1 UNITED STATES PATENT AND TRADEMARK OFFICE

2 BEFORE THE PATENT TRIAL AND APPEAL BOARD

3 - - - - - - - - - - - - - - -x

4 NEURENT MEDICAL INC. and :

5 NEURENT MEDICAL LTD., :

6 Petitioners, : IPR2024-00277

7 v. : Patent 11,241,271 B2

8 AERIN MEDICAL INC., :

9 Patent Owner.

10 - - - - - - - - - - - - - - -x

11

12 Deposition of Gregory T. Martin, Ph.D.

13 Boston, Massachusetts

14 September 25, 2024

15 9:05 a.m.

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20 Job No.: 553701

21 Pages: 306 - 449

22 Reported By: Alan H. Brock, RDR, CRR

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
3 - - - - - - - - - - - - - - -x
4 NEURENT MEDICAL INC. and :
5 NEURENT MEDICAL LTD., :
6 Petitioners, : IPR2024-00278
7 v. : Patent 11,033,318 B2
8 AERIN MEDICAL INC., :
9 Patent Owner.
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12 Deposition of Gregory T. Martin, Ph.D.
13 Boston, Massachusetts
14 September 25, 2024
15 9:05 a.m.
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20 Job No.: 553701
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22 Reported By: Alan H. Brock, RDR, CRR

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
3 - - - - - - - - - - - - - - -x
4 NEURENT MEDICAL INC. and :
5 NEURENT MEDICAL LTD., :
6 Petitioners, : IPR2024-00282
7 v. : Patent 11,766,286 B2
8 AERIN MEDICAL INC., :
9 Patent Owner.
10 - - - - - - - - - - - - - - -x
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12 Deposition of Gregory T. Martin, Ph.D.
13 Boston, Massachusetts
14 September 25, 2024
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20 Job No.: 553701
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22 Reported By: Alan H. Brock, RDR, CRR

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2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
3 - - - - - - - - - - - - - - -x
4 NEURENT MEDICAL INC. and :
5 NEURENT MEDICAL LTD., :
6 Petitioners, : IPR2024-00669
7 v. : Patent 11,679,077 B2
8 THE FOUNDRY, LLC, :
9 Patent Owner.
10 - - - - - - - - - - - - - - -x
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12 Deposition of Gregory T. Martin, Ph.D.
13 Boston, Massachusetts
14 September 25, 2024
15 9:05 a.m.
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20 Job No.: 553701
21 Pages: 306 - 449
22 Reported By: Alan H. Brock, RDR, CRR

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1 A P P E A R A N C E S
2 ON BEHALF OF PETITIONERS:
3 WILMER CUTLER PICKERING HALE AND DORR LLP
4 ALEXIS COHEN, ESQ.
5 2100 Pennsylvania Avenue NW
6 Washington, D.C. 20037
7 202.863.6000
8 alexis.cohen@wilmerhale.com
9
10 WILMER CUTLER PICKERING HALE AND DORR LLP
11 ALEXANDER J. NEMTZOW, ESQ.
12 SARAH J. MURPHY, ESQ.
13 60 State Street
14 Boston, Massachusetts 02109
15 617.526.6000
16 alexander.nemtzow@wilmerhale.com
17 sarah.j.murphy@wilmerhale.com
18
19
20
21
22

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IPR2024-00282

1 ON BEHALF OF PATENT OWNER:
2 GREENBERG TRAURIG, LLP
3 HEATH J. BRIGGS, ESQ. (REMOTELY)
4 1144 15th Street, Suite 3300
5 Denver, Colorado 80202
6 303.572.6500
7 briggsh@gtlaw.com
8
9 GREENBERG TRAURIG, LLP
10 BENJAMIN P. GILFORD, ESQ.
11 90 South 7th Street, Suite 3500
12 Minneapolis, Minnesota 55402
13 612.259.9700
14 gilfordb@gtlaw.com
15
16 GREENBERG TRAURIG, LLP
17 ELANA B. ARAJ, ESQ. (REMOTELY)
18 One Vanderbilt Avenue
19 New York, New York 10017
20 212.801.9200
21 elana.araj@gtaw.com
22 ALSO PRESENT: David Woodford, Zoom Technician

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1 C O N T E N T S

2 EXAMINATION OF GREGORY T. MARTIN, PH.D. PAGE
3 Mr. Gilford 313
4 Mr. Nemtzow 443
5 Mr. Gilford 446
6
7 E X H I B I T S
8 (Attached to transcript.)
9 MARTIN DEPOSITION EXHIBITS PAGE
10 Exhibit 5 Declaration of Dr. Gregory T. 314
11 Martin Regarding Claims 1, 4,
12 8-10 of U.S. Patent No.
13 11,241,271
14 Exhibit 6 Handwritten drawing 336
15 Exhibit 7 Handwritten drawing 344
16 Exhibit 8 Handwritten drawing 430
17
18 Premarked Exhibits:
19 Neurent Exhibit 1001 318
20 Neurent Exhibit 1003 379
21 Neurent Exhibit 1006 390
22

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1 September 25, 2024 9:05 a.m.
2 P R O C E E D I N G S
3 GREGORY THOMAS MARTIN,
4 being previously duly sworn or affirmed to testify to
5 the truth, the whole truth, and nothing but the truth,
6 was examined and testified as follows:
7 CONTINUED EXAMINATION
8 BY MR. GILFORD:
9 Q. Welcome back, Dr. Martin. I hope you had a
10 great break.
11 Between the close of yesterday's
12 deposition and the start of today, have you spoken
13 with anybody about yesterday's deposition?
14 A. No.
15 Q. And between the close of yesterday's
16 deposition and the start of today's deposition, did
17 you talk to anybody about today's portion of the
18 deposition?
19 A. No.
20 Q. Did you speak with anybody about your
21 anticipated testimony today?
22 A. No.

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1 MR. GILFORD: So before we really get
2 started with questions, let's go ahead and mark the
3 '271 patent declaration as Martin Exhibit 5.
4 (Exhibit 5 marked for identification.)
5 Q. And Dr. Martin, would you mind pulling up for
6 me the '271 patent, which should be somewhere in that
7 pile that you've got. And you've seen this document
8 before; correct?
9 A. Correct.
10 Q. This is the '271 patent; right?
11 A. Yes.
12 Q. And you've provided opinions on this patent;
13 is that right?
14 A. Yes.
15 Q. And have you reviewed the '271 patent before?
16 A. I have.
17 Q. Have you read claim 1 of the '271 patent
18 before?
19 A. Yes, I have.
20 Q. Would you mind flipping to claim 1 of the
21 '271 patent.
22 A. Sure.

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1 Q. Claim 1 of the '271 patent is a method claim;
2 correct?
3 A. Yes.
4 Q. And the method of claim 1 recites three
5 method steps; is that right?
6 MR. NEMTZOW: Objection, form.
7 A. Correct, yes.
8 Q. So let's run through those steps really
9 quick.
10 The first step in this method is
11 contacting a treatment element of a nasal airway
12 treatment device directly with nasal mucosa of the
13 nasal airway, wherein the treatment element comprises
14 two rows of bipolar electrode pairs. Is that right?
15 A. That's what it says, yes.
16 Q. And the second step is applying
17 radiofrequency energy with the bipolar electrode pairs
18 through the nasal mucosa to a target tissue underlying
19 the nasal mucosa for an amount of time to heat the
20 target tissue; is that right?
21 MR. NEMTZOW: Objection, form.
22 A. Yes.

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1 Q. And the third step is removing the treatment
2 element from the nasal airway; is that right?
3 MR. NEMTZOW: Objection, form.
4 A. Yes.
5 Q. Is it your understanding that the three
6 steps, the three method steps from claim 1 of the '271
7 patent, are to be performed in order?
8 MR. NEMTZOW: Objection, form, relevance.
9 A. Let me just review my declaration here.
10 I would say in general yes. To apply RF
11 energy, you have to contact the tissue first, and
12 obviously removing it --
13 Well, I suppose --
14 No, I think the order makes sense, yeah.
15 Q. At the very least, it makes logical sense to
16 perform these three steps in order; right?
17 A. Yes.
18 MR. NEMTZOW: Objection, form, relevance.
19 Q. Switching gears a little bit: Claim 1 of the
20 '318 patent and claim 1 of the '286 patent both recite
21 the term "multiple radiofrequency output channels."
22 Right?

1 A. I don't have it right now in front of me, but
2 I'll take your word for it.
3 Q. What do you understand the term
4 "radiofrequency output channel" to mean in the context
5 of the '318 and '286 patents?
6 MR. NEMTZOW: Objection, form, relevance,
7 foundation.
8 A. So you said this was claim 1 in '318?
9 Q. It's also recited in claim 1 of the '286.
10 A. I'm sorry, can you repeat the question?
11 Q. What do you understand the term
12 "radiofrequency output channel" to mean in the context
13 of the '318 and '286 patents?
14 MR. NEMTZOW: Same objection.
15 A. Is that terminology in the claims?
16 Q. The claim says "radiofrequency output
17 channels," plural.
18 A. The claim for which patent?
19 Q. The '318 claim 1 and '286 claim 1 both recite
20 "radiofrequency output channels."
21 MR. NEMTZOW: The same objection.
22 A. I'm sorry, do you have the '318 patent?

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1 Q. Yes. Here you go.
2 A. Thank you.
3 Q. So I'm handing you what was previously marked
4 Neurent's Exhibit 1001 in the '318 patent IPR. This
5 is the '318 patent; correct?
6 A. Yes, correct.
7 Yeah, so if you -- so if you look at my
8 declaration, Paragraph 124, it discusses that.
9 So the '318 patent I think doesn't fully
10 teach what the output channel is. But if you look at
11 Stern, Stern figure 15 has a number of output channels
12 from their device. That's how I interpret "output
13 channel" to mean: output from a radiofrequency
14 generator.
15 Q. Okay. So you understand a radiofrequency
16 output channel to be an output from a radiofrequency
17 generator; is that correct?
18 MR. NEMTZOW: Objection, form, relevance.
19 A. Yes. Similar to what Stern has in figure 15.
20 Q. Okay. So I guess the term "output" in the
21 larger phrase "radiofrequency output channel" is
22 referring to the output from the radiofrequency

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1 generator. Is that --
2 A. Correct.
3 MR. NEMTZOW: Objection, form, relevance.
4 A. Yes.
5 Q. And I guess when you were analyzing the '318
6 and '286 patents, did you apply that understanding to
7 your analysis?
8 MR. NEMTZOW: Objection, form, relevance.
9 A. Certainly yes to the '318. And I can recheck
10 my declaration for -- is it '271, did you say?
11 Q. Sorry, '286.
12 A. '286.
13 So yes, so on my '286 declaration, if you
14 look at Paragraph 135, it discusses that, and it
15 associates Stern's -- again, Stern's figure 15 with
16 multiple radiofrequency output channels.
17 Q. So I guess in analyzing the '286 patent, in
18 your analysis of the term "radiofrequency output
19 channel," is it fair to say that the meaning you apply
20 to that term is an output from a radiofrequency
21 generator?
22 MR. NEMTZOW: Objection, form, foundation,

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1 relevance.
2 A. Yes, similar to what is depicted in Stern
3 figure 15.
4 Q. Would you mind picking back up the '318
5 declaration and going to Page 65. I'm looking at the
6 annotated figures near the top.
7 A. Yes.
8 Q. So I think you answered this already, but is
9 it your opinion that Stern's figure 15 teaches
10 multiple radiofrequency output channels?
11 MR. NEMTZOW: Objection, form.
12 A. Yes.
13 Q. So in these annotated figures you have at the
14 top of Page 65 of your '318 declaration, are you using
15 the orange lines to, I guess, denote what you're
16 calling the radiofrequency output channel?
17 MR. NEMTZOW: Objection, form.
18 A. So yes and other channels as well. Other
19 lines also represent radiofrequency output channels.
20 Q. Okay. I think I understand what you're
21 saying. So I guess on the figure on the left are you
22 using the orange line to denote one output channel?

1 A. Well, the orange line -- there are two orange
2 lines in figure 15 on the left. One denotes one
3 output channel; the other one denotes another output
4 channel. Right? So you have two bipolar electrodes.
5 You need four output channels to run them
6 independently.
7 Q. I'm not sure I'm following you. So in your
8 annotation on the left, if you look up at the text
9 above it, you say "one pair of bipolar RF electrodes
10 connected with a respective RF output channel." Do
11 you see that?
12 A. Yes.
13 Q. So at least from that text, it sounds like
14 you're calling everything you've demarcated in orange
15 on that left-hand figure a single output channel?
16 MR. NEMTZOW: Objection.
17 Q. Is that right?
18 MR. NEMTZOW: Objection, form, foundation.
19 A. I think you could think of it in multiple
20 ways; right? So if I have -- in the train station,
21 North Station, there are multiple tracks; right? Even
22 though those tracks connect somewhere down the line,

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1 you still call those multiple tracks. In the same
2 way, you could consider these multiple channels.
3 Q. I get what you're saying, but I just want to
4 focus on what you highlighted in orange, not the other
5 stuff.
6 A. Okay.
7 Q. So is the stuff highlighted in orange on the
8 left-hand side of Page 65, is that one channel?
9 MR. NEMTZOW: Objection, form.
10 A. So there are two orange lines on the left
11 side of figure 15; correct?
12 Q. Yes.
13 A. So each orange line in my estimation would
14 represent a separate channel.
15 Q. Why do you say that?
16 A. Well, I think, again, "channel" is one of
17 those words that is -- I'm describing it, I'm not
18 defining it.
19 Q. I guess let's turn to Page 66, and I'm
20 looking at Footnote 4. Do you see where you wrote,
21 "Edwards '535 and Stern close output channels within
22 the device itself but also teach RF generators that a

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1 person of ordinary skill would understand to have two
2 ports or connection points for connecting an energy
3 delivery device and providing the device with active
4 and return signals." Do you see that?
5 A. Yes.
6 Q. And it goes on. So if you kind of go -- I
7 guess just looking at that Footnote 4 that you wrote,
8 what do you mean by "providing the device with active
9 and return signals"?
10 A. Well, I think you can imagine that as --
11 that's a positive and negative; right? So active and
12 return signals, imagine that as being active would be
13 the positive and return would be the negative.
14 Q. And I think we talked about this a while ago
15 yesterday, about kind of how the current flows when
16 you have a generator and bipolar RF electrodes. And I
17 recall you saying something like the current goes from
18 the generator to the active electrode, through the
19 tissue to the return electrode, and then flows back to
20 the generator. Do you recall testifying along those
21 lines?
22 MR. NEMTZOW: Objection, form, foundation.

1 A. Yes.
2 Q. So in that case, kind of explain, you know,
3 what's the active signal and what's the return signal
4 in that kind of loop?
5 MR. NEMTZOW: Objection, form, foundation,
6 relevance.
7 A. So there are a couple of ways to configure
8 this. So the return would be, you can imagine that
9 being a steady voltage at zero potential; right? The
10 active, if it's carrying radiofrequency energy --
11 right? -- its voltage is varying, actually positive
12 and minus, at a frequency that's equal to the
13 frequency of the RF generator.
14 Q. I guess going back to Page 65: So just, for
15 example, on the annotated figure on the left, where is
16 the active signal coming from?
17 A. Figure 5 is not clear.
18 Q. Did I say figure 5?
19 A. I'm sorry, figure 15 on the left. It's not
20 clear.
21 Q. Okay. Is it coming from one of the two wires
22 leading from voltage source 228?

