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Transcript of Thomas W. Kenny, Ph.D.

Date: June 19, 2024

Case: AliveCor Inc. -v- Apple Inc. (PTAB)

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WORLDWIDE COURT REPORTING & LITIGATION TECHNOLOGY

AliveCor Exhibit 1022
AliveCor, Inc. v. Apple Inc.
IPR2023-00950, U.S. Patent No. 10,076,257

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2 -----
3 BEFORE THE PATENT TRIAL AND APPEAL BOARD
4 -----

5 ALIVECOR, INC.,

6 Petitioner,

7 v.

8 APPLE INC.,

9 Patent Owner
10 -----

11 Case No. IPR2023-00950

12 Patent 10,076,257 B2
13 -----

14
15 Virtual Deposition of THOMAS W. KENNY, Ph.D.

16 Wednesday, June 19, 2024

17 9:01 a.m. CST
18

19 Job No.: 537334

20 Pages: 1 - 149

21 Reported Stenographically by:

22 Tiffany M. Pietrzyk, CSR RPR CRR

1 Virtual deposition of THOMAS W. KENNY,
2 Ph.D., pursuant to notice, before Tiffany M.
3 Pietrzyk, a Certified Shorthand Reporter in the
4 States of Illinois, Texas, and California,
5 Registered Professional Reporter, Certified Realtime
6 Reporter, and a Notary Public in and for the State
7 of Illinois.

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IPR2023-00950, U.S. Patent No. 10,076,257

A P P E A R A N C E S C O N T I N U E D

ALSO PRESENT:

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Gabriela Sgambati (FR Summer Associate)

Evan Falk (FR Summer Associate)

Doru Halip, Planet Depos Remote Technician

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IPR2023-00950, U.S. Patent No. 10,076,257

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E X H I B I T S

(Retained by counsel.)

PREVIOUSLY MARKED EXHIBITS	PAGE
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10,076,257	
Exhibit 1005 U.S. Patent	93
Application	
Publication	
2007/0021677 A1	
Exhibit 1006 U.S. Patent Number	113
6,775,566	
Exhibit 1007 U.S. Patent Number	122
5,191,891	

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E X H I B I T S (Cont.)

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1

P R O C E E D I N G S

2

(Witness sworn.)

3

WHEREUPON:

4

THOMAS W. KENNY, Ph.D.,

5

called as a witness herein, having been first duly

6

sworn, was examined and testified as follows:

7

EXAMINATION

8

BY MR. FERNANDO:

9

Q. Good morning, Dr. Kenny.

10

A. Good morning.

11

Q. My name is Ravi Fernando, and I represent

12

AliveCor in this proceeding. Good to meet you.

13

A. Good to meet you too.

14

Q. Do you understand that you're under oath

15

today?

16

A. Yes.

17

Q. Is there any reason that you cannot testify

18

honestly and truthfully today?

19

A. No.

20

Q. And are you prepared to testify honestly and

21

truthfully?

22

A. Yes, I am.

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AliveCor Exhibit 1022

AliveCor, Inc. v. Apple Inc.

IPR2023-00950, U.S. Patent No. 10,076,257

1 Q. And so I know you've been deposed a few
2 times. But I'm just gonna go through some of the
3 standard questions. Sound fair?

4 A. Yes.

5 Q. All right. So as you know, today I'll be
6 asking questions, you'll be providing answers.
7 Unless your attorney instructs you not to answer,
8 I'd ask that you provide a response to my question.

9 Sound fair?

10 A. Sounds fair to me.

11 Q. As you know, there's a court reporter who's
12 transcribing everything, so please just make sure
13 that your answers are verbal and not nonverbal.

14 Sound good?

15 A. Yes.

16 Q. Any time you need to take a break today,
17 please just let me know. But I ask that if there's
18 a pending question you answer that question before
19 we take a break.

20 Sound good?

21 A. Yes.

22 Q. And sir, today's deposition is obviously

1 remote; correct?

2 A. Yes, it is.

3 Q. And can you let me know if you have any or
4 which files or programs you have up on your computer
5 right now?

6 A. All that's running right now is Zoom and
7 Safari, and Safari is just to get to my calendar so
8 I could open the Zoom link.

