate member on the tip illustrated in figure 2A?

A. 203 is the elongate member in

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figure 2A, yes.

Q. And do you see the tip 201?

A. I beg your pardon?

Q. Do you see the tip 201 in figure 2A?

A. Yes.

Q. Okay. [As read] "And the illustration embodiment of figure 2A, the needle 103 includes two deployable filaments labeled 206A, 206B." Let me know if that's correct.

A. Yes, I see that.

Q. Okay. [As read] "And these deployable filaments are deployed in and out of the needle by an actuator." And I think that is 216. Let me know if that's correct.

A. Yes, it's line 45 on column 5. [As read] "The filaments may be deployable and/or retractable by moving an actuator 216 relative to the hub 204."

Q. Okay. And at the proximal end of the needing, there's a luer fitting 220;

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is that right?

A. I'm trying to find where it's -- 220. Can you save me sometime and tell me where you find that in the description, please?

Q. Column 17, line 47.

A. 17, 27?

Q. 47. Line 47.

A. I beg your pardon.

A luer fitting 220. Yes, I see that.

Q. And the luer fitting allows the RF probe to be inserted into the needle; is that right?

A. Well, yes and no. The whole point of a luer fitting is that it is a tapered fitting that connects with a syringe. It's typical for communicating fluids, and I think that's what it says on line 48 on column 17.

[As read] "The luer fitting may be in fluid communication with the lumen and provoke a connection such that fluid may be

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delivered into the lumen and to the fluid port of the tip. The luer fitting may also be configured to allow for the insertion of the FR probe 401 into the lumen." So there's two functions.

Q. Okay. So the fitting allows for insertion of the RF probe into the lumen?

A. Yes.

Q. Okay. And so we have got -- if you look back at figure 2A, let me just recap what we just discussed, figure 2A illustrates a needle 103, right?

A. Yes.

Q. And elongate number 203, right?

A. Yes.

Q. And tip 201?

A. Yes.

Q. Deployable filaments 206A and 206B?

A. Yes.

Q. And actuator 216, correct?

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A. Yes.

Q. And a luer fitting 220?

A. Yes.

Q. Okay. Let's turn now to figure 3A, and I think this is a more detailed view of the tip and deployable filaments of the needle of figure 2A; is that right?

A. It appears to be, yes.

Q. Okay. [As read] "In figure 3A, the tip 201 show with a tapered portion 302 and a sharpened point 301?"

A. Where are you reading from?

Q. Look at column 6, line 25.

A. A sharpened point 301, yes, a tapered portion 302, yes, I see that.

Q. Okay. And you see those in figure 3A?

A. I do.

Q. And a tip in figure 3A includes a fluid port 210?

A. I'm looking at reference 210.

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Where did you find that one?

Q. I'm looking at column 7, line 38.

A. 210. Fluid port 210, yes, I see that.

Q. And if you look at figure 3A the filaments 206A and 206B are shown a deployed configuration; is that right?

A. Yes.

Q. And the tip 201 includes slots 304A and 304B. I think 304B is shown in figure 3A; is that right?

A. Where do you see those? Okay. Column 6, line 44, [As read] "The tip may include portal slot 304A and filament portal slot 304B."

Yes, I see that.

Q. And the slots 304A, 304B are guiding the filaments in and out of the needle 103; is that right?

MR. PHILLIPS: Object to form.

A. Where do you see the word

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"guiding"?

BY MR. KELLY:

Q. I'm just asking if that's what they did.

A. Well, I'm looking at the words in the patent. What the words in the patent says is -- this is on column 6, line 46 [As read] "The geometry of the filament slots may be selected to allow the filament to be adequately retracted such that they dispose within a cross sectional envelope of the body portion of the tip while the needle is inserted into the body."

I haven't read it all, but I don't see the word "guiding," the descriptor is fairly specific about the purpose of those slots.

Q. Well, in your opinion, are the slots guiding the filaments out of the needle?

A. What's your definition of word "guiding"?

Q. Whatever a POSITA would

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understand it to mean.

A. Yes, I could say that they're guiding the version of filaments.

Q. Okay. As you look at figure 3B, it shows another view similar to figure 3A but there are filaments are retracting; is that right?

A. Yes, that's correct.

Q. I would like you to consider all of the elements of the needle, one of the three that we just discussed, and those that are illustrated in figures 2A 3A and 3B, okay?

A. Yes.

Q. And also consider your definition of a POSITA that you have offered in your declaration.

A. Yes.

Q. Given the disclosure of the 688 patent, would a POSITA, at the time of the invention, have had significant skill to make the needle shown in figures 2A, 3A and

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3B?

MR. PHILLIPS: Objection. Scope.