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1 A. Yes, it would have to be.
2 Q. And then where is the return signal going to?
3 MR. NEMTZOW: Objection, form, relevance.
4 A. Well, whichever -- so if you look at the
5 voltage source '228, either one of those could be the
6 active and the other one could be the return
7 electrode. So whichever one you choose to be the
8 active, in order for this to work the other would have
9 to be the return.
10 Q. Okay, so whichever one's the active, is that
11 essentially the output of the single?
12 MR. NEMTZOW: Objection, form, relevance.
13 A. Well, I think you can think of them as both
14 outputs; right?
15 Q. Okay.
16 A. If you're thinking about current flow --
17 right? -- because it's alternating current. So the
18 current is going back and forth.
19 Q. So I guess -- just bear with me while I'm
20 trying to figure this out. So, again, looking at the
21 left-hand-side figure of Page 65, let's assume for a
22 second that the active signal is coming from the wire

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1 coming from the top of 228.
2 A. Okay.
3 Q. So I guess the way you've drawn this, the
4 active signal goes to electrode 220; right?
5 MR. NEMTZOW: Objection, form, foundation,
6 relevance.
7 A. So 228 is the voltage source. You're saying
8 the top you're calling the active. So that goes
9 through switch 248; right?
10 Q. So electrode 220; right?
11 A. 220, yes.
12 Q. And then it flows to electrode 222; right?
13 A. For the return, yes.
14 Q. And then the return flows back to voltage
15 source 228; right?
16 A. Correct, yeah.
17 Q. So isn't that just one channel of
18 radiofrequency energy?
19 MR. NEMTZOW: Objection, form, foundation,
20 relevance.
21 A. Well, "channel" is a concept. I mean, you
22 can reconfigure it; right? You can configure it one

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1 way or the other.
2 But yeah. Is it one channel?
3 So "channel" is defined relative to the RF
4 generator.
5 Q. Okay.
6 A. Not relative to the device, typically.
7 Q. Either way, the current is flowing through
8 only one channel in this scenario; right?
9 MR. NEMTZOW: Objection, form.
10 A. At this point in time, for this example.
11 Q. But even if you switch the way the active
12 was -- the active signal was coming out of the
13 generator, it's still flowing through only one
14 channel; right, just the opposite direction?
15 MR. NEMTZOW: Objection, form.
16 A. Well, if you threw two more switches, you
17 would get it to flow through the other two.
18 Q. I totally understand. We're just talking
19 about the way you annotated on the left.
20 A. Yep.
21 Q. So I want to just talk about this
22 left-hand-side figure, and then we can go from there.

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1 So again, the way you drew the
2 left-hand-side figure presumably is with switch 248
3 closed and switch 238 closed?
4 A. Correct.
5 Q. So just taking that example.
6 A. Yeah.
7 Q. Regardless of which way the active signal is
8 coming from the voltage source '228, there's only one
9 radiofrequency output channel in this annotation;
10 correct?
11 MR. NEMTZOW: Objection, form, foundation,
12 relevance.
13 A. I would rather characterize it by saying
14 there's only one -- there's multiple channels; right?
15 There's only one channel active.
16 Q. I think I understand what you mean. So
17 let's -- I understand you think there could be other
18 channels, for example, what you depict on the right.
19 Is that fair to say?
20 A. So if I built 15, if I built that, what we
21 would see here is a device, let's say, with multiple
22 switches -- right? -- and multiple outputs.

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1 And so if I plugged this bipolar -- these
2 two bipolar electrode pairs, you would see them
3 plugged into the generator on two separate channels.
4 One channel might be inactive while the other
5 channel's active.
6 Q. I think I know what you mean, but I just --
7 I'm struggling with, you know -- I get that you're
8 saying there's multiple channels; right? But I'm
9 trying to just narrow in on what's shown in orange.
10 A. Yeah.
11 Q. If you follow this line shown in orange --
12 A. Uh-huh.
13 Q. -- that line shown in orange --
14 I get that it comes out of two sides of
15 the voltage source. But if you follow the line shown
16 in orange, that shows one radiofrequency output
17 channel; right?
18 MR. NEMTZOW: Objection, form, foundation,
19 relevance.
20 A. I think you're confusing the concept of a
21 channel with a connection. I interpret "channel" to
22 be associated with the generator. So it doesn't

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1 matter what it's connected to or what it's not
2 connected to. That generator still has however many
3 channels it has.
4 Q. Are you defining this entire figure 15 as the
5 generator?
6 A. Well, the part that's not in the dotted
7 line -- do you see on the left-hand side the dotted
8 square?
9 Q. Uh-huh.
10 A. Okay. I interpret that to be what's in the
11 dotted square encompasses the electrodes that contact
12 the tissue, which is in the nose; right? The rest of
13 the electronics are not in the nose. The voltage
14 source is not in the nose; right? Those switches are
15 not in the nose. Those are all external to the
16 patient.
17 Q. Are you saying everything else is the
18 generator?
19 A. Well, if we want to look at one -- was it
20 230, the oval shape -- right? -- Stern describes that
21 as being possibly like a grounding pad, a return. So
22 that would not be in the nose.

1 Q. Right. So my question was: Are you
2 saying -- is your testimony today that everything
3 outside of the dotted rectangle in figure 15 is the
4 generator?
5 MR. NEMTZOW: Objection, form, relevance.
6 A. That, excepting the oval, that's my
7 interpretation of Stern, that you build that device
8 putting the switches and the voltage source in the
9 generator.
10 Now, you could in theory build it with
11 switches in the disposable; right? In the device that
12 goes to the nose. You probably wouldn't do it that
13 way, but it's theoretically possible to put the
14 switches in the device.
15 Q. Can you point me to where in your declaration
16 you say that everything outside of the dotted
17 rectangle in figure 15 except for the grounding pad
18 230 is in the generator?
19 MR. NEMTZOW: Objection, form, relevance.
20 A. Well, I don't know if I explicitly state that
21 in my declaration, and I could look for it. But I
22 think a person skilled in the art would understand

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1 that straight away reading Stern.
2 Q. So first of all, I would like you to point me
3 to where in your declaration you said that everything
4 outside of the dotted rectangle in figure 15 except
5 for the grounding pad 230 is part of the generator.
6 MR. NEMTZOW: Objection, form, foundation,
7 relevance.
8 A. Again, I don't think I explicitly state that
9 in my declaration. But again, a person skilled in the
10 art in this field would recognize those elements to be
11 in the RF generator.
12 Q. And other than saying that you just
13 understand that to be the understanding of a person of
14 ordinary skill in the art, what is your basis for
15 saying that everything outside of the dotted rectangle
16 except for the grounding pad 238 is part of the
17 generator?
18 MR. NEMTZOW: Objection, form, foundation,
19 relevance.
20 A. Let me just consult Stern directly.
21 Again, Stern does not explicitly state
22 that, but again, someone skilled in the art would

1 interpret the dotted line to refer to the part that
2 goes in the nose and the rest of the elements in
3 figure 15 would be in the RF generator.
4 Q. I guess let me ask you this: If you were to
5 assume in figure 15 that the RF generator is what's
6 labeled '228, like the circle that's labeled '228 --
7 A. Okay.
8 Q. So assume that the circle that's labeled '228
9 is the RF generator and everything else outside of it
10 is not the RF generator. Are you with me so far?
11 A. Yes.
12 MR. NEMTZOW: Objection, form, foundation,
13 relevance.
14 Q. In that case there would only be one
15 radiofrequency output channel; right?
16 MR. NEMTZOW: Objection, form, foundation,
17 relevance.
18 A. I don't see -- I'm having a hard time seeing
19 how you then actuate the switches of Stern. Right?
20 So I don't see how you implement Stern and achieve
21 that.
22 Q. That wasn't exactly my question. So my

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1 question was: If you assume that the circle labeled
2 '228 in the left-hand-side annotated figure on Page 65
3 of your declaration is the RF generator, with that
4 assumption there's only one radiofrequency output
5 channel; right?
6 MR. NEMTZOW: Objection, form, foundation,
7 relevance.
8 A. Well, I'm not quite clear. Are you
9 redefining -- so where do the switches go in that
10 instance?
11 Q. Outside of the generator.
12 A. Okay. Are they inside the patient?
13 Q. No.
14 A. So then you've just redefined the generator.
15 You've just taken the part that generates the sine
16 wave, you've separated it from the part that had the
17 switches. Effectively, those two things, though they
18 may be in different boxes, are acting as a generator.
19 I mean, so then the box with the switches, now that
20 you've separated, is giving the output.
21 Q. You're still not answering my question. My
22 question was: Assume that '228, the circle labeled

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1 '228 is the RF generator and everything else outside
2 of it is not. In that case there's only one
3 radiofrequency output channel in that instance; right?
4 MR. NEMTZOW: Same objection.
5 A. But you're not implementing Stern; right?
6 I'm talking about Stern. There's no switches, you're
7 saying?
8 Q. I'm not saying that.
9 A. Okay.
10 Q. Let's do a hypothetical and then we'll try
11 and work backwards.
12 Grab that, please. Assume the circle is
13 the generator and the things labeled 1 and 2 are
14 electrodes. How many radiofrequency output channels
15 are in that figure?
16 MR. NEMTZOW: Objection, form, foundation,
17 relevance.
18 A. Well, I mean, this is not what I base my
19 declaration on. I base my declaration on Stern.
20 Q. I understand. We're speaking hypothetically
21 about the circuit I've drawn. So the question was:
22 Assume the circle is the radiofrequency generator and

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1 the things I labeled 1 and 2 are electrodes. In this
2 diagram I drew, how many radiofrequency output
3 channels are in there?
4 MR. NEMTZOW: Same objection.
5 A. And so this is the part that's in the patient
6 here, the bipolar electrodes?
7 Q. Yeah. They're not always going to be in the
8 patient, but --
9 A. That's what you insert into the patient.
10 Q. Yes.
11 A. And this is outside the patient.
12 Q. Yes.
13 A. In this case, yes, I would say that's one
14 output channel.
15 MR. GILFORD: Could we mark that as Martin
16 Exhibit 6.
17 (Exhibit 6 marked for identification.)
18 A. Again, that drawing is not what I based my
19 declaration on. I based my declaration on Stern.
20 Q. I understand. We're speaking hypothetically.
21 A. You're speaking hypothetically?
22 Q. Yes. So let's draw something else here.

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1 So again assume that the circle is the
2 radiofrequency generator and the things I labeled 1,
3 2, 3, and 4 are electrodes. Now, in this diagram that
4 I drew, which we'll mark as Martin Exhibit 6, how many
5 radiofrequency output channels are in that diagram?
6 MR. NEMTZOW: Objection, form, foundation,
7 relevance.
8 A. So, again, this is the part that's intended
9 to be inserted into the patient; the circle is
10 effectively the RF generator?
11 Q. Yes.
12 A. You might say that there are two channels.
13 Q. Why do you say that?
14 MR. NEMTZOW: Objection, form, relevance.
15 A. So in this instance, electrodes 1 and 2 have
16 the same polarity; right? Electrodes 3 and 4 have the
17 same polarity. Current's going to flow from 1 to not
18 just 3 but will also flow from 1 to 4, and current's
19 going to flow from not -- it's not going to flow from
20 2 to 4. If they're all contacting tissue, it will
21 also flow from 2 to 3.
22 Q. Okay. I guess if you go ahead and look at --

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1 I guess in the diagram I drew that you have in front
2 of you, how many -- are there any bipolar electrode
3 pairs in that diagram?
4 MR. NEMTZOW: Objection, form, foundation,
5 relevance.
6 A. Possibly, yes.
7 Q. Why do you say possibly?
8 A. Well, it's how you want to consider it;
9 right? So you could pair 1 and 3. You could pair 1
10 and 4. You could pair -- even without switching;
11 right? -- 2 and 4 and 2 and 3.
12 Q. Why do you say "could" pair?
13 MR. NEMTZOW: Objection, relevance.
14 A. It depends how you use it. If you insert it
15 partway into the nose; right? So these wouldn't make
16 contact but these would. Then only electricity would
17 flow between 2 and 4.
18 Q. And if all four electrodes were inserted into
19 the nose?
20 MR. NEMTZOW: Objection, relevance.
21 A. Then current would flow amongst them all.
22 Q. Okay. And in that case how many pairs would

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1 there be?
2 MR. NEMTZOW: Objection, form, foundation,
3 relevance.
4 A. You could define 1, 2, 3, 4.
5 Q. Okay. If you wouldn't mind flipping to Page
6 64 of your '318 declaration.
7 A. Yes.
8 Q. And I'm looking at the claim language you
9 reproduce kind of midway through the page.
10 A. Yes.
11 Q. And you see there's like a "wherein" clause
12 there. It says "wherein each pair of the multiple
13 pairs of bipolar radiofrequency electrodes is
14 connected with a respective one of the multiple
15 radiofrequency output channels." Do you see that?
16 A. Yes.
17 Q. Turning back to the diagram I'd drawn for you
18 that we were talking about: Does that diagram show
19 wherein each pair of the multiple pairs of bipolar
20 radiofrequency electrodes is connected with a
21 respective one of the multiple radiofrequency output
22 channels?

1 MR. NEMTZOW: Objection, form.
2 A. Well, my opinion in the declaration regarding
3 element [f] -- I used Stern. I used this diagram.
4 Q. Right. I want to talk about my hypothetical
5 circuit, though, and see if that reads on the claim
6 language. Do you understand what I'm asking you to
7 testify about?
8 MR. NEMTZOW: Objection, form, foundation,
9 relevance.
10 A. Not exactly. I thought I was testifying
11 about my declaration, not yours.
12 Q. It's not my declaration. We're talking about
13 your opinions on claim terms. So we're talking about
14 a hypothetical to understand how you interpreted
15 different things.
16 MR. NEMTZOW: Objection, form, foundation,
17 relevance.
18 A. My declaration is not about hypotheticals.
19 Q. I understand. But I'm asking you a
20 hypothetical to get to the meaning you apply to
21 different claim terms.
22 MR. NEMTZOW: Objection, form, foundation,

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1 relevance.
2 A. In that case I refer you to the declaration.
3 Q. I want to talk about my diagram. If your
4 answer is that you can't give an opinion on whether
5 that diagram teaches wherein each pair of the multiple
6 pairs of bipolar radiofrequency electrodes is
7 connected with a respective one of the multiple
8 radiofrequency output channels -- if you're saying
9 today you can't give an opinion on that, so be it.
10 But you're supposed to be the expert here. Do you
11 want me to reask the question?
12 A. My opinion is contained in the declaration.
13 It does not deal with hypotheticals. It deals with
14 Stern.
15 Q. I'm going to ask you one more time about my
16 drawing. Just so the record's clear, you can let me
17 know if you're going to answer the question or not.
18 But the question was: In my drawing that
19 I gave you that we're going to mark as, I believe,
20 Martin Exhibit 6, does that diagram show wherein each
21 pair of the multiple pairs of bipolar radiofrequency
22 electrodes is connected with a respective one of the

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1 multiple radiofrequency output channels?
2 MR. NEMTZOW: Objection, form, foundation,
3 relevance.
4 A. Again, my opinion deals with Stern. It
5 doesn't deal with your circuit.
6 Q. So you're not going to answer my question?
7 MR. NEMTZOW: Objection, form.
8 A. Your hypothetical question, no. But I'll
9 answer any question about the declaration.
10 Q. So you're not going to answer my question.
11 Understood.
12 Now, let's go back to my hypothetical
13 again. And you had mentioned earlier, I believe, that
14 a radiofrequency output channel is an output from the
15 radiofrequency generator; right?
16 MR. NEMTZOW: Objection, form, foundation,
17 relevance.
18 A. Yes.
19 Q. And in the drawing I gave you, there's one
20 output from the radiofrequency generator; right?
21 MR. NEMTZOW: Objection, form, foundation,
22 relevance.