9 Q. Understood.

10 Sir, do you have any messaging apps or
11 phones that are within eyesight right now?

12 A. My phone's in my pocket. I could -- you
13 want me to move that someplace else?

14 Q. Up to you. In your pocket is fine by me or
15 else, yeah, as long as it's out of eyesight I'm
16 good.

17 A. Yeah, it's out of eyesight; facedown 10 feet
18 behind me.

19 Q. Thank you.

20 And do you have any printed documents in
21 front of you?

22 A. I do.

1 Q. And which are those?

2 A. So I printed I think the things that we'll
3 refer to today. That includes the '257 patent, my
4 April 10th declaration, the Markel patent, the
5 Nissila patent, and I also have the Swedish or
6 Finnish version of the Nissila patent and a
7 certified English translation of that patent that
8 was provided by my colleagues at Fish.

9 I have the April -- sorry -- the
10 October 2023 declaration that I provided. I have a
11 copy of Dr. Berger's declaration. I have the
12 original petition filed by your team. And I have
13 the original patent -- sorry -- I have the, I
14 believe, the most recent patent owner response, yes.

15 If there's anything further that I need, let
16 me know. I can pull it up on a second laptop just
17 to have it handy, but I'm hoping this covers what's
18 on the agenda for today.

19 Q. Appreciate that, sir.

20 And couple things on all those documents.
21 First of all, are there any notes or highlighting or
22 annotation on any of those printed documents?

1 A. Nope. They're fresh copies from Kinkos.

2 Q. And I think I know the answer, but just have
3 to confirm. Out of all those documents, are any of
4 them something other than what has been submitted as
5 a paper or an exhibit in this proceeding?

6 A. These are all official exhibits from the
7 proceeding.

8 Q. And so do all of the documents have the
9 stamp that corresponds to this proceeding or the IPR
10 number somewhere on them?

11 A. Let's see here. I have Exhibit 1 with that
12 stamp on it. The copy of my declaration doesn't
13 have that stamp, but it's the copy I signed and was
14 served. The Markel patent has those stamps, as does
15 the Nissila patent. I don't see those stamps on the
16 Finnish or translated document.

17 Let's see. I have my October 2023, doesn't
18 have the stamp. Berger's declaration does. I don't
19 see that stamp on the original petition or on the
20 POR, but these are all served to me as part of the
21 exhibit packet from my team, the attorneys at Fish.

22 Q. Got it.

1 A. I think they're all the correct exhibits.

2 Q. And so if you can grab the copy of Markel
3 that you have, please, can you just tell me what the
4 number is in the right top right-hand corner of that
5 version of Markel you have?

6 A. It's the 2007/0021677A1.

7 Q. Perfect. Okay. I think we're on the same
8 page then.

9 A. Yeah.

10 Q. Thank you.

11 A. Okay.

12 Q. So you can set those papers to the side for
13 a second. I'd like to talk a little bit about your
14 retention for this matter.

15 Sound good?

16 A. Sure.

17 Q. So when were you retained on behalf of Apple
18 for this IPR proceeding?

19 A. I believe the first contact on this
20 proceeding was, um -- well, actually let's be clear.
21 There's two proceedings related to this particular
22 patent from Apple. There's a Masimo IPR proceeding

1 and then there's this AliveCor proceeding.

2 I was contacted with respect to the Masimo
3 proceeding in March of 2023, and we went through the
4 process of preparing reports and all that. I
5 believe the first discussion about the AliveCor
6 proceeding would have been late summer or early fall
7 of 2023.

8 Q. And do you recall who reached out to you
9 about the Masimo and the AliveCor proceedings?

10 A. I think in both cases, I'd have to look, but
11 I think the first email came from Rick Bisenius.

12 Q. And since you were contacted by Apple about
13 the AliveCor proceedings, how many hours would you
14 estimate you've spent working on this matter?

15 A. On just the AliveCor proceedings?

16 Q. Yes, sir.

17 A. So there was time spent in the fall
18 preparing the original declaration. I would guess
19 40, 50 hours, somewhere in that range. And then
20 there was a second declaration prepared in April and
21 probably the work prior to that was in the same
22 amount of time, somewhere around 40 or 50 hours.