A. Well, a POSITA wouldn't be restricted to just those illustrations because there are other illustrations in this patent which are also helpful. So I think the totality of the illustrations and the description in my view would be sufficient for a POSITA to make this.

BY MR. KELLY:

Q. So a POSITA skill, as you defined it in your declaration, is sufficient for them to make the needle is that is shown and described in figures 2A, 3A, 3B of the 688 patent?

MR. PHILLIPS: Objection. Scope.

A. Given the totality of the illustrations and the descriptions in the 688 patent, yes.

BY MR. KELLY:

Q. Okay.

A. If you're asking me, is 2A, 3A

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and 3B enough on its own, I don't know.

Q. Yeah. I'm not asking you on its own. It's asking, given the disclosure of 688 patent in its entirety, would a POSITA have been able to make the needle that's shown in figures 2A, 3A, 3B?

MR. PHILLIPS: Objection. Scope.

A. That's a slightly different question, but I understand the question. I think that given the illustrations and the totality of the disclosure, a POSITA would have been able to make this.

BY MR. KELLY:

Q. Okay. If we consider the totality of the 688 patent's disclosure, would you agree with me that the 688 patent is silent on how to manufacture the needle?

A. On how to what? Sorry?

Q. Manufacture the needle.

MR. PHILLIPS: Objection. Scope. Form.

A. I'm not sure I understand the

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question. You're saying -- can you repeat the question?

BY MR. KELLY:

Q. Would you agree that the 688 patent is silent on how to manufacture the needle shown in figure --

A. Oh, is silent. I didn't hear the word "silent".

MR. PHILLIPS: Same objection.

A. The 688 patent does not give details of manufacturing techniques, no.

BY MR. KELLY:

Q. Okay. And despite that, a POSITA would have been able to make the needle that cease shown in the patent?

MR. PHILLIPS: Objection. Scope.

A. I believe so because the description is fairly detailed. A POSITA reading this in a large patent application and looking at all illustrations I think would have been able to make this.

BY MR. KELLY:

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Q. Okay.

A. At least the first few.

Q. If you look through the figures of the 688 patent, and I invite you to look at all of them, there's not a single illustration that shows the RF probe inserted into the needle 103; is that correct?

A. Figure 1, yes. Figure 4 is the illustration, and I'm trying to find the part in the description which is applicable to Figure 4. You might be able to save me time if you know exactly where it is.

Q. I think the RF probe is element 400 and that's discussed beginning at the bottom of column 4.

A. Column -- 400, you said?

Q. Yes.

A. Yes. That describes the bottom of column 4, it says [As read] "Turning to Figure 4 and exemplary -- probe assembly 400 compatible with the needle 103 as illustrated. The RF probe assembly 400

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includes an RF probe 401 that maybe inserted into a patient (EX: Through needle 103) and may direct RF energy to the target tissue."

So it's pretty clear from the description that the RF probe is inserted through the needle 103.

Q. Okay. And the RF probe is labeled 400 in Figure 4?

A. Yes. The RF probe assembly is labeled 400, if I remember correctly, yes. RF probe 400.

Q. And all the components of RF probe assembly are given 400 series numbers?

A. I believe so, yes.

Q. Okay. So my first question is, is there any illustration anywhere in the 688 patent that shows the RF probe inserted into the needle?

A. I can't find an illustration with the probe inserted into the needle, but it's not clear in any of these -- well, I don't think so. The answer to your question,

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I don't think so.

Q. Okay. And so the position of the probe relative to the deployable filaments is never illustrated; is that right?

A. That's no illustration of probe relative to the filaments.

Q. And the 688 patent never indicates what the size of the filaments are, correct?

A. The size, did you say? I haven't read it all again, so are you representing that to me or do you want me to read it and find out?

Q. Well, let me ask you -- I know we're a little pressed for time, so I don't want you to read the entire patent. I think we agree that the 688 patent never illustrates the RF probe inserted into the needle, right?

A. It doesn't illustrate it, but it certainly describes it.

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Q. Okay. It never illustrates the position of probe relative to the filaments?

A. Again, I can't say that without reading it. Will you represent that to me?

Q. No. I'm asking, does the 688 patent illustrate the position of the probe relative to the filaments?

A. I don't believe so, no.

Q. Okay. And despite that, a person of ordinary skill in the art at the time of the invention would have been able to make this needle?

A. I believe so.

MR. PHILLIPS: Objection. Form.

BY MR. KELLY:

Q. Let's turn back to the Racz reference. Exhibit 1009.

A. I have it.

Q. We talked a lot about Racz, so I assume you're fairly familiar with its

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disclosure by now.

A. Let's see.

Q. Well, have a look just briefly at figures 1 through 3B. That's all of them.

A. Yes.

Q. Given the disclosure of the entirety of Racz, do you believe a person of ordinary skill would have been able to make the needle is that is shown and described in Racz?