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1 A. You tell me. It's your drawing. You tell
2 me.
3 Q. Well, we said the circle is the
4 radiofrequency generator and the electrodes are what's
5 going in the nose. Right? That was the assumption I
6 gave you. Correct?
7 MR. NEMTZOW: Objection, form, foundation,
8 relevance.
9 A. Okay.
10 Q. So assuming that the circle in the drawing I
11 gave you is the radiofrequency generator and the
12 things libeled 1 through 4 are electrodes, in this
13 drawing there's only one output from the
14 radiofrequency generator; right?
15 MR. NEMTZOW: Same objection.
16 A. Could you draw a dotted line on what you're
17 calling the radiofrequency generator?
18 Q. Uh-huh.
19 So I drew a dotted -- a poorly drawn
20 dotted rectangle around what I'm calling the
21 radiofrequency generator.
22 So the question was: Assuming that the

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1 circle in the drawing I gave you with the dotted
2 rectangle around it is the radiofrequency generator,
3 there's only one output from the radiofrequency
4 generator; right?
5 MR. NEMTZOW: Objection, form, foundation,
6 relevance.
7 A. In your hypothetical, which I didn't use as
8 prior art in my declaration, yes.
9 Q. So it's fair to say that in the hypothetical
10 circuit I gave you, which I believe we're going to
11 mark as Martin Exhibit 6 or 7 --
12 MR. GILFORD: What are we on?
13 THE REPORTER: 7.
14 Q. Let me reask the question. So it's fair to
15 say that in the hypothetical circuit I gave you, which
16 we're going to mark as Martin Exhibit 7, that in this
17 hypothetical circuit there is one radiofrequency
18 output channel; correct?
19 MR. NEMTZOW: Objection, form, foundation,
20 relevance.
21 A. Correct.
22 (Exhibit 7 marked for identification.)

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1 Q. Do you have Stern in front of you?
2 A. Yes, somewhere.
3 Q. I was hoping you could help me with
4 something. So if you look at column 10 of Stern, and
5 I'm looking at about line 44. Let me know when you're
6 there.
7 A. I'm there.
8 Q. Do you see that there's a reference to RF
9 generator 158?
10 A. Yes.
11 Q. And can you go to figure 5 of Stern.
12 A. Yes.
13 Q. Can you let me know if in figure 5 of Stern,
14 do you see a referenced numeral 158?
15 A. I don't. Is it missing?
16 Q. It appears to be. But in either case, you do
17 not see a referenced numeral 158 in --
18 A. Yes, so Stern is calling 158 -- "RF generator
19 158 serves as the RF input power for the controller
20 156."
21 Q. Just so we're on the same page: I couldn't
22 remember if there was a question pending or are you

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1 trying to look something up or are you waiting for a
2 question.
3 A. I'm waiting for a question.
4 Q. Sorry. I thought you were looking for
5 something.
6 Let's go back to figure 5. Sorry for
7 that. I thought you were looking for something.
8 Do you see at the top of figure 5 it says
9 "isolation barrier"?
10 A. Yes.
11 Q. And then there's like a dotted line kind of
12 that goes through this drawing. Do you see that?
13 A. Yes.
14 Q. Do you have an understanding of what
15 "isolation barrier" is referring to?
16 A. Yes.
17 MR. NEMTZOW: Objection, form, relevance.
18 Q. What is your understanding?
19 A. In this context "isolation barrier" refers to
20 a safety barrier that's designed into circuitry that's
21 used for medical devices.
22 Q. And when you say "safety barrier," what do

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1 you mean by that?
2 MR. NEMTZOW: Objection, relevance.
3 A. Electrical safety in medical devices is
4 assured by two primary means: one, by making sure
5 that current doesn't leak into the patient and
6 electrocute them potentially; and the other is to make
7 the patient somewhat what's called defibrillator-
8 proof. If the patient had to be defibrillated during
9 the procedure with the device in place, that the
10 device would not provide a short circuit that could
11 electrocute the patient through the defibrillator.
12 Q. So is the isolation barrier something you
13 place inside the patient?
14 A. No. The isolation barrier is something that
15 goes in the radiofrequency generator.
16 Q. Okay. And is there something in Stern that
17 expressly says that?
18 MR. NEMTZOW: Objection, form, relevance.
19 A. A person skilled in the art would recognize
20 this immediately for a number of reasons. One, you
21 notice the isolation barrier passes through on the top
22 left what's called an isolation transformer. The

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1 isolation transformer ensures that direct current does
2 not pass from outside the isolation barrier to inside
3 the isolation barrier to the patient.
4 The other key is, if you look at the
5 bottom, you see the dotted line passes through two
6 boxes that are called opto-isolators. Opto-isolators
7 are a way of isolating typically digital signals that
8 are used to pass digital information from outside the
9 isolation barrier in the RF generator to inside the
10 isolation barrier.
11 Q. If you could turn to figure 15 really quick.
12 Figure 15 doesn't have any mention of an isolation
13 barrier; correct?
14 A. Correct.
15 Q. Let's go back to your '318 patent
16 declaration, and I'm looking at Page 89. And you have
17 some claim language reproduced here towards the
18 bottom. Do you see that?
19 A. Yes.
20 Q. And this is referring to claim 5 of the '318
21 patent; right?
22 A. Yes.

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1 Q. And it says "the device of claim 4, wherein
2 at least one pair of the multiple pairs of bipolar
3 radiofrequency electrodes is coupled with each of the
4 multiple segments." Do you see that?
5 A. Yes.
6 Q. So if I understand this claim correctly, you
7 have multiple segments and there are multiple pairs of
8 bipolar radiofrequency electrodes coupled with each of
9 the segments; is that right?
10 MR. NEMTZOW: Objection, form, relevance.
11 A. Yes, that's what it says.
12 Q. And, I mean, according to this claim, the
13 segments are different than the electrodes; right?
14 MR. NEMTZOW: Objection, form, relevance.
15 A. Different meaning?
16 Q. Well, the electrodes are coupled to the
17 segments; right?
18 A. Yes, yes.
19 Q. Okay. So the segments can't be the same
20 thing as the electrodes; right?
21 MR. NEMTZOW: Objection, form, relevance.
22 A. I think that's how you define it. But okay.

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1 Q. So the answer is yes, in claim 5 of the '318
2 patent the electrodes are different than the segments;
3 is that right?
4 MR. NEMTZOW: Objection, form, relevance.
5 A. I'm not sure I'd necessarily say that --
6 right? -- because --
7 Q. Can an electrode be coupled to itself?
8 MR. NEMTZOW: Objection, form, relevance.
9 A. Well, I would say a segment could include the
10 electrode, and it could include some other things as
11 well; right?
12 Q. Well, certainly according to this claim the
13 electrodes are coupled to the segments; right?
14 A. I mean, there's probably a case where an
15 electrode could be a segment.
16 Q. If an electrode could be a segment, how can
17 you couple the electrode to itself?
18 MR. NEMTZOW: Objection, form, relevance.
19 A. Well, in the case of Stern -- right? -- I
20 mean, Stern talks about segments that are electrode
21 area segments, so in Paragraph 169.
22 Q. Just let me ask you this: In analyzing the

1 '318 patent, did you assume that an electrode could be
2 a segment?
3 MR. NEMTZOW: Objection, form, relevance.
4 A. With the teaching from Stern -- right? -- in
5 Paragraph 169, I mean, you could have an electrode
6 area segment. So yes.
7 Q. Isn't an electrode area segment just a
8 segment that an electrode is then attached to?
9 MR. NEMTZOW: Objection, form, relevance.
10 A. Maybe, or the electrode is the segment.
11 Q. Let's focus on what the claim says. So,
12 again, the claim says "the multiple pairs of bipolar
13 radiofrequency electrodes is coupled with each of the
14 multiple segments." So according to the claim, the
15 segments and the electrodes are different things;
16 right?
17 MR. NEMTZOW: Objection, form, relevance.
18 A. So that's the '318 patent. Let's see. So
19 the problem -- I don't think the '318 patent
20 specifically defines the use of the word "segment."
21 So I don't know. I can't answer your question.
22 Q. Okay. Could you go to Page 107 of your '318

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1 declaration. And again, you have some claim language
2 reproduced here from claim 13 of the '318 patent;
3 right?
4 A. Yes.
5 Q. So there's a term in here, "organized into
6 multiple subsystems." Do you see that?
7 A. Yes.
8 Q. And there's a similar limitation in claim 9
9 of the '286 patent; right?
10 MR. NEMTZOW: Objection, foundation.
11 A. Without looking back to it, I'll take your
12 word for it.
13 Q. So the term "subsystem," what do you
14 understand that term to mean in the context of the
15 '318 and '286 patents?
16 MR. NEMTZOW: Objection, form, foundation,
17 relevance.
18 A. Well, a subsystem is somewhat of a -- I mean,
19 it kind of can be anything that you define it to be in
20 some ways. If you look at, so, for instance,
21 Paragraph 207 in my '318 declaration, it talks about
22 how Stern disclose multiple subsystems in figure 5 and

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1 15. So I think as an example, figure 5 on Page 110 of
2 my declaration, that's a good example of a number of
3 subsystems. So, for instance, the bottom left-hand
4 corner, the computer -- right? -- that would be a
5 subsystem. You could define potentially any one of
6 those boxes as a subsystem.
7 Q. So I guess what do you understand the phrase
8 "organized into multiple subsystems" to mean in the
9 context of the '318 and '286 patents?
10 MR. NEMTZOW: Objection, form, foundation,
11 relevance.
12 A. I think figure 5 is a good example of that --
13 right? -- where you have essentially multiple systems
14 and together they're organized and they're
15 interconnected in some fashion.
16 Q. When you say "together they're organized,"
17 what do you mean by that?
18 MR. NEMTZOW: Objection, relevance.
19 A. I mean in this case, like looking at figure
20 5 -- right? -- they all have some input/output that
21 will typically be from one to the next in this
22 instance. That's not the only definition of

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1 "subsystem." There are other definitions that you
2 could apply.
3 Q. So the term "organized" in the larger phrase
4 "organized into multiple subsystems," what does that
5 mean?
6 MR. NEMTZOW: Objection, form, relevance.
7 A. Again I bring you back to figure 5; right?
8 That's a good example that answers your question.
9 Q. Could you have multiple subsystems that are
10 not organized?
11 MR. NEMTZOW: Objection, relevance.
12 A. I suppose you could, but I'm not quite sure
13 how useful it would be.
14 Q. How could you have multiple subsystems that
15 are not organized?
16 MR. NEMTZOW: Objection, form, relevance.
17 A. Well, I guess the question is are they
18 organized individually or are they organized as a
19 group in that instance?
20 Q. I guess what do you think claim 13 of the
21 '318 patent requires?
22 MR. NEMTZOW: Objection, form, relevance.

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1 A. Again, I think Stern is a good example of
2 that, figure 5. I think that shows multiple
3 subsystems.
4 Q. Are the multiple subsystems organized
5 individually or organized as a group?
6 MR. NEMTZOW: Objection, form, relevance.
7 A. I would say both in this case.
8 Q. So when you say -- I guess what does
9 "multiple subsystems organized as a group" mean?
10 MR. NEMTZOW: Objection, form, foundation,
11 relevance.
12 A. Well, I mean, in this sentence, I think it's
13 just vague language. Someone designed this; right?
14 Someone organized all of these components together to
15 work together.
16 Q. Okay. So I guess is it fair to say that
17 "organized into multiple subsystems" essentially means
18 that the subsystems are organized so that all the
19 components together work together?
20 MR. NEMTZOW: Objection, form, foundation,
21 relevance.
22 A. I mean, I would say, yes, that's true, but in

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1 addition to that, there are other ways of thinking
2 about it as well. Like when you say "work together,"
3 they don't necessarily have to, I would say, be
4 directly interconnected to be able to work together.
5 Q. I think I see what you're saying.
6 A. So, for instance, like, in this case the
7 computer -- right? -- may not talk directly to, you
8 know, the overvoltage suppression. The computer's on
9 the digital side, the overvoltage suppression is on
10 the analog side. There's no direct connection. But
11 in a sense, they work together.
12 Q. If you'd go to Page 118 of your '318 patent
13 declaration.
14 MR. NEMTZOW: I don't want to interrupt
15 the questioning, but we've been going for about an
16 hour and ten minutes.
17 MR. GILFORD: This is a perfect time for a
18 break.
19 (Recess taken.)
20 Q. Dr. Martin, would you mind picking up the
21 '318 patent declaration again and going to Page 118.
22 A. 118, yes.

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1 Q. And looking at Paragraph 227.
2 A. Yes.
3 Q. Do you see at the beginning of this paragraph
4 you wrote, "The '318 patent describes a 'multiplexed
5 configuration,'" and it goes on?
6 A. Yes.
7 Q. What do you understand the term "multiplexed
8 configuration" to mean in the context of the '318
9 patent?
10 MR. NEMTZOW: Objection, form, foundation,
11 relevance.
12 A. I look at figure 15 from Stern on the
13 previous page. So that's an example of a multiplexed
14 configuration.
15 Q. Can you provide a little more detail on what
16 you mean by "multiplexed configuration"?
17 MR. NEMTZOW: Objection, form, relevance.
18 A. Well, there are a number of ways to implement
19 a multiplexed configuration. Stern suggests one here,
20 in figure 15.
21 Q. So when you say the '318 patent describes a
22 multiplexed configuration, what do you mean by it

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1 describes a multiplexed configuration?
2 MR. NEMTZOW: Objection, form, relevance.
3 A. Again, figure 15 is a good example of a
4 multiplexed configuration. We have multiple switches.
5 We have inputs and outputs.
6 Q. Does a multiplexed configuration require
7 multiple outputs?
8 MR. NEMTZOW: Objection, form, relevance.
9 A. I would say usually. I can't think of any
10 that doesn't have multiple outputs.
11 Q. Does a multiplexed configuration require
12 multiple inputs?
13 MR. NEMTZOW: Objection, form, relevance.
14 A. I think you would need at least multiple
15 inputs or at least multiple outputs to have a
16 multiplexed configuration.
17 Q. So I guess if I understand you correctly, to
18 have a multiplexed configuration -- sorry, go ahead.
19 A. Let me amend that. A multiplexed
20 configuration, you have to have at least, either/or,
21 multiple inputs or multiple outputs, and they should
22 be switchable, like figure 15.

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1 Q. So having a multiplexed configuration with
2 multiple outputs, do you need to have multiple inputs?
3 MR. NEMTZOW: Objection, form, relevance.
4 A. No.
5 Q. Can you have a multiplexed configuration with
6 a single output?
7 MR. NEMTZOW: Objection, form, relevance.
8 A. I would say if you have multiple inputs, then
9 yes -- that are switchable.
10 Q. So other than pointing me to Stern figure 15,
11 can you explain to me what the term "multiplexed
12 configuration" means in the context of the '318
13 patent?
14 MR. NEMTZOW: Objection, form, relevance.
15 A. As a person skilled in the art, the term
16 "multiplexed" in general means that you have
17 switching, that you can switch things in, switch
18 things out.
19 Q. Does a multiplexed configuration require
20 anything other than switching?
21 MR. NEMTZOW: Objection, form, relevance.
22 A. Like I said, you would need either multiple

1 inputs or multiple outputs or both, and those multiple
2 inputs and/or multiple outputs can be switchable in
3 some fashion.
4 Q. Does multiplexed configuration require
5 anything more than that?
6 MR. NEMTZOW: Objection, form, relevance.
7 A. I think at its base, that's it.
8 Q. Can you go to Page 159.
9 A. I'm there, yes.
10 Q. And I'm looking at Paragraph 319. And at the
11 end of this paragraph do you see where you wrote "the
12 strut members 214 deflect when expanded"? Do you see
13 that? Paragraph 319.
14 A. Yes.
15 Q. You're referring to Makower's strut members
16 214 here; is that right?
17 A. Correct, yes.
18 Q. When you say it deflects, what do you mean by
19 that?
20 MR. NEMTZOW: Objection, form, relevance.
21 A. I think we discussed this a little bit
22 before. But if you look at Makower's figure 5H, the

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1 214 elements, it's implied that when that's inserted
2 into the tissue, into the cavity, that it's in one
3 configuration and it expands to another configuration.
4 That expansion to the second configuration requires
5 the strut members to deflect in some fashion.
6 Q. Right. So when you use the term "deflect,"
7 what do you mean by that?
8 MR. NEMTZOW: Objection, form, relevance.
9 A. It's not such a specific term. It's simply
10 signifying some form of movement.
11 Q. So when you say "deflect," you're using it to
12 mean some form of movement?
13 MR. NEMTZOW: Objection, form, relevance.
14 A. Of the strut members, yes.
15 Q. Any type of movement in particular?
16 MR. NEMTZOW: Objection, form, relevance.
17 A. Well, I would say, you know, if those strut
18 members -- this is not the case, but if they were on
19 hinges, they moved by a hinge action, you might not
20 call that a deflection.
21 Q. Doesn't "deflection" mean going from straight
22 to bent?