1 And I've spent, oh, 20 or 30 hours in the last few
2 weeks getting ready for today.

3 Q. And I'm not sure I saw it in your
4 declaration, sir, but what is your billing rate?

5 A. It's \$450 an hour.

6 Q. When you were preparing for today's
7 deposition, how many times did you meet?

8 A. Let's see. We met for a few minutes this
9 morning. We met yesterday for a few hours. And we
10 met last Thursday for about a half hour.

11 Q. And on each of those occasions, who did you
12 meet with?

13 A. With Rick Bisenius and Grace Kim. Eric,
14 Gabriela, and Evan were sort of witnesses to the
15 meeting yesterday also.

16 Q. At any time with respect to this proceeding
17 by AliveCor, have you met with any employees of
18 Apple?

19 A. So I have about a dozen former Ph.D.
20 students who are current employees at Apple, not
21 involved in any of these matters, to my knowledge.
22 I met them socially at a kind of reunion event in I

1 think it was late March. And I've bumped into a few
2 of them casually over the last couple of months.
3 Just we all live in the same area. We go to the
4 same conferences or seminars.

5 Q. Sure. Have you discussed this IPR
6 proceeding with AliveCor with anyone who's an Apple
7 employee?

8 A. No.

9 Q. Have you discussed any litigation between
10 Apple and AliveCor with anyone who's an Apple
11 employee?

12 A. The problem here is I have to think back
13 through all of those conversations with all of those
14 former students over the last -- wow -- several
15 years. I mean, there's none that I can recall where
16 this came up.

17 Q. So, sir, can you please pull up the October
18 declaration, which I believe is already marked
19 Exhibit 2001?

20 (Exhibit 2001, previously marked, was
21 retained by counsel.)

22 A. Okay.

1 Q. And this is one of the declarations that you
2 submitted in this proceeding; correct?

3 A. That's correct.

4 Q. And that's your signature on the front page?

5 A. Yes, it is.

6 Q. And if I refer to your first declaration or
7 your October declaration today, will you understand
8 that I'm referring to this document, Exhibit APPLE
9 2001?

10 A. Sure.

11 Q. Did you personally write the first draft of
12 your report, the October declaration?

13 A. The drafting of both of these reports was a
14 collaborative process, which I worked together with
15 Rick Bisenius and Grace Kim on the outline, the
16 arguments, the figures, and the final versions.
17 There's some portions of this report that are kind
18 of legal boilerplate, if you will, that I was
19 provided first draft by the attorneys, but the rest
20 was drafted and developed together.

21 Q. So other than the legal background section,
22 did you write the first draft of your report?

1 A. We wrote that together I think is a fair
2 thing.

3 Q. And other than the two folks that you
4 already mentioned, did anyone else help you with
5 writing your reports?

6 A. No.

7 Q. Sir, if you could pull up the April 10th
8 declaration that you submitted as well? And for the
9 record, I believe that has already been marked as
10 Exhibit 2004.

11 (Exhibit 2004, previously marked, was
12 retained by counsel.)

13 A. Okay.

14 Q. Sir, if I refer to your second declaration
15 or your April declaration today, will you understand
16 that I'm referring to this document, Exhibit 2004?

17 A. Yes.

18 Q. Before signing your second declaration, did
19 you review it thoroughly to confirm that it was true
20 and accurate?

21 A. Yes.

22 Q. And is that also true of your first

1 declaration?

2 A. Yes.

3 Q. Can you please go to paragraph 17 of your
4 second declaration?

5 A. Okay.

6 Q. That goes from pages 9 to 10; correct?

7 A. Uh-huh.

8 Q. When you formed your opinions in this
9 proceeding, did you rely on any documents other than
10 the documents listed here in paragraph 17 or any
11 other documents that are cited in this declaration?

12 A. Could you repeat that? I just want to be
13 sure I understood.

14 Q. Sure. I'm kind of reading from the start of
15 paragraph 17, if that helps. So my question was
16 whether you, when you formed your opinions in this
17 proceeding, relied on any materials other than the
18 materials listed in paragraph 17 or the materials
19 that are cited in the declaration.