MR. PHILLIPS: Objection. Scope.

A. I believe so.

BY MR. KELLY:

Q. Okay. Let's look at the Lee reference, Exhibit 1010. Now, there's a lot more figures in Lee. Let's just start with Figure 1. If you turn with me to paragraph 91 of Lee, this is describing Figure 1; is that right?

A. Yes, I see paragraph 91 referring to Figure 1.

Q. Okay. And so in Lee, Figure 1

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illustrates an ablation trocar 10, correct?

A. Yes.

Q. Lee's abrasion trocar 10 includes a plurality of delivery mandrel surfaces 12, correct?

MR. PHILLIPS: Objection. Form.

A. Figure 1. I'm looking for 12. Can you show me where 12 is?

BY MR. KELLY:

Q. Yeah. I'm just reading from paragraph 91.

A. That's the problem because there's no 12 on Figure 1.

Q. I'm sorry. The delivery manual surfaces are shown on Figure 2; is that right?

A. Figure 2 shows elements labeled 12, yes.

Q. Okay. So let's refer collectively to figures 1 and 2 in Lee; is that okay?

A. Okay.

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Q. Okay. So figures 1 and 2 in Lee show the ablation trocar 10 and the delivery manual services 12, right?

A. Well, I'm not sure because it's not clear to me if this is even the same embodiment because there are elements on Figure 2 which don't appear in Figure 1, and it's unclear to me where they sit relative to each other.

Q. Okay. Let's just talk about Figure 1. So Figure 1, we have got ablation trocar ten, right?

A. The whole thing, yes.

Q. And the ablation trocar ten includes a trocar .14; is that right?

A. We're reading on paragraph -- actually, yes.

Q. I'm back in paragraph 91 now.

A. Okay.

Q. Okay. And the trocar point 14 is mounted on a cannula 16?

A. Well, perhaps. 16, I'm not

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really sure where that points to. It points to some vague dotted lines, but described as a cannula, so let's take that at face value.

Q. Well paragraph 91 says, [As read] "In accordance with the invention trocar .14 is mounted on a cannula 16."

A. Yes.

Q. Right?

A. I see that. Yes.

Q. Okay. And further down in paragraph 91, we learn that trocar .14 includes a forward piercing edge surface 18.

A. I see that.

Q. And in paragraph 92, Lee indicates the cannula 16 defines an internal lumen 20, correct?

A. Again, that's what the language says. The figure is a little ambiguous. It's a dotted line referring to a dotted line somewhere, but I take the description on face value.

Q. Okay. And the internal lumen

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20 of the cannula 16 carries a plurality of stylets 22, right?

A. That's what 92 says, yes.

Q. And the stylets 22 can be made of nickel titanium alloy, right?

A. That's what it says on 92, yes.

Q. Bearing in mind those elements shown in Lee's Figure 1 and the disclosure of Lee in its entirety, would a POSITA at the time of the invention have been able to make this needle?

MR. PHILLIPS: Objection. Form. Scope.

A. Well, maybe. But this is only one end of it. The other references we looked at showed the entire thing. So I don't see a picture of the entire thing here, so it's hard for a POSITA to know what the entire thing looks like. So more difficult.

A POSITA might have been able to make this end of it, but to the best of my

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knowledge, there is no illustration of the entire thing which would inform a POSITA how to make the entire thing. There's no illustration of it that I can find.

BY MR. KELLY:

Q. Let's consider it confined to what's shown in Figure 1. Would a POSITA, at the time of the invention, have known how to make the trocar .14 and the stylets 22?

MR. PHILLIPS: Objection. Form. Scope.

A. Maybe. As we have talked about several times today, I don't have dimensions on this. So maybe. It would require some assumptions about the dimensions and some experimental work, so the answer is maybe.

BY MR. KELLY:

Q. Okay. Earlier today, you testified that what's described in Lee was eventually commercially marketed by -- was it HALT Medical (ph); is that right?

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A. It's the access to the device we were lock looking at before.

Q. Okay. So we know as a matter of fact that Lee was eventually turned into an actual physical product, right?

MR. PHILLIPS: Objection. Foundation.

A. We know it's a physical product which described by an inventor of Lee as being his device, so I think it's fair to say that certain elements of Lee ended up in a physical device, but because there's not -- I can't see the whole thing. I can't answer your question.

BY MR. KELLY:

Q. Well, I'm asking -- let me ask you, sitting here today, can you think of any reason that a POSITA would not have been able to manufacture the trocar point and stylets shown in Figure 1 of Lee at the time of the invention?

MR. PHILLIPS: Objection. Form.

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Scope.

A. Well, yes, because this is shown as in Figure 1 and Figure 2, the stylets that's extended and a stylets retracted, and there's no information about how they're activated like that.