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1 MR. NEMTZOW: Objection, form, foundation,
2 relevance.
3 A. No, "deflect" means going from one shape to
4 another shape.
5 Q. Okay. Or at least that's the meaning that
6 you applied in your analysis. Is that right?
7 MR. NEMTZOW: Objection, form, relevance.
8 A. It's -- yes.
9 Q. And I guess when you wrote the phrase
10 "deflect when expanded," what do you mean by that?
11 MR. NEMTZOW: Objection, form, relevance.
12 A. So again, looking back at figure 5H in
13 Makower, that device in the description says it's
14 inserted into the nasal cavity and it expands from one
15 configuration to a second configuration. And so in
16 doing so it deflects the struts to achieve that
17 configuration change.
18 Q. And again, when you say "deflect when
19 expanded," you're basically saying that the struts 214
20 move in some way when expanded. Is that what you're
21 saying?
22 A. Correct, yes.

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1 Q. Going back to Paragraph 319 of your
2 declaration. You didn't cite any record evidence in
3 this paragraph; correct?
4 MR. NEMTZOW: Objection, form, relevance.
5 A. Well, I refer to Makower.
6 Q. Right, but you didn't cite to it, did you?
7 MR. NEMTZOW: Objection, form.
8 A. I believe there's only one Makower reference
9 that I refer to in this declaration.
10 Q. You didn't cite to any particular portion of
11 Makower, did you, in Paragraph 319?
12 MR. NEMTZOW: Objection, form.
13 A. Well, I mentioned strut member 214, which was
14 previously mentioned in figure 5H.
15 Q. The question was: In Paragraph 319 of your
16 '318 patent declaration, it's fair to say that you did
17 not include any particular citation to the record;
18 correct?
19 MR. NEMTZOW: Objection, form.
20 A. I think it's obvious as to what I was
21 referring to.
22 Q. No, I don't think it is, because --

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1 When I say "citation to the record," do
2 you understand what I mean?
3 A. Please define it for me.
4 MR. NEMTZOW: Objection, form.
5 Q. So if you look at Paragraph '318, for
6 example, in the first sentence, do you see where you
7 have a mention of Exhibit 1021-Makower, Paragraph
8 0187?
9 A. Yes.
10 Q. I would consider that a citation to the
11 record.
12 MR. NEMTZOW: Objection, form,
13 argumentative.
14 Q. Do you see what I mean?
15 A. Yes.
16 Q. There's no such citation to the record in
17 Paragraph 319 of your '318 patent declaration;
18 correct?
19 MR. NEMTZOW: Objection, form.
20 A. Is there something you don't understand about
21 319?
22 Q. No. Was my question unclear? I can reask it

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1 if you like.
2 MR. NEMTZOW: Objection, form.
3 A. Please.
4 Q. The question was: There's no citation to the
5 record in Paragraph 319 of your '318 patent
6 declaration; correct?
7 MR. NEMTZOW: Again, objection, form.
8 A. There's no specific citation as you've
9 defined it.
10 Q. So what is your support for your opinion that
11 Makower's strut members 214 deflect when expanded?
12 MR. NEMTZOW: Objection, form.
13 A. Again, it goes back to the reading of figure
14 5H.
15 Q. Okay. Well, figure 5H shows the device of
16 Makower in only one configuration; correct?
17 A. That is correct.
18 Q. So other than Makower figure 5H, what is your
19 support for your opinion that the strut members 214
20 deflect when expanded?
21 MR. NEMTZOW: Objection, form.
22 A. As a person skilled in the art who has used

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1 and designed devices with nitinol, and reading Makower
2 and seeing this figure, that's what's allowed me to
3 come to that conclusion, that this is an
4 expanded-state device.
5 Q. Other than your say-so and seeing figure 5H,
6 did you have any other support for your opinion that
7 strut members 214 deflect when expanded?
8 MR. NEMTZOW: Objection, form, relevance.
9 A. I would say it's part of my opinion.
10 Q. What else are you relying on?
11 A. My experience as a person skilled in the art.
12 Q. Anything else?
13 A. 30 years' experience designing medical
14 devices.
15 Q. Anything else from Makower?
16 A. Ah.
17 MR. NEMTZOW: Objection, relevance.
18 A. Well, there were a couple of other figures,
19 just how he described them, how he described them
20 having -- going from one state to a second state after
21 being inserted into the body cavity.
22 Q. Did you cite any of those figures in

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1 Paragraph 319 of your declaration?
2 MR. NEMTZOW: Objection, form.
3 A. Not specifically in 319, but they are in the
4 overall opinion.
5 Q. Where are they cited in the overall opinion?
6 A. I'm sorry, they're in Makower's patent
7 specifications.
8 Q. Okay. You didn't cite them in your
9 declaration?
10 MR. NEMTZOW: Objection, form.
11 A. I don't think so.
12 Q. Would you mind picking up the '077 patent
13 declaration.
14 A. Okay.
15 Q. And let's go to Page 63. Let me know when
16 you're there.
17 A. I'm there.
18 Q. So you signed your declaration on January
19 15th, 2024; is that right?
20 A. Correct.
21 Q. Are you aware that this declaration was
22 originally submitted in IPR2024-00281?

1 A. Yes.
2 Q. And are you aware that IPR2024-00281 was
3 terminated?
4 A. No.
5 Q. I will represent to you that IPR2024-00281
6 was terminated. With that representation, do you have
7 any understanding of why IPR2024-00281 was terminated?
8 MR. NEMTZOW: Objection, form, relevance.
9 A. No.
10 Q. Are you aware that this declaration was
11 resubmitted in IPR2024-00669?
12 A. I -- no.
13 Q. Are you aware that the petition in
14 IPR2024-00669 was filed on April 3rd, 2024?
15 A. No, I don't think so.
16 Q. Have any of your opinions changed between
17 January 15th, 2024, and April 3rd, 2024?
18 A. No.
19 Q. Are you familiar with an individual named
20 Nicolas Bu-Saba? Bu-Saba is spelled B-u-S-a-b-a.
21 A. Yes.
22 Q. Did you know Dr. Bu-Saba before these IPRs?

1 A. No.
2 Q. And you've previously spoken with Dr.
3 Bu-Saba; right?
4 A. Yes.
5 Q. How many times have you spoken with him?
6 A. Once.
7 Q. Do you recall when you spoke with him?
8 A. No, not exactly.
9 Q. Do you recall whether it was before January
10 15th, 2024?
11 A. It was around that time. I don't recall
12 exactly.
13 Q. I guess let me phrase it this way: So the
14 declaration that we've been talking about you agreed
15 was signed January 15th, 2024; right?
16 A. Correct.
17 Q. Do you recall whether you spoke to Dr.
18 Bu-Saba before you signed your declaration?
19 A. I don't.
20 Q. Do you recall whether you spoke with him in
21 person?
22 A. I spoke with him via Zoom.

1 Q. Did anybody else participate in that
2 conversation?
3 A. I don't think so.
4 Q. So just the two of you were on the Zoom call;
5 is that correct?
6 A. I think that's correct.
7 Q. Do you recall how long you spoke with Dr.
8 Bu-Saba?
9 A. It would have been maybe 30 minutes.
10 Q. Do you recall why you spoke with Dr. Bu-Saba?
11 A. It was to give him the opportunity to ask me
12 any questions.
13 Q. Were there any other reasons why you spoke
14 with Dr. Bu-Saba?
15 A. No.
16 Q. Did Dr. Bu-Saba ask you any questions?
17 A. I don't remember.
18 Q. In general, what did you talk about for the
19 approximately 30 minutes that you spoke?
20 A. I really don't remember specifics.
21 Q. Did you rely on your conversation with Dr.
22 Bu-Saba in formulating any of your opinions in this

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1 '077 patent declaration?
2 A. No.
3 Q. Do you know whether Dr. Bu-Saba submitted a
4 declaration in IPR2024-00281?
5 A. I think he did.
6 Q. Do you know whether Dr. Bu-Saba relied on
7 your conversation with him in formulating any of his
8 opinions in his declaration?
9 A. I don't know the answer to that.
10 Q. Did you take any notes during your
11 conversation with Dr. Bu-Saba?
12 A. No.
13 Q. Let's go to Page 9 of your declaration, and
14 I'm looking at Paragraph 23, the last steps. Do you
15 see where you wrote, "I have also relied on a
16 conversation with Dr. Nicolas Bu-Saba and have
17 reviewed his declaration"? Do you see that?
18 A. Yes.
19 Q. When you say you reviewed his declaration,
20 which declaration are you referring to?
21 A. I don't know. I don't remember.
22 Q. Do you recall ever seeing a declaration

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1 written by Dr. Bu-Saba?
2 A. I don't remember.
3 Q. So if I understand you correctly, you have no
4 recollection as we sit here today of reviewing a
5 declaration authored by Dr. Bu-Saba; is that correct?
6 MR. NEMTZOW: Objection, form.
7 A. That is correct.
8 Q. Do you recall ever receiving a declaration
9 from Dr. Bu-Saba?
10 A. I don't remember.
11 Q. Do you recall ever receiving a declaration
12 authored by Dr. Bu-Saba?
13 A. I don't remember.
14 Q. In formulating your opinions in this
15 declaration, did you rely on -- did you rely on any
16 opinions from Dr. Bu-Saba?
17 A. I don't think so.
18 Q. In formulating your opinions in this
19 declaration, did you rely on a declaration from Dr.
20 Bu-Saba?
21 A. I don't think so.
22 Q. Do you know whether Dr. Bu-Saba submitted a

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1 declaration in IPR2024-00669?
2 A. I don't know.
3 Q. Let's go to Page 21 of your declaration, and
4 I'm looking at Paragraph 47.
5 A. Yes.
6 Q. So in Paragraph 47 do you see where you
7 wrote, "I have been asked to offer opinions regarding
8 claim 4 as it relates to Ground III (Saadat and Stern)
9 and Ground VI (Makower, Fang, Edwards-535 and Stern)"?
10 Do you see that?
11 A. Yes.
12 Q. So for the '077 patent IPR, you're providing
13 opinions regarding claim 4 only; is that correct?
14 MR. NEMTZOW: Objection, form.
15 A. I think that's correct.
16 Q. And your opinions relate only to Grounds III
17 and VI; is that correct?
18 A. I believe that's correct.
19 Q. Is it your opinion that claim 4 of the '077
20 patent is invalid as obvious?
21 MR. NEMTZOW: Objection, form, relevance.
22 A. Well, if you look at Paragraph 76 and 77,

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1 that contains a summary of my opinion.
2 Q. So the question was: Are you opining in this
3 declaration that claim 4 of the '077 patent is invalid
4 as obvious?
5 MR. NEMTZOW: Objection, form, relevance.
6 A. That's not what Paragraph 76 and 77 say.
7 Q. I agree that it does not say that there.
8 Just so the record is clear: Are you opining in your
9 '077 patent declaration that claim 4 of the '077
10 patent is invalid as obvious?
11 MR. NEMTZOW: Objection, form, relevance.
12 A. Well, Paragraph 76 says it's my opinion that
13 a person skilled in the art would have had a
14 reasonable expectation of success in implementing
15 Stern's multiple pairs of bipolar electrodes into
16 Saadat's RF ablation device. It is my opinion that
17 this implementation was well within the skills that a
18 person skilled in the art would see to be a
19 predictable result of using one known feature with
20 another to reach predictable results.
21 Q. So are you opining in your '077 patent
22 declaration that claim 4 of the '077 patent is invalid

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1 as obvious?
2 MR. NEMTZOW: Objection, form, relevance.
3 A. The opinion simply states that a person
4 skilled in the art would have been motivated to
5 combine the teachings of Saadat and Stern with a
6 reasonable expectation of success.
7 Q. So the answer is no, you're not opining that
8 claim 4 of the '077 patent is invalid as obvious;
9 correct?
10 MR. NEMTZOW: Objection, form, relevance.
11 A. Correct. My opinion does not contain
12 anything regarding validity.
13 Q. Okay. Are you aware that claim 4 of the '077
14 patent depends from claims 1 and 2 of the '077 patent?
15 A. Yes.
16 Q. Did you analyze claim 1 of the '077 patent as
17 part of your analysis?
18 A. I looked at it.
19 Q. In your declaration for the '077 patent did
20 you analyze claim 1 of the '077 patent?
21 A. No.
22 MR. NEMTZOW: Objection, form, relevance.

1 A. No.
2 Q. And in your '077 patent declaration did you
3 analyze claim 2 of the '077 patent?
4 MR. NEMTZOW: Objection, form, relevance.
5 A. No.
6 Q. Were you asked to provide opinions regarding
7 claim 1 of the '077 patent?
8 MR. NEMTZOW: Objection, privilege. I
9 just caution the witness not to share any
10 conversations he had with attorneys.
11 A. No.
12 Q. Were you asked to provide opinions regarding
13 claim 2 of the '077 patent?
14 MR. NEMTZOW: Same objection, same
15 instruction.
16 A. No.
17 Q. Let's go to Page 10 of your declaration. And
18 I'm looking at the -- I guess it's the end of
19 Paragraph 25, the second-to-last sentence. Do you
20 see, the last two -- I'm going to read the last two
21 sentences for you. Do you see where you wrote, "For
22 purposes of my analysis, I have considered the level

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1 of ordinary skill in the art as of July 2005 and as of
2 October 2019. In my opinion, that level was the same
3 for all relevant times between 2005 and 2019"? Do you
4 see that?
5 A. Yes.
6 Q. Is it your position that nothing changed in
7 14 years regarding the level of ordinary skill in the
8 art?
9 MR. NEMTZOW: Objection, form, relevance.
10 A. I think it remains the same; right? A person
11 skilled in the art would need to have a doctor of
12 medicine or a master's degree in engineering or
13 related discipline and at least three years'
14 experience.
15 Q. What's your basis for saying that the level
16 of ordinary skill in the art did not change in the
17 14-year time period between July 2005 and October
18 2019?
19 MR. NEMTZOW: Objection, form.
20 A. Well, for what concerns the devices here,
21 during that time period there was not any scientific
22 breakthroughs in the use of radiofrequency technology.