20 A. So I guess what makes me pause here, so I
21 come into this process with years of experience and
22 qualifications that are equal to or beyond what we

1 have declared to be the requirements of a person of
2 ordinary skill. My knowledge, background, and
3 experience are part of how I understand and
4 interpret the documents here and contribute to the
5 formation of my opinions. I wouldn't want to say
6 that my knowledge and opinions in this case are
7 entirely limited only to the words on the pages of
8 these documents because my prior experience and
9 background is a factor in my understanding of that's
10 materials. So it's -- it certainly includes these
11 materials, but it also includes my background and
12 knowledge.

13 Q. Sure. And maybe I can use a different word
14 to just help us along.

15 So other than the documents that are listed
16 in paragraph 17 and the documents that are listed or
17 cited in your declaration, did you rely on any other
18 documents in forming your opinions in this
19 proceeding?

20 A. I -- I don't believe so.

21 Q. Exhibit 1003 that's listed here in
22 paragraph 17 is the declaration of Dr. Ronald D.

1 Berger; correct?

2 A. That's correct.

3 Q. And you understand that Dr. Berger is
4 AliveCor's expert in this proceeding; right?

5 A. I do.

6 Q. Did you know of Dr. Berger before you
7 reviewed his declaration?

8 A. I don't believe so.

9 Q. So can we please jump to paragraphs 23 and
10 24 of your second declaration?

11 A. Okay.

12 Q. So in this section, Dr. Kenny, you're
13 talking about the level of ordinary skill in the
14 art; is that right?

15 A. That's correct.

16 Q. And as you sit here today, are you aware of
17 any disagreement between yourself and Dr. Berger as
18 to the knowledge of a POSITA?

19 A. My sense is that our two descriptions are
20 not word-for-word identical but they are
21 substantially the same.

22 Q. So if that's the case, then are you aware of

1 any differences in opinions under your articulation
2 of the knowledge of a POSITA versus Dr. Berger's
3 articulation of it?

4 A. No.

5 Q. So I'd ask, sir, that you pull up the '257
6 patent, which is Exhibit 1001.

7 (Exhibit 1001, previously marked, was
8 retained by counsel.)

9 Q. And also the petition that's been filed in
10 this proceeding.

11 A. Okay. Just a moment.

12 Okay.

13 Q. All right. And for reference, in the
14 petition, if you could turn to the very end, there's
15 something that's been marked as a claims appendix.
16 Let me know if you see that.

17 A. Yes.

18 Q. Do you understand that the claims appendix
19 of the petition is adding reference numbers to the
20 claims of the '257 patent?

21 A. I would agree with that.

22 Q. And when you were providing your opinions in

1 your declaration, did you use these same claim
2 reference numbers?

3 A. I think that was the intent. If there's any
4 particular instances we want to look at just to be
5 sure, I'd be happy to check, but that was the
6 intention.

7 Q. Okay. And just trying to make sure that
8 we're all using the same language here.

9 So if I refer to one of the claim elements
10 that's in this claim appendix today, will you
11 understand it to correspond to the claim language
12 that's in the same table?

13 A. I think so. Again, thinking through the
14 hundreds of pages of reports, I think, in each case,
15 each paragraph or each section is pretty clearly
16 identified with both one of these labels and with
17 the language of the claim, just to be clear. So
18 happy to, again, go through line by line and see if
19 there's any discrepancies, but that was the intent.

20 Q. Sure. And, sir, if I refer to any of these
21 numbers today, feel free to grab the claims appendix
22 and just double-check against it.

1 A. Okay.

2 Q. So what I'd like to do is I'd like to walk
3 through at least part of Claim 1. So feel free to
4 refer to either the appendix or to the '257 patent,
5 Claim 1, and we can go from there. Sound good?

6 A. Sure.

7 Q. All right. So we'll start with claim
8 element 1.3.

9 Do you see where it recites, [As read] An
10 electronic device for detecting a user's cardiac
11 signal comprising?

12 A. Yes.

13 Q. Do you understand this to be the preamble of
14 Claim 1?

15 A. Yes, I do.

16 Q. Do you have any opinion as to whether this
17 preamble is limiting?

18 A. I don't think my report offers any opinion
19 as to the preamble of Claim 1.

20 Q. And at the end of that preamble, there's a
21 word there "comprising."

22 Do you see that?

1 A. Yes.

2 Q. Do you have an understanding of what the
3 word "comprising" means when written in claim
4 language?

5 A. Yes.

6 Q. And what is that understanding?

7 A. I think, in general, it means that the
8 elements that are listed after that word are
9 included in that claim element.