So, could I have made Figure 1 with stylets extended? Possibly. Could I have figured out how to extend or retract those stylets? There's no information in Lee that gives me that. The fact that there's a commercially approved device that the patent may apply to or read on doesn't mean this patent provides all the information you need to make that device.

BY MR. KELLY:

Q. Could you look at paragraph 106 of Lee?

A. I see 106.

Q. And in paragraph 106, Lee indicates that [As read] "The stylets 22 can be connected to suitable advancement and

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retraction mechanisms." Correct?

A. That's the words, yes.

Q. And paragraph 106 of Lee says that [As read] "Those mechanisms may be of a conventional design." Correct?

A. That's what the words say. I have no clue what that means.

Q. Would a POSITA be familiar with conventional designs?

A. A conventional design for --

MR. PHILLIPS: Objection. Form.

BY MR. KELLY:

Q. If you let me finish my question, that would be helpful. Would a POSITA at the time of the invention be aware of conventional designs for advancement and retraction mechanisms?

MR. PHILLIPS: Same objection.

A. I don't know any mechanism that a POSITA would have known at the time of this patent to advance ten stylets like that. So I don't know what Lee says. It's a

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conventional design. I have no idea.

BY MR. KELLY:

Q. So, is your definition of a POSITA inconsistent of Lee's understanding of what is and isn't conventional?

MR. PHILLIPS: Objection. Foundation.

A. I'm trying to understand that question. Lee doesn't define a POSITA, does he?

BY MR. KELLY:

Q. Well, no. But Lee is saying that the advancement and the retraction mechanisms that are used to deploy stylets 22 are conventional.

A. An inventor could just as easily said look, I've designed this perpetual motion (inaudible) and anyone could make it using conventional materials. It doesn't mean it's possible.

Q. But we know it's possible because we spent an hour today talking about

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the Acessa device, right?

A. But you asked a different question. You asked based on this, would a POSITA have been able to make the device? And now you're saying that the device exists, but I don't know if the device that exists was based solely on this patent or any other patents that are applied to that or any other work that was done. I don't think there's enough information in this patent to go from the patent to the device.

You're talking about an opposite direction. A device exist, therefore the patent must have enabled it. I don't think that's how it works.

Q. You have pointed to the Acessa manual in your declaration, right.

A. Yes.

Q. Based on what you just said, isn't the Acessa manual completely irrelevant?

MR. PHILLIPS: Objection. Form.

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A. I don't think so.

BY MR. KELLY:

Q. You just said "I don't think there's enough information in this patent to go from the patent to the device." Right?

A. That's correct.

Q. So, how is the Acessa manual relevant if there's not enough information to go from the patent to the device that's in the manual?

A. I think you have an error of logic there. I can go from an existing device and say there's a patent that applies to this. There might be ten patents that applies. There may be another patent that talks about deployment mechanism, I don't know.

What I'm saying is, based solely on what's in this lead patent, I don't think a POSITA would have had enough information to make the Acessa device, but that's not the same as saying the device exists, therefore

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there must be enough information in the patent to make it. That's logically inconsistent.

Q. Is that because your opinion is that advancement and retraction mechanisms at the time of Lee's filing were not conventional?

A. Well, I think what Lee said in the portion you quoted is, it is of conventional design. I have no idea what was in his head, what is in the inventor's head when he thought about conventional design.

I'm saying that from my knowledge, I know of no mechanism at the time that could have been used or was being used to advance multiple stylets like this. Obviously, someone invented something to do it because the device exists, but that's not the same as saying this is adequate information to do it.

Q. So under your definition of level of skill in the art, the POSITA lacks the skill to implement conventional

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advancement and retraction mechanisms in RF ablation needle?

MR. PHILLIPS: Objection. Form.

A. That's nothing like what I said. I'm sorry.

BY MR. KELLY:

Q. Well, are you saying a POSITA does have the skill to implement conventional advancement and retraction mechanisms in an RF ablation needle?

A. You asked -- that's a different question from what you said before. Is your question restricted to the lay design or all RF ablation needles? I don't understand your question.

Q. I'm just trying to understand under your definition of a POSITA what that person is and is not capable of doing based on their skill in the art, okay?

So under your definition of a POSITA, does that person have the skill to implement conventional advancement and retraction

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mechanisms in an RF ablation device without a blueprint as to how to do so.

A. It depends if it's a straight-forward RF ablation device that's similar to things that are already in existence, yes. If it's a new design that requires technologies or techniques that haven't been used before, maybe not.

Just because Lee says it uses conventional techniques, doesn't mean that those conventional techniques exist or were known by people at the time. I don't know that. I don't know of a conventional technique to extend this number of filaments and the patent is silent on how that works, or would have required some invention and experimentation to do that.