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1 Q. Any other reason for your opinion that the
2 level of ordinary skill in the art did not change
3 between July 2005 and October 2019?
4 A. I think that pretty much covers it.
5 Q. In your '077 patent declaration, in your
6 analysis of the combination of Saadat and Stern, what
7 date did you apply for your analysis?
8 A. I primarily applied the earlier date, 2005.
9 Q. What do you mean, you primarily applied the
10 earlier date?
11 A. That's the date I applied.
12 Q. Okay. At any point in your analysis did you
13 apply a later date than 2005?
14 A. No.
15 Q. In analyzing the combination of Makower,
16 Fang, Edwards '535, and Stern, what date did you apply
17 for that analysis?
18 A. 2005.
19 Q. Did you ever apply a date later than 2005 in
20 your analysis?
21 A. No.
22 Q. Out of curiosity -- well, let me go ahead and

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1 give you --
2 So I'm giving you what was previously
3 marked as Neurent Exhibit 1003, and this is from the
4 '077 patent IPR. You've seen this before; right?
5 A. Yes.
6 Q. And this is the Saadat patent?
7 A. Yes.
8 Q. Do you see there's a filing date listed on
9 the left-hand side of the first page?
10 A. Yes.
11 Q. And that filing date is May 17th, 2018;
12 right?
13 A. Yes.
14 Q. And if you flip to the next page, do you see
15 that towards the top left there's actually two
16 provisional applications listed here? Do you see
17 that?
18 A. Yes.
19 Q. Do you see one was filed on June 22nd, 2014?
20 Do you see that?
21 A. Yes.
22 Q. And another one was filed on September 30th,

1 2013. Correct?
2 A. Yes.
3 MR. NEMTZOW: Objection, form.
4 Q. So it's fair to say that this -- just to be
5 clear, the Saadat patent was issued on June 4th, 2019.
6 Do you see that, on the first page?
7 A. Yes.
8 Q. So it's fair to say that the Saadat patent
9 was issued much later than 2005; correct?
10 MR. NEMTZOW: Objection, relevance.
11 A. Correct.
12 Q. And it's fair to say that the application
13 that led to this Saadat patent was filed years after
14 2005; correct?
15 MR. NEMTZOW: Objection, form.
16 A. Correct.
17 Q. And it's fair to say that the earliest date
18 the Saadat patent could claim priority to is September
19 30th, 2013; correct?
20 MR. NEMTZOW: Objection, form, foundation,
21 relevance.
22 A. Correct.

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1 Q. And September 30th, 2013, is years after
2 2005; correct?
3 A. Correct.
4 MR. NEMTZOW: Objection, form.
5 Q. So in analyzing the Saadat and Stern
6 combination in your '077 patent declaration, how could
7 you use 2005 as the point -- as the date of your
8 analysis, when this Saadat patent didn't exist at that
9 point?
10 MR. NEMTZOW: Objection, form, relevance.
11 A. The 2005 refers to a person skilled in the
12 art. They only need to have background in ablation in
13 this area, of 2005. That's different than the prior
14 art that's applied.
15 Q. Well, do you understand that the -- in
16 assessing obviousness, that the claims must be
17 analyzed from the perspective of one of skill in the
18 art at the time of the alleged invention?
19 A. Or before.
20 Q. Sure. Now, if you're assuming that the time
21 of the alleged invention is July of 2005, a person of
22 ordinary skill in the art couldn't have looked at

1 Saadat at that point; correct?
2 MR. NEMTZOW: Objection, form, relevance.
3 A. Well, again, don't confuse the level of skill
4 that can be acquired up until 2005 with the date of
5 the prior art.
6 Q. I understand. But a person of ordinary skill
7 in the art in 2005 could not have considered Saadat;
8 correct?
9 MR. NEMTZOW: Objection, form, relevance.
10 A. A person with skill up to 2005 could have
11 evaluated the prior art and its relevance to the '077
12 patent. It's about skill; it's not about prior art.
13 Q. My question was: A person of ordinary skill
14 in the art in 2005 could not have considered Saadat.
15 Isn't that true?
16 A. No.
17 MR. NEMTZOW: Objection, form, relevance.
18 A. If you take a person in 2005 and you put them
19 in a time machine and you brought them to this date
20 and you handed them this and you said, "Do this
21 analysis," they could do this analysis.
22 Q. I agree with you that a person existing today

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1 could consider Saadat, because it exists today. My
2 question was: If you go back to 2005, a person in
3 2005 could not have considered Saadat. Isn't that
4 true?
5 MR. NEMTZOW: Objection, form, relevance.
6 A. A person with the skills only acquired to
7 2005, and if they joined the Peace Corps and didn't
8 think about ablation, didn't know anything about the
9 field and then came back, they could have done this
10 analysis.
11 Q. You're still not answering my question. My
12 question was: If you go back to 2005, a person in
13 2005 could not have considered Saadat; correct?
14 MR. NEMTZOW: Same objection.
15 A. I guess -- so I can't quite understand how
16 this relates to the declaration.
17 Q. Well, whether -- I mean, do you not
18 understand my question?
19 A. Is it about the level of ordinary skill in
20 the art of art?
21 Q. I'll reask the question and then you can tell
22 me what you don't understand about it. The question

1 was: If you go back to 2005, a person of ordinary
2 skill in the art in 2005 could not have considered
3 Saadat at that time; correct?
4 MR. NEMTZOW: Objection, form, relevance.
5 A. In 2005?
6 Q. Yes.
7 A. But we're not in 2005.
8 Q. But I'm asking -- I understand that. Do you
9 not understand my question?
10 A. There's nothing in Saadat that someone from
11 2005 could not understand.
12 Q. You're still not answering my question,
13 because my question is about going back to 2005. So
14 again, the question was: If you go back to 2005,
15 isn't it fair to say that a person of ordinary skill
16 in the art at that time could not have considered
17 Saadat?
18 MR. NEMTZOW: Objection, form, relevance.
19 A. Are you talking about in 2005 or a person
20 who's only developed skills until 2005?
21 Q. I'm talking about in 2005.
22 MR. NEMTZOW: Same objection.

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1 Q. So I'll reask the question. If you go back
2 to 2005, isn't it fair to say that a person of
3 ordinary skill in the art at that time could not have
4 considered Saadat?
5 MR. NEMTZOW: Same objection.
6 A. Barring the existence of a time machine, then
7 yes.
8 Q. Yes, they could not have considered it in
9 2005; right?
10 A. Yes.
11 MR. NEMTZOW: Same objection.
12 Q. Let's jump ahead to Page 44 of your
13 declaration. I'm looking at Paragraph 81, near the
14 bottom. Do you see where you wrote, "Makower also
15 teaches that the electrosurgical device is 'inserted
16 into the nasal cavity' or 'nasopharynx... to perform
17 diagnostic or therapeutic procedures'"? Do you see
18 that?
19 A. Yes.
20 Q. What is the nasal cavity?
21 MR. NEMTZOW: Objection, form, relevance.
22 A. I think that's more a clinical question than

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1 an anatomy question. I did not offer an opinion on
2 what is called the nasal cavity.
3 Q. Understood. As we sit here today, do you
4 have an understanding of what the nasal cavity is?
5 MR. NEMTZOW: Objection, form, relevance.
6 A. I have a general understanding.
7 Q. Can you give me that general understanding.
8 MR. NEMTZOW: Same objection.
9 A. That the nasal cavity starts at the nostril
10 and moves back to the -- to the pharynx.
11 Q. And do you have an understanding of what the
12 nasopharynx is?
13 MR. NEMTZOW: Objection, form, relevance.
14 A. Not exactly, no.
15 Q. Do you have an understanding of what the
16 difference between the nasal cavity and the
17 nasopharynx is?
18 MR. NEMTZOW: Same objection.
19 A. I believe the nasopharynx cavity --
20 Well, no. I'll just stop there. No.
21 Q. So that the record's clear, you do not have
22 an understanding of what the difference between the

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1 nasal cavity and the nasopharynx is; correct?
2 MR. NEMTZOW: Same objection.
3 A. I do not know exactly -- correct. I do not
4 know exactly what the clinical definitions are.
5 Q. Is it your opinion that the Makower -- excuse
6 me. Is it your opinion that Makower discloses that
7 the device of figure 5H can be inserted into both the
8 nasal cavity and the nasopharynx?
9 MR. NEMTZOW: Objection, form, relevance.
10 A. I mean, that's how Makower describes it. So
11 yes.
12 Q. And are you basing that off of Makower
13 Paragraph 0161?
14 A. Well, it's quoted in Paragraph 81; right?
15 "Makower 1005" --
16 Yeah, I'm sorry. Yes, 0161, yes.
17 Q. Are you basing your opinion that Makower's
18 device of figure 5H can be inserted into both the
19 nasal cavity and the nasopharynx off of anything other
20 than Makower, Paragraph 0161?
21 MR. NEMTZOW: Objection, form, relevance.
22 A. I didn't -- there may be other support in

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1 Makower as well. I didn't look for that -- but
2 except -- it's been reproduced here, what I found.
3 Q. When you say --
4 A. There may be other places in Makower that
5 support that statement. Without going through the
6 patent again right here now, I can't say.
7 Q. So other than Makower Paragraph 0161, as we
8 sit here today, you do not have any further support
9 for your opinion that Makower discloses that the
10 device of figure 5H can be inserted into both the
11 nasal cavity and the nasopharynx; correct?
12 MR. NEMTZOW: Objection, form, relevance.
13 A. Yes.
14 Q. Let's go to Page 45, and I'm looking at
15 Paragraph 83. The second sentence, do you see where
16 you wrote, "In particular, Fang teaches using 'the
17 SHP-1 five-organ radiofrequency therapy instrument,'"
18 and it goes on? Do you see that?
19 A. Yes.
20 Q. Are you familiar with the SHP1 instrument?
21 A. My familiarity with it has only been derived
22 through this reference.

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1 Q. When you say "this reference," are you
2 referring to Fang?
3 A. Fang, correct, yes.
4 Q. Have you ever had the SHP-1 instrument?
5 MR. NEMTZOW: Objection, relevance.
6 A. No.
7 Q. Have you ever used the SHP-1 instrument?
8 MR. NEMTZOW: Objection, relevance.
9 A. No.
10 Q. Do you know what the SHP-1 instrument looks
11 like?
12 MR. NEMTZOW: Objection, relevance.
13 A. No.
14 Q. Do you know whether the SHP-1 instrument has
15 electrodes?
16 MR. NEMTZOW: Objection, relevance.
17 A. Yes.
18 Q. Do you know whether the SHP-1 instrument has
19 bipolar electrodes?
20 MR. NEMTZOW: Objection, relevance.
21 A. I'm not sure.
22 Q. Do you know how the electrodes are arranged

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1 on the SHP-1 instrument?
2 MR. NEMTZOW: Objection, relevance.
3 A. No, not exactly.
4 Q. What do you mean, "not exactly"?
5 A. Well, I'd have to go back to the reference to
6 look and see.
7 Q. Do you want a copy?
8 A. Do you have a copy? Yes.
9 Q. So I'm handing you what was prefiled marked
10 as Neurent Exhibit 1006 in the '077 patent proceeding.
11 And that's the Fang reference; correct? What I just
12 handed you?
13 A. I believe so.
14 Q. Sorry, take your time.
15 So the question I had asked earlier was:
16 Do you know how the electrodes are arranged on the
17 SHP-1 instrument?
18 MR. NEMTZOW: Same objection.
19 A. No, not exactly.
20 Q. Again, what do you mean by "not exactly"?
21 A. Well, there is some description in Fang about
22 the electrode configuration, but it's somewhat

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1 imprecise.
2 Q. Sure. Can you point me to that?
3 A. So under Section 1.2, under Treatment
4 Methods.
5 Q. Give me one second to get there. You said
6 under Treatment Methods?
7 A. Yes, 1.2.
8 Q. I'm with you.
9 A. So Fang states radiofrequency at the interior
10 upper part of the nasal septum on both sides, the
11 radiofrequency points on both sides were staggered by
12 5 millimeters. So that's some sense of their location
13 relative to each other.
14 Down below it says the interior part of
15 the inferior turbinate could undergo radiofrequency at
16 three to five points.
17 So, I mean, it's some indication, but not
18 a complete description of the location of the
19 electrodes.
20 Q. I guess when it's saying -- when this
21 document's referring to "points," are you interpreting
22 that to mean different locations in the nose, or are

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1 you interpreting that to mean the number of
2 electrodes?
3 A. So "undergo radiofrequency at three to five
4 points": It may not be the number of electrodes. It
5 may be the number of treatment sites.
6 Q. Okay. I guess either way it's unclear from
7 this document?
8 A. Unclear, yes.
9 Q. So going back to Paragraph 83 of the '077
10 declaration, and I'm looking about midway through the
11 paragraph, starting on the right-hand side. There's a
12 mention of something called "the sphenopalatine
13 foramen." Do you see that?
14 A. Yes.
15 Q. The sphenopalatine foramen is in the
16 nasopharynx?
17 MR. NEMTZOW: Objection, form, foundation,
18 relevance.
19 A. Not being a clinician, I don't know exactly
20 where that is.
21 Q. Do you know what the sphenopalatine foramen
22 is?

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1 MR. NEMTZOW: Same objection.
2 A. No.
3 MR. GILFORD: I think we've been going
4 about for an hour again. I'd prefer to take a break
5 now. Does that sound good?
6 MR. NEMTZOW: That works.
7 THE WITNESS: That's good.
8 MR. GILFORD: Let's go off the record.
9 (Recess taken.)
10 Q. So when we had a break, we were discussing
11 your '077 patent declaration. Would you mind turning
12 to Page 50.
13 A. Okay.
14 Q. And I'm looking at Paragraph 92. Do you see
15 where you wrote, "Makower discloses delivering RF
16 energy to tissue using bipolar RF electrodes, but does
17 not provide details regarding how to configure its
18 bipolar electrodes"? Do you see that?
19 A. Yes.
20 Q. So is it fair to say that Makower does not
21 provide details regarding how to configure
22 radiofrequency electrodes?

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1 MR. NEMTZOW: Objection, form.
2 A. Yes. I mean, as it says, does not provide
3 details regarding how to configure its bipolar
4 electrodes.
5 Q. And then you see where you wrote, "Similarly,
6 Fang and Edwards each teach applying RF energy to
7 tissue and Edwards-535 teaches an RF generator for
8 supplying RF energy to multiple electrodes, but each
9 reference also does not provide details regarding how
10 to configure RF electrodes"? Do you see that?
11 MR. NEMTZOW: Objection, form.
12 A. Yes.
13 Q. So you agree that neither Fang nor Edwards
14 '535 provides details regarding how to configure
15 radiofrequency electrodes; correct?
16 MR. NEMTZOW: Objection, form.
17 A. Correct.
18 Q. So the next sentence there, do you see where
19 you wrote, "A person of ordinary skill in the art
20 would have been motivated to incorporate the teachings
21 from Stern when implementing the device taught by the
22 combination of Makower, Fang, and Edwards-535," and

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1 then it goes on? Do you see that?
2 A. Correct.
3 Q. What is the device taught by the combination
4 of Makower, Fang, and Edwards '535?
5 MR. NEMTZOW: Objection, form.
6 A. Well, in my opinion I don't design a
7 completely new device.
8 Q. Well, you mention here a "device taught by
9 the combination of Makower, Fang, and Edwards-535";
10 correct?
11 A. Yes.
12 Q. So when you say "the device taught by the
13 combination of Makower, Fang, and Edwards-535," what
14 are you referring to?
15 A. It's not just one device; right? There are
16 multiple configurations depending on how you combine
17 them.
18 So if you look to Stern, our Stern figure
19 15, for instance, provides one example. Stern figure
20 5 provides also a more detailed example.
21 Q. So my question was a little bit different.
22 My question was: What is the device taught by the

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1 combination of Makower, Fang, and Edwards '535?
2 MR. NEMTZOW: Same objection.
3 A. There is not one device.
4 Q. Okay. So how many devices are there?
5 A. It could be an infinite.
6 Q. Give me one example of what the device taught
7 by the combination of Makower, Fang, and Edwards '535
8 is.
9 MR. NEMTZOW: Objection, form, foundation,
10 relevance.
11 A. Well, each of those devices -- right? --
12 requires some sort of way to generate RF energy.
13 Stern teaches how to do that in a couple of different
14 ways.
15 Q. I think you're still not understanding my
16 question. Here you're proposing to incorporate the
17 teachings from Stern into the device taught by the
18 combination of Makower, Fang, and Edwards '535;
19 correct?
20 A. Correct.
21 Q. So I'm talking about, before you're
22 incorporating Stern, what is the device taught by the

1 combination of Makower, Fang, and Edwards '535?
2 A. I understand. But the same answer applies;
3 right? You could have an infinite number of devices
4 and combine them in an infinite number of ways.
5 Q. Okay. I understand what you're saying. Give
6 me one example of what you're saying the device taught
7 by the combination of Makower, Fang, and Edwards '535
8 is.
9 MR. NEMTZOW: Objection, form, foundation,
10 relevance.
11 A. There is not one device.
12 Q. Can you give me one example?
13 MR. NEMTZOW: Same objection.
14 A. Well, I think that -- are you asking me to
15 design a new device?
16 Q. I want to know what you meant when you wrote
17 "the device taught by the combination of Makower,
18 Fang, and Edwards-535."
19 MR. NEMTZOW: Same objection.
20 A. So you're basically asking me to design a
21 device here as we sit?
22 Q. I'm asking you, what did you mean when you

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1 wrote that? Those are your words; right?
2 A. Yes, yes. So I'm sorry, I lost my place
3 here. This is Paragraph what?
4 Q. 92.
5 A. 92. Well, there are a couple of instances;
6 right? But you could take the Makower figure 5H, for
7 instance, would be one example, combining some
8 elements of Edwards, and using it like Fang. I mean,
9 I think that's about as clear as I could be.
10 Q. What Edwards -- what elements from Edwards
11 are you combining with Makower?
12 MR. NEMTZOW: Objection, form, foundation,
13 relevance.
14 A. Okay, part of that question is answered in
15 Paragraph 93. So "Makower specifically teaches 'an
16 electrosurgical device' with multiple 'bipolar' RF
17 electrodes on struts that apply current to tissue to
18 'cause the tissue adjacent to the struts to be
19 cauterized or heated.' Fang and Edwards similarly
20 exemplify that applying RF energy to tissue was well-
21 known, as each references using RF energy to treat
22 tissue."