10 Q. What do you mean by included in that claim
11 element?

12 A. That one would expect to find each of the
13 following items present in the claimed invention.

14 Q. Can there be other different claim
15 elements -- sorry. Withdrawn.

16 Can there be other different elements beyond
17 what's recited after the word "comprising"?

18 A. Yes, I think so. For example, one might
19 assume a system like this might have a battery. And
20 even though it's not recited explicitly, the
21 presence of a battery is understood, or at least not
22 considered to be an exception to the claim.

1 Q. The next element, sir, recites an enclosure.
2 And that's element 1.A; correct?

3 A. Yes.

4 Q. When you formed your opinions on
5 element 1.A, did you apply the plain and ordinary
6 meaning?

7 A. Of the word "enclosure"?

8 Q. Yes, sir. Or, well, let me step back. Of
9 the entire element, but I think the only thing there
10 is "an enclosure."

11 A. I'm sorry. I think I'm just
12 misunderstanding. Could you say that again?

13 Q. Yeah, that was a terrible question.

14 A. It's just the claim element and the
15 enclosure, I applied the plain and ordinary meaning
16 of the word "enclosure."

17 Q. Okay. And so when you formed your opinions,
18 what did you understand to be the plain and ordinary
19 meaning of enclosure?

20 A. So I'm reluctant to create a construction
21 for that term on the fly. We could look at some
22 examples from the '257 patent. Maybe those

1 illustrations would provide some guidance. I can
2 identify things that I considered to be reasonably
3 described as an enclosure. But I did not draft a
4 construction for that term. I think the plain and
5 ordinary meaning is apparent within the context of
6 the claims and the description of the '257.

7 Q. Fair enough, sir. And that's all I'm trying
8 to understand. What was the plain and ordinary
9 meaning of enclosure that was apparent to you?

10 A. Well, for example, if we look at figure 3 of
11 the '257, this figure points to a number of items
12 that I think are all portions of the enclosure. So,
13 for example ... so portions of the enclosure would
14 be the items all labeled with respect to figure 3.

15 Q. So when you formed your opinions on the
16 plain and ordinary meaning of enclosure, was it your
17 understanding that every item that's numbered in
18 figure 3 corresponds to part of the enclosure?

19 A. Apologies for the delay. I haven't spent
20 time trying to decide exactly what the elements of
21 the enclosure would be in the analysis of the
22 claims. But I think, looking at figure 3, you know,

1 the enclosure includes, for example, the bezel, the
2 display. There's the sides, 312 and 314. There's a
3 back, I assume, not shown in this figure. Would
4 basically be the sum of elements that form the, you
5 know, the enclosure of the system.

6 Q. So, sir, in your last answer, there were --
7 correct me if I'm wrong, but I think four numbers
8 that are shown in figure 3 that you didn't mention.
9 And I think those are 300, 322, 326, and 324; is
10 that right.

11 A. I think that's right.

12 Q. And do you understand that 300 generally
13 identifies the electronic device?

14 A. Yes, the whole thing.

15 Q. And then 322 and 324 are leads; correct?

16 A. Yeah, these are described as leads. I'm in
17 column 8, around line 20. These leads can include
18 conductive pads.

19 Q. And 326 is also a lead; is that right?

20 A. It's described in line 40, 41 as an
21 additional lead 326 that's embedded in or behind the
22 display.

1 Q. So why did you exclude the three leads from
2 the enclosure shown in figure 3?

3 A. So reading further into the claim, you know,
4 it says the heart sensor comprising a first lead
5 that comprising a first pad that is embedded in a
6 first portion of the enclosure. To me, I think of
7 these elements, these pads and leads as embedded in
8 the enclosure. And, therefore, they're described as
9 elements embedded in and not the enclosure itself.

10 Q. So setting aside the claim language for a
11 moment and just looking at figure 3, what allows
12 you -- or when you formed your opinions, how did you
13 decide whether part of a device is a lead or whether
14 it's part of an enclosure?

15 A. So I'm sorry this is taking -- I haven't --
16 it's -- to me, it had always been fairly obvious
17 where the leads were, as described in the patent,
18 and what the elements of the enclosure were. So the
19 list I gave earlier, which was, I think, pretty much
20 everything in figure 3 except for the leads, that
21 seems to me to be the enclosure. If I just consider
22 those elements alone, they enclose the system, the

1 device.