Q. So in your analysis of Lee's disclosure, you are not assuming that mechanisms Lee describes at conventional were actually known in the art?

MR. PHILLIPS: Objection. Form.

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A. I don't know what was in Lee's head when he thought -- when he wrote mechanism -- exactly what he wrote, conventional design. I don't know what was in his head.

BY MR. KELLY:

Q. I didn't ask you what was in Lee's head. My question was, in your analysis of Lee's disclosure, did you assume that the mechanisms Lee describes as conventional were known in the art?

MR. PHILLIPS: Objection. Form. Scope.

A. I didn't do an analysis of Lee's invention to figure out how I would have made it as a person of skill in the art. Lee describes it as being conventional design. I don't know what that means. He provides no other information. He does not provide a complete description or illustrations of how this would have been implemented.

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So I don't know if a quote conventional extension retraction mechanism there was known to a POSITA at the time would have been applicable to this. There's no information in the patent to tell me how to do it.

MR. KELLY: Okay. Let's take a quick break. I think I might be done.

(A break was taken at 4:20 p.m.)

(Proceedings resumed at 4:24 p.m.)

MR. PHILLIPS: Are you ready, Mr. Crosby -- tell me when you're ready.

MR. KELLY: No further questions, Mr. Crosby. Pass the witness.

EXAMINATION

BY MR. PHILLIPS:

Q. Mr. Crosby, I have a few questions for you. First of all, you described this morning a conversation you had with someone at Stratus, an executive at Stratus in the presence of Stratus's lawyers. Do you remember that?

A. Yes.

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Q. Was I present during that conversation?

A. I think so. I couldn't be certain, but I think so.

Q. Was it an in-person conversation?

A. No, it was by zoom.

Q. Do you know the position of the Stratus executive who was present during that conversation?

A. I can't recall. I'm sorry.

Q. Was it the CEO?

A. I think it was the CEO.

Q. Was his name Brett Boudousquie?

MR. KELLY: Objection. Form.

A. I'm sorry. I can't remember his name, but I recall that it was the CEO.

BY MR. PHILLIPS:

Q. Okay. All right. Let's look at Exhibit 2008.

A. Which is that one? The claims

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chart?

Q. Yes. Mr. Crosby, do the images in 2008 accurately represent the NIMBUS devices that you personally inspected?

A. Yes.

Q. Do the images in Exhibit 2008 fairly represent the NIMBUS devices that you personally inspected?

MR. KELLY: Objection. Form.

A. I don't understand the difference between fairly and accurately. They're accurate.

BY MR. PHILLIPS:

Q. Okay. Right, let's take a look at Lee.

A. At Lee?

Q. That's Exhibit 1010. And let's look at paragraph 115.

A. 115?

Q. Yes, its on page 9, and I'm referring to the page number at the top of the page. I'm sorry. 150.

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A. Okay.

Q. It's the last paragraph before the claims.

A. I see it.

Q. Now, you were asked about the paragraph earlier today. And it refers to -- well, it says that at the end. [As read] "The inventive device may be employed in a wide variety of circumstances."

MR. KELLY: Objection. Form.

BY MR. PHILLIPS:

Q. Do you see that?

A. Yes, I see that.

Q. Does the paragraph direct one of ordinary skill in the art to any particular other variety of circumstances in which Lee's device may be employed?

MR. KELLY: Objection. Form.

A. The title of Lee is RadioFrequency Ablation Device For the Destruction of Tissue Masses. So reading the title in the description, I would consider

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the wide variety of circumstances that he refers to as circumstances in which ablation might be used for the destruction of tissue masses.

BY MR. PHILLIPS:

Q. In your opinion, is there a particular type of tissue mass that is the primary focus of the Lee patent?

MR. KELLY: Objection. Form.

A. Yes. Lee's patent is primarily directed towards tissue masses that are cancer or tumors.

BY MR. PHILLIPS:

Q. All tumors or any particular type of tumor?

A. The patent is directed specifically towards uterine fibroids. Yes, uterine fibroids.

Q. Are there any particular examples described in the -- that are specifically described for tissue masses other than uterine fibroids?

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A. I don't think so. I haven't read Lee from cover to cover again, but I don't believe so.

Q. Okay. Let's look at Claim 1 of Lee. In your work in this case, have you formed an opinion whether Claim 1 of Lee is enabled in its full scope?

MR. KELLY: Objection. Form.

A. Claim 1 appears to be limited to the distal end of the cannula which is illustrated in the thing we were discussing before. I'm sorry, Figure 1. So to the extent that Claim 1 is limited to Figure 1, I think Lee enables construction of Figure 1, but not the whole device.