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1 Q. So how are you combining Makower with Edwards
2 '535?
3 MR. NEMTZOW: Objection, form, foundation,
4 relevance.
5 A. I mean, there's a couple of different ways.
6 Again, I can't say exactly how.
7 Q. When you say there's a couple of different
8 ways that you're proposing to combine Edwards with
9 Makower, what do you mean by that?
10 MR. NEMTZOW: Same objection.
11 A. There's an infinite number of ways you could
12 combine these elements of prior art.
13 Q. In your '077 patent declaration, do you ever
14 explain how you're combining Makower with Edwards
15 '535?
16 MR. NEMTZOW: Objection, form, foundation,
17 relevance.
18 A. The opinion states that they could be
19 combined. It doesn't state how they could be
20 combined.
21 Q. Does it say that they would be combined,
22 either?

1 MR. NEMTZOW: Same objection.
2 A. "Would" and "could," yes, I would agree with
3 that. But it doesn't state the how.
4 Q. So it's fair to say in your '077 patent
5 declaration you don't state how Makower and Edwards
6 '535 would be combined; correct?
7 MR. NEMTZOW: Objection, form, foundation,
8 and relevance.
9 A. How exactly from a device design standpoint.
10 Q. It's fair to say in your '077 patent
11 declaration you don't state how Makower and Edwards
12 '535 would be combined; correct?
13 MR. NEMTZOW: Objection, form, foundation,
14 relevance.
15 A. It states that they could be combined, they
16 could be combined.
17 Q. Other than stating in your declaration that
18 Edwards '535 and Makower could be combined -- strike
19 that.
20 Do you ever opine in your '077 patent
21 declaration that Edwards '535 and Makower would be
22 combined?

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1 MR. NEMTZOW: Objection, form, foundation,
2 relevance.
3 A. Yes, in Paragraph 92.
4 Q. Are you talking about the sentence we were
5 talking about earlier?
6 A. Yes.
7 Q. So it says, "A person of ordinary skill in
8 the art would have been motivated to incorporate the
9 teachings from Stern when implementing the device
10 taught by the combination of Makower, Fang, and
11 Edwards-535"; correct?
12 A. Well, I'd even start at the beginning of
13 Paragraph 92, where it says, "Makower discloses
14 delivering RF energy to tissue using bipolar RF
15 electrodes, but does not provide details regarding how
16 to configure its bipolar electrodes. Similarly, Fang
17 and Edwards- 535 each teach applying RF energy to
18 tissue, and Edwards-535 teaches an RF generator for
19 supplying RF energy to multiple electrodes. But each
20 reference also does not provide details regarding how
21 to configure RF electrodes."
22 Q. So in your '077 patent declaration, how are

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1 you proposing to combine Makower and Edwards '535?
2 MR. NEMTZOW: Objection, form, foundation,
3 relevance.
4 A. The opinion does not contain a specific
5 implementation.
6 Q. Does it contain a general implementation?
7 MR. NEMTZOW: Same objection.
8 A. It does, as described in Paragraph 92.
9 Q. Where in 92?
10 A. As I just read.
11 Q. You just read -- I'm not -- please be a
12 little more specific. What exactly are you proposing
13 to combine from Edwards '535 with Makower?
14 MR. NEMTZOW: Objection, form, foundation,
15 relevance.
16 A. There's no specific design being proposed in
17 my opinion.
18 Q. Okay. You keep using the word "specific."
19 So is there a general design being proposed in
20 Paragraph 92 of your '077 patent declaration?
21 MR. NEMTZOW: Same objection.
22 A. Well, my interpretation of "general" may be

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1 different than yours. I think the term "general" is
2 satisfied by what I have in Paragraph 92.
3 Q. What do you mean by that?
4 A. What do you mean by "general"?
5 Q. I'm trying to use your terminology. You keep
6 using the word -- you keep limiting your answer to
7 "specific design." Why do you keep limiting your
8 answer to "specific design"?
9 MR. NEMTZOW: Objection, form, relevance.
10 A. To an engineer, "specific design" means
11 working out all of the details that would make that
12 device work -- wiring diagram, switches, electrode
13 placements, material structures, methods of adhering
14 components together.
15 Q. That's what I thought you meant. So now I'm
16 asking more generally: Is there some general concept
17 from Edwards '535 that you're proposing to implement
18 in Makower?
19 MR. NEMTZOW: Objection, form, foundation,
20 relevance.
21 A. And from specific to general it sounds like
22 there's a continuum. And in this case my continuum of

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1 "general" is represented in Paragraph 92.
2 Q. Okay. But you just keep saying it's in 92.
3 But please point me to something specific in 92 that
4 you're referring to.
5 A. I would say my opinion is no more specific
6 than this.
7 Q. Okay. So outside of Paragraph -- pointing to
8 Paragraph 92, you can't tell me as we sit here today
9 how you're proposing to combine Makower with Edwards
10 '535. Is that accurate?
11 MR. NEMTZOW: Objection, form, foundation,
12 relevance.
13 A. Beyond 92, no.
14 Q. Okay. How are you proposing to combine
15 Makower with Fang?
16 MR. NEMTZOW: Objection, form, foundation,
17 relevance.
18 A. Well, if you look at -- well, Paragraph 83,
19 Fang teaches using radiofrequency to treat rhinitis.
20 Q. I see that.
21 A. A specific medical condition, which I'm not
22 sure is anticipated in Makower.

1 Q. Okay. So again, how are you proposing to
2 combine Makower with Fang?
3 MR. NEMTZOW: Same objection.
4 A. I mean, I don't know if it's accurately
5 represented -- I don't know if it's addressed in the
6 opinion, but it may be something as simple as using
7 the device of Makower and the application of Fang.
8 Q. What do you mean, "using the device of
9 Makower and the application of Fang"?
10 MR. NEMTZOW: Objection, form, foundation,
11 relevance.
12 A. So Fang used device SHP-1 to perform his
13 clinical procedure. You can imagine not using SHP-1
14 but instead using the device of Makower.
15 Q. Okay. So when you discuss the device taught
16 by the combination of Makower, Fang, and Edwards
17 '535 -- strike that.
18 So if I understand you correctly, you're
19 saying that you're proposing to combine Makower's
20 device with Fang's teaching of using radiofrequency to
21 treat rhinitis?
22 MR. NEMTZOW: Objection, form, foundation,

1 relevance.
2 A. Yes, and it goes beyond that; right? Because
3 Fang specifically states not placing the electrodes
4 closer together than 5 millimeters. So that's
5 something that Makower doesn't teach, but we can take
6 that from Fang and develop a device that would treat
7 rhinitis.
8 Q. So just so we're on the same page: Is it
9 your testimony today that you're combining Makower
10 with Fang to use Makower's device to treat rhinitis?
11 Is that one of the ways you're proposing to combine
12 those two references?
13 MR. NEMTZOW: Objection, form, relevance.
14 A. That's one way but not the only way.
15 Q. Are you also proposing to combine Makower's
16 device with Fang's teaching of not placing the
17 electrodes closer together than 5 millimeters?
18 MR. NEMTZOW: Objection, form, foundation,
19 relevance.
20 A. Again, that's another teaching that would
21 have to be considered when designing a device.
22 Q. How else are you proposing to combine

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1 Makower's device with Fang?
2 MR. NEMTZOW: Same objection.
3 A. Well, I offer that as an example. Again, I'm
4 not in a position to redesign a whole medical device
5 from scratch. But I think that's one example of how
6 you'd combine the references.
7 Q. Where in your declaration for the '077 patent
8 do you opine that a POSITA would have combined Makower
9 with Fang to treat rhinitis?
10 MR. NEMTZOW: Objection, form, relevance.
11 A. That's addressed first in Paragraph 90, 91,
12 94.
13 Q. Anywhere else?
14 MR. NEMTZOW: Same objection.
15 A. Perhaps elsewhere.
16 Q. As we sit here today, can you point to any
17 other paragraphs where you address combining Makower
18 with Fang to treat rhinitis?
19 MR. NEMTZOW: Same objection.
20 A. I think that's it.
21 Q. Let's look at Paragraph 90 of your
22 declaration first. Where in Paragraph 90 of your

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1 declaration do you opine that a POSITA would have
2 combined Makower with Fang to treat rhinitis?
3 A. I think it's implicit in the reference of
4 Fang. The word "rhinitis" doesn't appear in this
5 paragraph, but it does appear in Fang. So it's there
6 by reference.
7 Q. So you'd agree that in Paragraph 90 of your
8 '077 patent declaration you don't mention anything
9 about rhinitis; is that correct?
10 MR. NEMTZOW: Objection, form, relevance.
11 A. Except only by reference.
12 Q. What do you mean, "by reference"?
13 A. Well, I reference Fang.
14 Q. Right. But you don't specifically reference
15 using Fang to treat rhinitis; correct?
16 MR. NEMTZOW: Objection, form, relevance.
17 A. I believe the only disease Fang mentions is
18 rhinitis. In fact, it's in the title of his paper.
19 Q. Sure, but Fang also discloses the SHP-1
20 device, doesn't it?
21 A. Well, but you asked me about treatment, what
22 is Fang treating, and that's evident in the title of

1 his article.
2 Q. I didn't ask you about treatment. I asked
3 you how you're combining Makower with Fang.
4 MR. NEMTZOW: Objection, form, relevance.
5 A. Well, you asked me in Paragraph 90 where do I
6 mention rhinitis, and I don't mention the word
7 specifically, but I mention Fang, and rhinitis is
8 mentioned in the title of Fang's reference.
9 Q. So we were supposed to infer from Paragraph
10 90 of your declaration that you're proposing to
11 combine Makower with Fang's discussion of treating
12 rhinitis?
13 MR. NEMTZOW: Objection, form, relevance.
14 A. Yes.
15 Q. Understood. Let's look at Paragraph 91 of
16 your declaration. Where in Paragraph 91 of your '077
17 patent declaration do you discuss rhinitis?
18 MR. NEMTZOW: Objection, form, relevance.
19 A. It's not in 91.
20 Q. Okay. You agree that Paragraph 91 of your
21 '077 patent declaration doesn't mention anything about
22 rhinitis; correct?

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1 MR. NEMTZOW: Objection, form, relevance.
2 A. Correct.
3 Q. And you agree that Paragraph 91 of your '077
4 patent declaration doesn't mention anything about
5 combining Makower with Fang's teaching of treating
6 rhinitis; correct?
7 MR. NEMTZOW: Objection, form, relevance.
8 A. Correct.
9 Q. So again, were we supposed to infer from
10 Paragraph 91 that your proposed combination of Makower
11 and Fang is to use Makower's device to treat rhinitis?
12 MR. NEMTZOW: Same objection.
13 A. Only if you read Paragraph 90.
14 Q. Let's go to Paragraph 94. Where in Paragraph
15 94 do you mention rhinitis?
16 A. It's not specifically mentioned in Paragraph
17 94.
18 Q. Paragraph 94 doesn't contain the term
19 "rhinitis" anywhere, does it?
20 A. That is correct.
21 Q. And Paragraph 94 doesn't mention anything
22 about combining Makower with Fang's teaching of

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1 treating rhinitis; correct?
2 MR. NEMTZOW: Objection, form, relevance.
3 A. Correct.
4 Q. So again, were we supposed to infer from
5 Paragraph 94 that your proposed combination of Makower
6 and Fang is to use Makower's device to treat rhinitis?
7 MR. NEMTZOW: Same objection.
8 A. Not if you only read Paragraph 94, no.
9 Q. What if you read 94 together with 90 and 91?
10 A. Yes, possibly.
11 Q. Now let's talk about -- you had mentioned
12 something about not placing electrodes closer together
13 than 5 millimeters. Do you recall saying something
14 along those lines?
15 A. Yes.
16 Q. Where in your declaration do you propose
17 combining Makower with Fang's teaching to not place
18 the electrodes closer than -- closer together than 5
19 millimeters?
20 MR. NEMTZOW: Objection, form, foundation,
21 relevance.
22 A. That was part of my testimony to answer a

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1 question that you asked about how we design a device.
2 That is not addressed in the written declaration.
3 Q. Okay, so your written declaration does not
4 propose combining Makower with Fang's teaching of
5 placing electrodes closer together -- let me start
6 that over.
7 So your written declaration for the '077
8 patent does not propose combining Makower with Fang's
9 teaching of not placing electrodes closer together
10 than 5 millimeters; is that correct?
11 MR. NEMTZOW: Same objection.
12 A. Correct.
13 Q. In this proposed combination you have of
14 Makower, Fang, and Edwards '535, what is the primary
15 reference in that combination?
16 A. What do you mean by "primary reference"?
17 Q. The reference that you're then adding onto.
18 MR. NEMTZOW: Objection.
19 Q. Or modifying.
20 MR. NEMTZOW: Objection, form, relevance.
21 A. I'm sorry, I don't understand the question at
22 all.

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1 Q. In other words, if you were to take a first
2 reference and then use another reference to modify
3 that first reference or combine with that first
4 reference, what I'm saying is, that first reference
5 would be what I would call the primary reference. Do
6 you follow what I'm saying?
7 MR. NEMTZOW: Objection, form, relevance.
8 A. I follow what you're saying there. Now, what
9 are you asking me?
10 Q. So in this proposed combination of Makower,
11 Fang, and Edwards '535, which of those references is
12 the primary reference in that combination?
13 MR. NEMTZOW: Same objection.
14 A. And by "primary" what do you mean?
15 Q. Again, what I mean by "primary" is, if you
16 have a combination of references or you're modifying a
17 reference in some way, whichever reference you start
18 with is like your base reference, and then change from
19 there. That's what I'm calling the primary reference.
20 A. So is the primary reference the one that
21 you're accessing first, or is the primary reference
22 the one you're accessing the most?

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1 Q. I think to answer your question: first. So
2 it's the base reference that you're then changing or
3 adding onto.
4 MR. NEMTZOW: Objection, form, relevance.
5 Q. You still seem a little confused.
6 A. I think I understand your question, though.
7 Q. Do you want me to reask the original
8 question?
9 A. Well, I mean, the answer is: There is no
10 implied primary reference; right? I mean -- and it
11 depends exactly what you were implementing as to what
12 you would apply -- you know, rely on more than the
13 others.
14 Q. Okay. Let me reask the question, and then
15 I'll let you go from there.
16 So the question was: In your proposed
17 combination of Makower, Fang, and Edwards '535, which
18 of those references is the primary reference?
19 MR. NEMTZOW: Objection, form, relevance,
20 foundation.
21 A. Okay, primary for rendering my opinion or
22 primary for if I was to design a device?

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1 Q. Well, you say in Paragraph 92 "the device
2 taught by the combination of Makower, Fang, and
3 Edwards-535." So when you mention "the device taught
4 by the combination of Makower, Fang, and Edwards-535,"
5 which of those references is the primary reference?
6 A. Okay. I understand. I did not single out
7 one to be a primary reference.
8 Q. When you mention "the device taught by the
9 combination of Makower, Fang, and Edwards-535," are
10 you combining Makower with Fang first?
11 MR. NEMTZOW: Objection, form, relevance.
12 A. By -- I don't understand "combining first."
13 Q. Are you proposing to combine all three of
14 those references at the same time?
15 MR. NEMTZOW: Same objection.
16 A. That would be one way to do it.
17 Q. Which way are you proposing to do it in your
18 declaration?
19 MR. NEMTZOW: Same objection.
20 A. The declaration doesn't propose an order or
21 weight of combination.
22 Q. Okay. Let's flip to Page 51. I'm looking at

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1 Paragraph 93. I'm looking at about three sentences
2 down. Do you see where you wrote, "Fang and
3 Edwards-535 similarly exemplify that applying RF
4 energy to tissue was well-known, as each reference
5 teaches using RF energy to treat tissue"? Do you see
6 that?
7 A. Yes.
8 Q. What do you mean by "to treat tissue"?
9 MR. NEMTZOW: Objection, form, relevance.
10 A. Well, I mean, it's not specific. But, I
11 mean, in general, applying RF energy and then having
12 some kind of biological response from the application
13 of that RF energy.
14 Q. So when you say "to treat tissue," do you
15 mean some kind of biological response from the
16 application of the radiofrequency energy?
17 MR. NEMTZOW: Objection, form, relevance.
18 A. Yes.
19 Q. Go ahead and flip to Page 54 for me. Now I'm
20 looking at Paragraph 95, the last sentence. Do you
21 see where you wrote, "Stern also provides specific
22 details regarding how to manufacture and arrange

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1 electrodes on the surface of an expandable bladder, an
2 example of which is shown in Figure 19"? Do you see
3 that?
4 A. Yes.
5 Q. Why is this opinion relevant to your
6 analysis?
7 MR. NEMTZOW: Objection, form.
8 A. Well, I mean, it's true; right? And it
9 provides some prior art information about
10 manufacturing these devices on an expandable member.
11 Q. Makower doesn't teach an expandable bladder,
12 does it?
13 A. He has a lot of expandable devices. I don't
14 know if he calls it a bladder, but he may as a
15 balloon, which acts as a bladder, I believe.
16 Q. Do you want to point me to that?
17 A. Yes.
18 So figure 5G' and 5G''.
19 Q. I understand from Paragraph 186 of Makower
20 that referenced numeral 164 is a balloon. Do you see
21 that?
22 A. Yes.

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1 Q. Would you agree with me, if we just talk
2 about figure 5H of Makower --
3 A. Okay. But there's essentially an expandable
4 bladder or balloon in 5G.
5 Q. I'm totally with you. So let's move to 5H.
6 Do you agree that figure 5H does not show an
7 expandable bladder; correct?
8 A. Correct.
9 MR. NEMTZOW: Objection, relevance.
10 A. Correct.
11 Q. And you agree that in Makower's description
12 of figure 5H that that description doesn't mention an
13 expandable bladder or anything like that; correct?
14 A. Correct.
15 Q. Are you proposing to combine Edwards '535 and
16 Fang with Makower's figure 5G'?
17 MR. NEMTZOW: Objection, form.
18 A. My declaration doesn't contain a specific
19 proposal like that, but you probably could do that.
20 Q. Okay. Let's just talk about strictly what's
21 in your declaration. Do you agree that your
22 declaration doesn't provide any opinions about

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1 combining Edwards '535 and Fang with Makower's figure
2 5G'?
3 A. Correct.
4 Q. And do you agree that your declaration for
5 the '077 patent doesn't contain any opinions about
6 combining Fang or Edwards '535 with Makower's figure
7 5G''?
8 MR. NEMTZOW: Objection, form, relevance.
9 A. Correct.
10 Q. Isn't it true that Makower already teaches
11 electrodes on an outer surface of the device?
12 A. You're referring to figure 5H?
13 Q. You can start there, yeah. So I guess does
14 Makower figure 5H teach electrodes on an outer surface
15 of the device?
16 A. Well, 5H is maybe a little vague in that
17 regard. It's not clear from Makower exactly where
18 they are relative to the struts.
19 Q. Okay.
20 A. It just says "electrodes are located on the
21 strut members."
22 Q. Do you have a position one way or the other

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1 whether the electrodes in Makower figure 5H are on the
2 outer surface of the struts 214?
3 MR. NEMTZOW: Objection, form, foundation.
4 A. Well, it's not clear. I mean, if I were
5 designing this, I would put them on the outside, yes.
6 Q. Okay.
7 A. As a person skilled in the art, I would put
8 the electrodes contacting the tissue.
9 Q. Let's start with just what Makower discloses
10 or teaches.
11 A. Okay.
12 Q. Does Makower disclose or teach that the
13 electrodes in figure 5H are on the outer surface of
14 the struts 214?
15 MR. NEMTZOW: Objection, form, foundation.
16 A. He doesn't explicitly say it, but it is
17 implied; right?
18 Q. Why do you say that?
19 A. Because Makower says in one sentence,
20 "Electrodes are located on the strut members."
21 Several sentences later he says, "Thereafter current
22 is applied to the electrodes, causing tissue adjacent

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1 to the struts to be cauterized or heated."
2 So if they weren't on the surface of the
3 strut, you wouldn't -- they wouldn't contact the
4 tissue and they wouldn't cauterize it and heat it.
5 Q. So is it fair to say that Makower at least
6 suggests that the electrodes in figure 5H are on the
7 outer surface of the struts 214?
8 A. Yes.
9 Q. Are you modifying Makower to have Stern's
10 electrode configuration?
11 MR. NEMTZOW: Objection, form, relevance.
12 A. I mean, that could be an option. I'm not
13 suggesting a specific design.
14 Q. Well, again let's just focus strictly on your
15 opinions in your '077 patent declaration.
16 So in your '077 patent declaration are you
17 proposing to modify Makower to have Stern's electrode
18 configuration?
19 MR. NEMTZOW: Objection, form, relevance.
20 A. I didn't specifically address that in the
21 opinion.
22 Q. So there's no opinions in your '077 patent

1 declaration about modifying Makower to have Stern's
2 electrode configuration; correct?
3 MR. NEMTZOW: Same objection.
4 A. I think it's implicit that that's an option,
5 but it doesn't direct that to happen.
6 MR. GILFORD: I'm at a decent stopping
7 point. Could we go off the record?
8 (Recess taken.)
9 Q. So keeping on Page 54 of your '077
10 declaration. If you look at the first sentence of
11 Paragraph 96, do you see you wrote, "Further, a person
12 of ordinary skill in the art would have also been
13 motivated to improve Saadat's RF ablation device," and
14 it goes on?
15 A. Yes.
16 Q. I guess why are you talking about Saadat in
17 this section?
18 A. I'm not sure.
19 Q. Do you think it was a typo?
20 A. I don't recall.
21 Q. Could you flip to Page 55 of this
22 declaration.

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1 A. Yes.
2 Q. And I'm looking at the second sentence of
3 Paragraph 97. Do you see where you wrote, "Doing so
4 would have involved using Stern's known bipolar
5 pairing technique to fill in details of Makower, Fang,
6 and Edwards-535, which would have been desirable for
7 increased safety and control"? Do you see that?
8 A. Yes.
9 Q. Was Makower's device unsafe?
10 MR. NEMTZOW: Objection, form, foundation,
11 and relevance.
12 A. Well, I mean, ultimately from a patent you
13 can't determine if a device is safe or not. Safety is
14 determined via testing, FDA testing.
15 Q. Do you have any opinions as we sit here today
16 on whether Makower was unsafe?
17 MR. NEMTZOW: Same objection.
18 A. In the medical device field you always talk
19 about making devices safer. That's always an
20 objective.
21 But no, I have no reason to think that
22 Makower's design is inherently unsafe.

1 Q. Was Fang unsafe?
2 MR. NEMTZOW: Same objection.
3 A. I don't know.
4 Q. So as we sit here today, do you have any
5 opinions on whether Fang's device was unsafe?
6 MR. NEMTZOW: Same objection.
7 A. No.
8 Q. Was Edwards '535 unsafe?
9 MR. NEMTZOW: Same objection.
10 A. I don't know.
11 Q. As we sit here today, do you have any
12 opinions on whether Edwards '535's device was unsafe?
13 MR. NEMTZOW: Same objection.
14 A. No.
15 Q. If you continue on the next sentence in
16 Paragraph 97, do you see where you wrote, "Increased
17 safety would have been a predictable result from this
18 combination, as increased control and even tissue
19 heating would avoid unwanted ablation of adjacent
20 tissue and over-heating of target tissue"? Do you see
21 that?
22 A. Yes.

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1 Q. Is it fair to say you agree that Makower
2 alone would have resulted in unwanted ablation of
3 adjacent tissue and overheating of target tissue?
4 MR. NEMTZOW: Objection, form, foundation,
5 relevance.
6 A. In this context I didn't examine Makower
7 alone.
8 Q. Do you have any opinions on whether Makower
9 by itself would have resulted in unwanted ablation of
10 adjacent tissue and overheating of target tissue?
11 MR. NEMTZOW: Same objection.
12 A. It depends on how the device would be used.
13 Q. Okay. So again, the question was: As we sit
14 here today, do you have any opinions on whether
15 Makower by itself would have resulted in unwanted
16 ablation of adjacent tissue and overheating of target
17 tissue?
18 MR. NEMTZOW: Same objection.
19 A. No.
20 Q. Is it your opinion that Fang alone would have
21 resulted in unwanted ablation of adjacent tissue and
22 overheating of target tissue?

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1 MR. NEMTZOW: Same objection.
2 A. I have no opinion on that.
3 Q. Is it your opinion that Edwards '535 alone
4 would have resulted in unwanted ablation of adjacent
5 tissue and overheating of target tissue?
6 MR. NEMTZOW: Same objection.
7 A. No opinion on that.
8 Q. Go ahead and flip to the next page, Page 56.
9 I'm looking at Paragraph 99, and I'm looking at the
10 very first sentence of Paragraph 99. Do you see where
11 you wrote, "Makower and Stern describe similar
12 objectives, devices, and techniques for delivering
13 bipolar radiofrequency ablation energy"? Do you see
14 that?
15 A. Yes.
16 Q. What are the similarities between the devices
17 disclosed in Makower and Stern?
18 MR. NEMTZOW: Objection, form.
19 A. Well, the next sentence kind of answers your
20 question: "Both disclose bipolar RF electrodes and
21 discuss delivering RF energy to tissue."
22 Q. Are there any other similarities between the

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1 devices disclosed in Makower and Stern?
2 A. There probably are.
3 Q. Can you name some?
4 A. Off the top of my head, no.
5 Q. I'm looking again a couple of lines down in
6 the same paragraph. Do you see where you wrote,
7 "Similarly, Fang and Stern describe similar
8 objectives, devices, and techniques for delivering
9 radiofrequency energy, as each both disclose treating
10 tissue with RF energy"? Do you see that?
11 A. Yes.
12 Q. What are the similarities between the devices
13 disclosed in Fang and Stern?
14 MR. NEMTZOW: Objection, form.
15 A. I mean, I think both of them describe
16 techniques for delivering electrical energy to tissue.
17 Q. Are there any other similarities between the
18 devices disclosed in Fang and tern?
19 MR. NEMTZOW: Objection, form.
20 A. None I can think of off the top of my head.
21 Q. Do the devices disclosed in Fang and Stern
22 have similar structures?

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1 MR. NEMTZOW: Same objection.
2 A. What do you mean, "similar structures"?
3 Q. Well, I guess let me ask a different
4 question. Do the devices disclosed in Fang and Stern
5 use similar electrodes?
6 MR. NEMTZOW: Objection, form.
7 A. That I'm not sure.
8 Q. Do the devices disclosed in Fang and Stern
9 use similar electrode placements?
10 MR. NEMTZOW: Objection, form.
11 A. That I'm not sure about.
12 Q. Do the devices disclosed in Fang and Stern
13 use similar energy levels?
14 MR. NEMTZOW: Objection, form, foundation.
15 A. That I don't know.
16 Q. Let's flip to the next page, Page 57, and I'm
17 looking at Paragraph 101, the first sentence. Do you
18 see where you wrote, "Additionally, a person of
19 ordinary skill in the art would have expected that
20 combining pairs of bipolar electrodes as taught by
21 Stern with an energy source as taught by Edwards-535
22 would have been successful, straightforward, and would

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1 have yielded predictable results"? Do you see that?
2 A. Yes.
3 Q. Do you know whether Edwards '535's energy
4 source is better than Stern's?
5 MR. NEMTZOW: Objection, form, relevance.
6 A. Well, Stern provides more detail. Stern's
7 figure 5 includes an incredible amount of detail
8 regarding his device and how it would be controlled.
9 Q. I guess the question was: Is Edwards '535's
10 energy source better than Stern's?
11 MR. NEMTZOW: Objection, form, relevance.
12 A. Edwards does not have enough detail to
13 compare them that way.
14 Q. Is there -- is anything improved by using
15 Edwards '535's energy source over Stern's existing
16 energy source?
17 MR. NEMTZOW: Objection, form, relevance.
18 A. I don't think so. I don't know. I mean,
19 Edwards -- Edwards just doesn't have enough detail to
20 truly compare them.
21 Q. Okay.
22 MR. GILFORD: Let's go ahead and mark this

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1 as Martin Exhibit 8.
2 (Exhibit 8 marked for identification.)
3 Q. So I've drawn another sample circuit for you.
4 So again, you see there's a circle with two
5 dotted-line rectangles around it, and then there's
6 four things there that I labeled 1, 2, 3, 4? Do you
7 see that?
8 A. Yes.
9 Q. So again assume that the things labeled 1, 2,
10 3, 4 are electrodes, and for the boxes I drew around
11 the circle, assume that the two different boxes kind
12 of designate the ends of two different generators, so
13 to speak.
14 A. All right.
15 Q. So starting with the rectangle in red around
16 the circle: Let's start there and assume that that
17 rectangle in red designates the radiofrequency
18 generator. Are you with me so far?
19 A. Yeah.
20 Q. So I believe you testified earlier that if
21 you assume that that red dashed rectangle designates
22 the radiofrequency generator, that in that case this

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1 circuit would have only one radiofrequency hub or
2 channel; is that correct?
3 MR. NEMTZOW: Objection, form, foundation,
4 relevance.
5 A. Correct.
6 Q. If you assume that the black dotted rectangle
7 around the circle is the -- designates the
8 radiofrequency generator, in that case how many
9 radiofrequency output channels would you say that this
10 circuit has?
11 MR. NEMTZOW: Objection, form, foundation,
12 relevance.
13 A. Two.
14 Q. Why do you say that?
15 A. Well, because this would be one channel, this
16 would be another channel.
17 Q. So just --
18 A. So each electrode -- each electrode pair, as
19 you've drawn them, implied, is fed by a channel.
20 Q. So I guess just since the stenographer
21 can't -- just kind of use like the numbers of
22 electrodes when you're designating a pair. So I'll

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1 let you speak.
2 MR. NEMTZOW: Same objection.
3 A. So the implication here is this would be a
4 two-channel RF generator.
5 Q. Okay. And then just kind of put into words
6 what you would say are the two channels, using like
7 the electrode -- the numbers next to what I'm calling
8 the electrodes.
9 MR. NEMTZOW: Same objection.
10 A. May I amend your drawing?
11 Q. Yeah. Do you want a red pen?
12 A. So in this case -- right? -- rather than
13 talking about the electrodes, just talk directly about
14 the outputs. Right? So you could say A and D form a
15 channel, and B and C form a channel.
16 Q. Okay. So I guess in this diagram the number
17 of output channels depends on how you're defining the
18 radiofrequency generator. Is that fair to say?
19 MR. NEMTZOW: Objection, form, foundation,
20 relevance.
21 A. I would say you're correct. I mean, the
22 concept of "channel" is not -- there's no specific

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1 definition. But if you ask me as a person skilled in
2 the art, you know, I would say, yes, the red dotted
3 line -- the RF generator as defined by the red dotted
4 line constitutes a one-channel RF generator. The RF
5 generator constituted by the dark dotted line
6 constitutes a two-channel RF generator.
7 Q. Okay. And just, you know, kind of -- again
8 let's assume that the black rectangle is what we're
9 calling the RF generator. In this circuit -- and
10 again, assuming the black rectangle designates the RF
11 generator -- is this circuit able to achieve
12 independent control of the electrode pairs?
13 MR. NEMTZOW: Objection, form, foundation,
14 and relevance.
15 A. What do you mean by "independent"?
16 Q. Well, I guess I mean in the same sense that
17 you kind of use it in your '318 declaration.
18 A. Uh-huh.
19 Q. So I guess I'll just point out an instance of
20 when you mention that to you, and then we can kind of
21 go from there. Do you happen to have your '318?
22 A. Yes.