BY MR. PHILLIPS:

Q. Have you formed an opinion whether Claim 1 of Lee is enabled for treatment of masses other than uterine fibroids?

MR. KELLY: Objection. Form.

A. It's hard to tell. I haven't

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looked to see in Figure 1 would be appropriate to other types of masses. I don't recall there's any language in Lee that's specific to using the trocar point to other types of masses.

BY MR. PHILLIPS:

Q. How big are uterine fibroids?

A. How big?

Q. How big?

A. Uterine fibroids can be from anything to the size of a large grape to a basketball. Very uncomfortable.

Q. Does the fact that Lee's device is used to treat uterine fibroids indicate to a POSITA what the size of Lee's device is?

MR. KELLY: Objection. Form.

A. A POSITA would understand that the engineering of the device as we talked about before has to match the clinical use and the physiology and anatomy of the target tissue. So a POSITA looking at Lee would

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think of a uterine fibroid, and think of this as being suitable for something of that size mass, from a large grape to a basketball.

BY MR. PHILLIPS:

Q. Let me ask you about Fitz. That's Exhibit 1011.

A. I have it.

Q. I'm going to be very careful with my use of terminology here, especially with terms like electrodes, probes, filaments, etc. So let me know if any of my questions are not clear.

MR. KELLY: Objection. Form.

BY MR. PHILLIPS:

Q. Does the Fitz patent application ever call its electrodes RF probes?

A. No. I think they're referred to as electrodes.

Q. Does Fitz ever refer to his -- those electrodes as probes at all?

MR. KELLY: Objection. Form.

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A. I don't recall such without reading the whole thing again. I don't recall that he does, no.

BY MR. PHILLIPS:

Q. Okay. In your declaration which is Exhibit 2006, do you in your declaration ever refer to Fitz's electrodes as probes?

A. I don't recall specifically, but I could read those Fitz sections again or if you can point it out to me. So my description of Fitz starting on page 29 talks at RF ablation electrodes, heat electrodes. Electrodes, electrodes, I don't refer to probes there. I refer to them as electrodes, the same as Fitz refers to them.

Q. Would you please turn to paragraph 174 of your declaration. It's on page 52. Take a moment to refamiliarize yourself with that paragraph, and tell me when you're ready. I'm going to ask you a question or two about it.

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A. I have read it, yes.

Q. Can you explain to us in your own words what you mean -- what your point is in paragraph 174?

MR. KELLY: Objection. Form.

A. This section is about a POSITA who was motivated to increase ablation volume, could have come up with a combination of Racz and Fitz, which would achieve that objective of ablation value, and would not necessitate strengthening Racz's tip.

And there are two type of systems here that we have been talking about. One is a design that uses a removable radiofrequency probe, and another is a system that uses deployable filament design, and they to me are different.

And what I'm saying is the combination of Racz and Fitz would respect those boundaries between a removable probe and deployment filament design, and maintaining the ability to deliver fluid to the

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radiofrequency ablation site.

Then we talked earlier, counsel was asking me about the trade off question of having Racz's temperature of sensing probe replaced with Fitz's electrode could be seen as a reasonable trade off. I know I'm just rambling. I'm not sure I answered your question.

BY MR. PHILLIPS:

Q. That's fine. So in this paragraph, you refer to, [As read] "The conventional boundaries between, one, removable RF probe based designs, and two, filament based designs." In which of those two categories is your proposed combination of Racz and Fitz?

MR. KELLY: Objection. Form.

A. This is a design that deployable filaments Racz -- excuse me, Fitz talks about electrodes being deployed.

BY MR. PHILLIPS:

Q. Do you have a clear

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understanding of what Fitz means when he says "that the electrodes may be deployed"?

MR. KELLY: Objection. Form.

A. Well, my understanding is based on the words that he says. An introducer used to deploy a set of electrodes to an area to be treated, so as I talked about before, the word "deploy" in my mind means make available to use. So the Fitz invention, the introducer is inserted, and then the electrodes are deployed to make them available for RF ablation.

BY MR. PHILLIPS:

Q. Does Fitz anywhere in the document describe what he means by the word "deploy"?

A. I don't think so, no.

Q. Does Fitz in this document every define the word "deploy"?

A. No.

Q. Does Fitz ever say that the electrodes may be completely removed from

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their introducers?

MR. KELLY: Objection. Form.

A. He doesn't say that, no.

BY MR. PHILLIPS:

Q. Let's look at paragraph 110 of your declaration. It begins on page 30.

A. I have it.

Q. What do you mean when you say in the third sentence [As read] "Fitz Figure 4 in its description are too vague and lacking of detail to present a meaningful teaching of how to achieve that embodiment."

MR. KELLY: Objection. Form.

A. Well, Fitz describes just the --

MR. KELLY: Objection scope also.