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1 Q. If you go to like Paragraph 128 on Page 66.
2 If you look at the first sentence there, you see you
3 mention, "Stern's switching mechanism accomplishes
4 independent activation of each electrode pair," and it
5 goes on?
6 A. Yes, correct.
7 Q. And then if you also look at Paragraph 130,
8 about -- like towards the top, there's the number 1 in
9 parens, and it says, "Delivering bipolar RF energy and
10 delivering energy to each electrode independently,"
11 and it goes on. Do you see that?
12 A. Yes.
13 Q. I guess when I refer to -- well, I guess
14 let's start with this.
15 So again turning back to the diagram that
16 we've marked as Martin Exhibit 8: Does that diagram
17 accomplish delivering energy to each electrode
18 independently?
19 MR. NEMTZOW: Objection, form, foundation,
20 relevance.
21 A. In the absence of switches, no, it would not.
22 Q. Okay. Why do you say that?

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1 A. Well, if you look at -- so going back to
2 Stern's figure -- is it 15? There we have the
3 switches. Each electrode can be sort of, if you will,
4 individually addressed.
5 Q. Okay. So if you're unable to address each
6 electrode individually, then you're not delivering
7 energy to each electrode independently?
8 MR. NEMTZOW: Objection, form, foundation,
9 relevance.
10 A. Well, think of it this way; right? As you
11 have it configured here -- right? -- there's no
12 switches. So once you turn the RF generator on, all
13 the electrodes are electrified, if you will.
14 Q. In other words, they're not --
15 A. They're not independent.
16 Q. And I guess is it a bad thing that the
17 electrodes wouldn't be independently receiving
18 electricity?
19 MR. NEMTZOW: Objection, form, foundation,
20 relevance.
21 A. Well, Stern's implementation gives you more
22 control.

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1 Q. And is the absence of that control, I guess,
2 a bad thing?
3 MR. NEMTZOW: Objection, form, foundation,
4 relevance.
5 A. In medical devices more control is always
6 considered better.
7 Q. I guess would a POSITA have ever implemented
8 something like that shown in Martin Exhibit 8 in a
9 medical device?
10 MR. NEMTZOW: Same objection.
11 A. Maybe.
12 Q. I guess not to belabor the point, but in the
13 diagram shown in figure 8 -- so for electrodes 1 and
14 2, is the power split between them?
15 MR. NEMTZOW: Same objection.
16 A. So the answer to that question depends on the
17 tissue properties.
18 Q. Okay.
19 A. So if you -- if your tissue electrical and
20 thermal properties are completely uniform, then yes,
21 the power will be split. To the extent that you have
22 some heterogeneity in the tissue electrical and/or

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1 thermal properties, then no, the power will be
2 apportioned. That depends on how you're actually
3 electrifying it. If you have -- how you're
4 controlling it, if you have a constant voltage or a
5 constant current or controlling for some other --
6 controlling temperature or what have you.
7 Q. So I guess when you're talking about
8 greater -- this concept of greater control, is the
9 idea that if you have a circuit kind of like that
10 shown in Exhibit 8, that --
11 I guess can you explain to me in like
12 simple terms why the circuit shown in Exhibit 8 would
13 not achieve -- what was the word you used? Constant
14 control? Constant current?
15 MR. NEMTZOW: Objection, form, foundation,
16 relevance.
17 A. So what I said was, in medical devices more
18 control is always considered better, potentially safer
19 for the patient and potentially more predictable. And
20 using Stern's implementation, for instance, Stern
21 gives you that more control, where you can switch
22 individually to the electrodes and combine them for

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1 whatever application you have.
2 Q. So I guess why does that circuit in Exhibit 8
3 give you less control?
4 MR. NEMTZOW: Same objection.
5 A. In part because, depending on where these
6 electrodes are, you don't know where they're going to
7 sit in the tissue, you don't know what the tissue
8 properties are going to be.
9 If you can individually address them --
10 let's say, for instance, Stern, he proposes
11 temperature monitoring -- right? -- combined with the
12 electrodes. In that case, if you use temperature
13 monitoring, you can control each one individually
14 according to a set temperature. You can switch -- I'm
15 sorry. You could switch, let's say, electrodes 2 and
16 4 off if they're getting too hot and you could switch
17 1 and 3 on if they're getting too cold.
18 Q. So I guess why does the inability to switch
19 in Exhibit 8 give you less control?
20 MR. NEMTZOW: Objection, form, foundation,
21 relevance.
22 A. So, for instance, you could end up in a

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1 situation where -- let's say you apply a constant
2 voltage to the channel; right? So all four
3 electrodes, let's say, have the same temperature --
4 voltage difference.
5 But over here, between 2 and 4, if the
6 electrical conductivity is higher in the tissue that
7 happens to be between electrodes 2 and 4, you'll get
8 more current there, and then you'll get a higher
9 temperature there. And then you either have to shut
10 the whole thing down or overheat the tissue in that
11 case.
12 Q. Okay. So basically, I guess what you're
13 saying is, the configuration in Exhibit 8 does not
14 give you the ability to independently control how much
15 current is going through each electrode pair?
16 MR. NEMTZOW: Objection, form, foundation,
17 relevance.
18 A. Separately, yes. You can control how much
19 current -- you could make this RF generator to control
20 how much current is going through all the electrodes
21 but not separate them out.
22 Q. Okay. So I guess to rephrase: The

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1 configuration shown in Martin Exhibit 8 does not give
2 you the ability to separately control how much current
3 is going through each electrode pair.
4 MR. NEMTZOW: Objection, form, foundation,
5 and relevance.
6 A. Correct.
7 Q. I'm almost done. Do you happen to have,
8 though, a copy of Stern in front of you, and just
9 really quick, figure 15?
10 A. Stern?
11 Q. Figure 15.
12 A. Yes.
13 Q. Just to make sure we're on the same page.
14 Okay.
15 Would you ever close -- would it make
16 sense to close switch 248 and 246 at the same time?
17 MR. NEMTZOW: Objection, form, relevance.
18 A. Yeah. Why not?
19 Q. Well, I guess let me ask it this way: So if
20 you close switch 248 and 246 at the same time and you
21 close switch 236 and 234 at the same time, would you
22 run into the same issues we were discussing with

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1 Exhibit 8?
2 MR. NEMTZOW: Objection, form, foundation,
3 and relevance.
4 A. Just so I understand, you're proposing we
5 simultaneously close four switches. The four switches
6 are 248, 246, 236, and 234?
7 Q. Yeah.
8 A. So you put the switches in place so it
9 reproduces your drawing here in Exhibit 8 -- it
10 reproduces the electrical circuit.
11 Q. That's how I imagine it, yeah.
12 MR. NEMTZOW: Same objection.
13 Q. Like, there are still switches there, but
14 you're closing those four, yeah.
15 MR. NEMTZOW: And I'll object on the same
16 grounds.
17 A. Okay. So what's the question?
18 Q. The question was: So if you close switch
19 248, 246, 236, and 234 all at the same time in Stern
20 figure 15, do you run into the same issues we were
21 discussing with Martin Exhibit 8?
22 MR. NEMTZOW: Again, same objection.

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1 A. If you implemented figure 15 alone; right?
2 And that's where figure 5 in Stern -- if you apply
3 some temperature control, you can at least shut them
4 all down if you have an overheat or individually shut
5 them off if you're overheating.
6 Q. Okay. But again, you had mentioned one of
7 the issues with Martin Exhibit 8 was the inability to
8 separately control how much current's going through
9 each pair. Correct?
10 A. Yes.
11 Q. So if you were to close switch 248, 246, 236,
12 and 234 in Stern figure 15, in that situation, all
13 four of those switches closed at the same time -- in
14 that case you would not be able to independently -- or
15 sorry, you would not be able to separately control how
16 much current's going through the electrode pairs.
17 Correct?
18 MR. NEMTZOW: Same objection.
19 A. Barring any other monitoring circuitry, yes.
20 But at least here you have the switches; right? You
21 can unplug them. You can unplug the electrodes.
22 MR. GILFORD: I'm so close to the end.

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1 Could we just go off the record.
2 (Recess taken.)
3 Q. So Dr. Martin, we obviously had several
4 breaks during today's deposition. During any of those
5 breaks did you discuss the substance of your testimony
6 with anybody?
7 A. No.
8 Q. Did you discuss anticipated future testimony
9 with anybody?
10 A. No.
11 MR. GILFORD: I have no further questions.
12 EXAMINATION
13 BY MR. NEMTZOW:
14 Q. Dr. Martin, do you recall when Mr. Gilford
15 asked you some questions about the prosecution history
16 of the challenged patents yesterday?
17 A. Yes.
18 Q. And do you recall that you testified you had
19 not reviewed the prosecution history of the challenged
20 patents?
21 A. Yes.
22 Q. If we can return to your declaration in

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1 IPR2024-00278, regarding the '318 patent.
2 A. Yes.
3 Q. And if we can turn to Page 22. Would you
4 please read the title of Subsection B.
5 A. "An Overview of the Prosecution History of
6 the '318 Patent."
7 Q. And could you please read Paragraphs 46
8 through 49.
9 MR. GILFORD: Just to be clear, are you
10 asking him to read the entire --
11 MR. NEMTZOW: Just take a look at them.
12 He doesn't have to read them into the record.
13 A. Yes, I've read it.
14 Q. And does this refresh your recollection as to
15 whether you considered the '318 patent prosecution
16 history in coming to your opinions on the '318 patent?
17 A. Yes, it does. And I apologize. When the
18 question was originally asked, I thought he meant the
19 entire file, the entire patent history file.
20 Q. Did you review the portions discussed in that
21 part of your declaration?
22 A. Yes, I did.

1 Q. Thanks. And if you could please turn to
2 Appendix B in the same declaration. If you can take a
3 look at Exhibit 1003.
4 A. Yes.
5 Q. And what does this indicate about your
6 consideration of the '318 patent prosecution history
7 in coming to your opinions on the '318 patent?
8 A. It means that the file history of the '318
9 patent was considered in formulating my opinion.
10 Q. And if we can turn to your declaration in
11 IPR2024-00282, regarding the '286 patent.
12 A. Yes.
13 Q. Can you please turn to Page 23 and read the
14 title of Subsection B.
15 A. "An Overview of the Prosecution History of
16 the '286 Patent."
17 Q. And can you please read, without reading into
18 the record, Paragraphs 51 through 54.
19 A. Okay.
20 Okay.
21 Q. Does this refresh your recollection as to
22 whether you considered the '286 patent prosecution

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1 history in coming to your opinions on the '286 patent?
2 A. Yes, it does.
3 Q. And similar to with the '318 patent, can we
4 please turn to Appendix B, and take a look at Exhibit
5 1003.
6 Dr. Martin, what does this indicate about
7 your consideration of the '286 patent prosecution
8 history in coming to your opinions on the '286 patent?
9 A. It indicates that the file history of the
10 '286 patent was part of the materials considered in
11 forming the opinion.
12 Q. Thank you.
13 MR. NEMTZOW: No further questions.
14 FURTHER EXAMINATION
15 BY MR. GILFORD:
16 Q. I think I just have two followup questions,
17 hopefully pretty brief.
18 Pick up again the '318 declaration, and
19 turn to that Paragraph 46 again. To be clear, did you
20 review the entirety of the -- strike that. Did you
21 review the entirety of the '318 patent prosecution
22 history, or did you just review the portions of the

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1 prosecution history that are cited in your declaration
2 at Paragraphs 46 to 49?
3 MR. NEMTZOW: Objection, form.
4 A. Yes, I did not review the entire patent file.
5 I only reviewed those sections referenced in my
6 opinion, yes.
7 Q. Got it. And just going back to now the '286
8 declaration, Paragraphs 51 to 54. So a similar
9 question: Did you review the entirety of the '286
10 patent prosecution history, or did you just review the
11 portions of the prosecution history cited on
12 Paragraphs 51 to 54 of this declaration?
13 MR. NEMTZOW: Objection, form.
14 A. Yes, that's an accurate characterization. I
15 didn't review the entire patent history file, only
16 those elements referenced in my opinion here.
17 Q. Okay.
18 MR. GILFORD: No further questions.
19 MR. NEMTZOW: None from petitioners.
20 (The deposition concluded at 12:53 p.m.)
21
22

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1 CERTIFICATE OF SHORTHAND REPORTER - NOTARY PUBLIC
2
3 I, Alan H. Brock, Certified Reporter
4 and Notary Public within and for the Commonwealth of
5 Massachusetts, do hereby certify:
6 That Gregory Thomas Martin, the
7 witness whose deposition is hereinbefore set forth,
8 was duly sworn by me before the commencement of such
9 deposition and that such deposition was taken before
10 me and is a true record of the testimony given by such
11 witness.
12 I further certify that the adverse
13 parties, Neurent Medical Inc. and Neurent Medical Ltd.,
14 were represented by counsel at the deposition.
15 I further certify that the deposition
16 of Gregory Thomas Martin occurred at the offices of
17 Wilmer Cutler Pickering Hale and Dorr on
18 Wednesday, September 25, 2024,commencing at 9:05 a.m.
19 to 12:53 p.m.
20 I further certify that I am not
21 related to any of the parties to this action by blood
22 or marriage, I am not employed by or an attorney to

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1 any of the parties to this action, and that I am in no
2 way interested, financially or otherwise, in the
3 outcome of this matter.
4 IN WITNESS WHEREOF, I have hereunto
5 set my hand this 27th of September, 2024.
6
7 My commission expires:
8 March 25, 2027.
9
10
11 _____
12 Alan H. Brock, RDR, CRR
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