A. Fitz describes just the distal end of these embodiments in his invention without providing any information about how those electrodes are deployed at the distal end.

So I don't know how to achieve the

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embodiment because he doesn't tell me how to deploy those electrodes, and I say that here in my paragraph 110. [As read] "From Fitz Figure 4 and its one paragraph description in the text how the embodiment is constructed to achieve the employed configuration shown."

BY MR. PHILLIPS:

Q. What do you mean by the last sentence of this paragraph 110?

MR. KELLY: Objection. Form.

A. The sentence says [As read] "Fitz does not teach how to make a functional device having how to deploy electrodes shown in Figure 4."

So Fitz chose the distal end of an introducer with radiofrequency electrodes deployed, but does not teach how to actually achieve it. So there's no information on Fitz on how to deploy those electrodes as shown in Figure 4.

BY MR. PHILLIPS:

Q. Okay. Thank you, Mr. Crosby.

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That's all I have.

MR. KELLY: We can go off the record. I'll need a minute before recross.

(A break was taken at 4:43 p.m.) 4:43 p.m.

(Proceedings resumed at 5:01 p.m.)

EXAMINATION

BY MR. KELLY:

Q. Mr. Crosby, welcome back. From the time we started the deposition this morning to the time I completed my cross-examination, did you have any conversations with your counsel related to any of your testimony?

A. No.

Q. Did you have any conversations with your counsel today related to your declaration or any of your testimony today?

A. Are you asking if I had any conversations today from the time the deposition started?

Q. Yes.

A. I had no conversations about

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my -- any of that today.

Q. Okay. So from the time the deposition started this morning until now, you have had no conversations with your counsel related to your declaration or any of your testimony today?

A. That is correct.

Q. Okay. You indicated earlier during Mr. Phillips' questioning that at one point, you spoke with Mr. Boudousquie, the CEO of Stratus; is that right?

A. Yes, he had to remind me of his name, but that's correct.

Q. And about when was this conversation?

A. Late February, early March thereabouts. I don't recall the exact date.

Q. Did you speak with Mr. Boudousquie more than once?

A. No. Just once.

Q. And for this one conversation with Mr. Boudousquie, who was present?

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A. My recollection is a little hazy to be honest, but my recollection is Mr. Phillips was present, and I can't recall if there was another person present.

Q. You can't recall who that person was or you're not sure if there was a fourth person?

A. It was a while ago, and it didn't register that much impact. There may have been another person present, but I honestly can't be sure.

Q. And you're not sure whether Mr. Phillips was part of that conversation?

A. I think so, but I can't recall.

Q. Do you recall how long this conversation lasted?

A. Gosh, maybe five minutes.

Q. What did Mr. Boudousquie tell you during this conversation?

MR. PHILLIPS: Objection. Privilege. Do not answer.

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BY MR. KELLY:

Q. In preparing your declaration, did you rely on anything Mr. Boudousquie told you during that conversation?

A. No.

Q. In preparing for today's testimony, did you rely on anything Mr. Boudousquie told you?

A. No.

Q. Do you recall whether Cody Jorgenson at Stratus, was part of this conversation with Mr. Boudousquie?

A. No, he was not. I haven't met him.

Q. I think you testified earlier today that at one point you spoke with Cody Jorgensen; is that correct?

A. Who is Cody Jorgensen?

Q. I believe he's the chief marketing officer of Stratus Medical.

A. If I said that, I was probably confused with the other conversation I have

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had. I don't think I have ever spoken with Cody Jorgensen. I think if I said so, it's probably because I couldn't remember the name of the CEO when you asked me that question.

Q. So to the best of your recollection, you haven't spoken with Mr. Jorgensen?

A. No. To the best of my recollection, that's correct.

Q. And you did talk to Stratus's CEO, Mr. Boudousquie?

A. I had a short conversation. It was about five minutes, as I said, with a person from Stratus who I believe was the CEO. I got confused with his name, and I'm pretty sure, but can't be certain that Mr. Phillips was present.

Q. Earlier when you were answering questions posed by Mr. Phillips, you were asked whether you had formed an opinion as to whether Claim 1 of Lee is enabled for treatment of masses other than

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uterine fibroids. Do you recall that question?

A. I do recall the question, yes.

Q. And you recall responding to that question?

A. I recall responding. I can't remember the exact response, but I do recall that I responded.

Q. When did you form an opinion as to whether Claim 1 of Lee is enabled for treatment of masses other than uterine fibroids?

MR. PHILLIPS: Objection. Foundation.

A. I don't think there was a specific point in time. I have been reading the Lee patents for a few months now. I think the best way to answer is my opinions emerge over time. I don't think there is a specific date that my opinion became what you described.

BY MR. KELLY:

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Q. But this opinion was not expressed in your declaration, right?

A. I don't think that was in my declaration, no.

Q. Okay. Did you form an opinion as to whether Claim 1 of Lee is enabled for treatment of masses other than uterine fibroids before today?

A. I formed opinions about whether all of these patents were enabled before today. I think your question is more specific about, and correct me if I'm wrong, about the treatment of things other than uterine fibroids. So can I just make sure I understand the question before answering?

Q. Well, Mr. Phillips referred you to Claim 1 of Lee. You're welcome to look at Claim 1 of Lee if you like, and he asked you whether Claim 1 of Lee has enabled the treatment of masses other than uterine fibroids.

A. Can you read back the question

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for me please?

Q. The question that Mr. Phillips posed to you?

A. Yes.

Q. Sure. Mr. Phillips asked you, [As read] "Did you form an opinion as to whether Claim 1 of Lee is enabled for treatment of masses other than uterine fibroids?" Sorry. Excuse me. I'm reading my own question to you now.

Okay. Mr. Phillips asked you earlier today [As read] "Have you formed an opinion whether Claim 1 of Lee is enabled for treatment of masses other than uterine fibroids?"

A. And what was my answer?

Q. You said [As read] "It's hard to tell. I haven't looked to see in Figure 1 would be appropriate for other types of masses. I don't recall there's any language in Lee that specifically using other types of masses." And I apologize because the

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transcript is not finalized yet, so I can't tell you exactly what your answer was. I'm just curious when the opinion was formed and whether it was before today.

A. Well, there are two elements to that question I think. One is, did I form an opinion about whether or not Lee Claim 1 was enabled, and since Lee Claim 1 is not specific to uterine fibroids, and if Claim 1 is enabled for anything, then it's enabled for masses that will Lee is directed toward, and it says right here, [As read] "Frequency ablation device for the destruction of tissue masses."

So I go back to the answer I said. I haven't thought about it in terms of other tissue masses. I think that's what I said in my previous answer.

Q. Did you employ the Wands factors when you were forming your opinion about the enablement of Claim 1 of Lee?

MR. PHILLIPS: Objection.

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Foundation.

A. I'm aware of the Wands factors. I didn't specifically go through each one of the Wands factors. I look at it from the perspective of, what does Claim 1 say and doesn't give me enough information to enable me to implement this device according to Claim 1? I could go through Wands factors now if you want, but I didn't specifically do that at the time.

BY MR. KELLY:

Q. So to the extent that your testimony is that you did form an opinion, you formed that opinion when Mr. Phillips asked you the question?

A. Well, I said there are two elements to it, did I? Form an opinion as to whether it was enabled, and did I form an opinion as to whether it was enabled for masses other than uterine fibroids?

And I think I said I had thought about the second part of that question, so from

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that perspective, I hadn't formed an opinion before today until I was asked that question.

Q. Okay. So you hadn't thought about that until Mr. Phillips asked you?

A. For that specific second part of question, for masses other than uterine fibroids, not until today.

Q. When did you form an opinion as to whether Claim 1 of Lee was enabled for treatment of uterine fibroids?

MR. PHILLIPS: Objection. Foundation.

A. I think I described that earlier that there's no single date like that. I have been reviewing all of these patents for some time, and my opinions emerged over time, so I can't give you a specific date.

BY MR. KELLY:

Q. But that opinion is not expressed in your declaration?

A. That opinion is not

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specifically expressed in the declaration.

Q. And you formed it before today?

A. Yes.

MR. KELLY: No further questions.

THE WITNESS: Okay.

THE COURT REPORTER: Could I get transcript orders on the record, please?

MR. KELLY: We would like a transcript order. Can we get it in a week?

THE COURT REPORTER: Did you want a transcript?

MR. PHILLIPS: Yes. At the same time, please, and a rough transcript as well.

MR. KELLY: Can we get a rough to.

(Thereupon, the deposition concluded at 5:14 p.m. and reading and signing was waived.)

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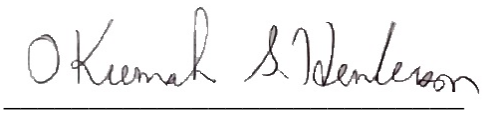
CERTIFICATE

I, Okeemah S. Henderson, RPR, the officer before whom the foregoing deposition was taken, do hereby certify that the foregoing transcript is a true and correct record of the testimony given; that said testimony was taken by me stenographically and thereafter reduced to typewriting under my direction; that reading and signing was not requested; and that I am neither counsel for, related to, nor employed by any of the parties to this case and have no interest, financial or otherwise, in its outcome.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my notarial seal this 15th day of August, 2025.

My commission expires:

November 30, 2027



Okeemah S. Henderson, RPR

Official Court Reporter

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