2 Q. So what I'm getting at is, is that the plain
3 and ordinary meaning that you applied when analyzing
4 an enclosure? Is it -- well, withdrawn.

5 Are you saying that the enclosure is
6 anything that encloses the system but is not a lead?

7 A. Well, as I read the first claim, it
8 describes a first lead comprising a first pad that
9 is embedded in the first portion of the enclosure.
10 And my understanding and further described in the
11 claim construction section in my report identifies
12 the, according to the structure in the claim, the
13 pad and the enclosure are two distinct items. They
14 don't overlap.

15 An element of any prior art example has to
16 map separately to those elements. So I think of a
17 lead and a pad as things that may be embedded in the
18 enclosure. That means they're distinct. They're
19 not the enclosure. They're embedded in the
20 enclosure.

21 Q. Fair enough.

22 And I understand, sir, that you believe that

1 the enclosure is different from the lead; is that
2 correct?

3 A. As I read the structure of the claim, yes,
4 that's correct.

5 Q. And the enclosure is something different
6 from the pad; is that correct?

7 A. Yeah. The claim says the first pad is
8 embedded in a portion of the enclosure. The first
9 portion. And a second pad later on is embedded in a
10 second portion of the enclosure. So there's a pad,
11 there's a portion of the enclosure. They're two
12 distinct elements.

13 Q. So without referring to the lead or the pad,
14 are you able to describe what the plain and ordinary
15 meaning of enclosure is?

16 A. It's a structure that encloses. I'm not
17 prepared to offer a more detailed and precise
18 description, but I think one of ordinary skill in
19 the art would understand looking at, for example,
20 figure 3 that the elements I identified are elements
21 of the enclosure.

22 Q. Does the plain and ordinary meaning of

1 enclosure require the use of any particular kinds of
2 material?

3 A. You want to talk about within the context of
4 the '257 patent or, you know, I could say the porch
5 I'm sitting in is an enclosure and it's made of wood
6 and glass and other things. I don't think you
7 really care for that. In the context of the '257
8 patent?

9 Q. Yes, sir. Yeah.

10 In the context of the '257 patent, does the
11 plain and ordinary meaning of enclosure require the
12 use of any particular materials?

13 A. So I don't believe the '257 patent requires
14 any particular material for the enclosure. There
15 are sections in column 2 near the bottom and near
16 the top of column 3 that recite some example
17 materials that could be included in the enclosure.
18 Steel and aluminum, for example. But there's
19 nothing here that says the enclosure must consist of
20 steel or aluminum.

21 Q. When you formed your opinions in the context
22 of the '257 patent, did you understand the plain and

1 ordinary meaning of enclosure to exclude any certain
2 kinds of materials?

3 A. I hadn't really thought about it. I can
4 imagine if pressed that there could be some poor
5 choices given that the enclosure is intended to
6 perform its function through the life of the
7 product. So I might exclude things that would
8 decompose or fall away on the time scale of the life
9 of a product. Looking out in the yard in front of
10 me, you know, leaves, grass, dirt, I would exclude
11 those, for example.

12 Q. So, sir, we can move on to element 1.B next.

13 A. Okay.

14 Q. That recites, [As read] A heart sensor
15 configured to detect the user's cardiac signal, the
16 heart sensor comprising.

17 Did I read that right?

18 A. Yes, I believe so.

19 Q. There, again, it uses the word "comprising."

20 Do you understand the word "comprising" to
21 mean the same thing that you mentioned earlier?

22 A. Yes, I believe so.

1 Q. Let's move on to element 1.C.1.

2 So that recites, [As read] A first lead
3 comprising a first pad that is embedded in a first
4 portion of the enclosure.

5 Did I read that correctly?

6 A. Yes, I believe so.

7 Q. When you formed your opinions on
8 element 1.C.1, did you apply the plain and ordinary
9 meaning?

10 A. I did. And that's discussed in my April
11 report, I think somewhere around paragraph -- there
12 we go -- paragraph 36 and beyond. I say, [As read]
13 In my opinion, these elements of Claim 1 should be
14 given their plain and ordinary meaning. And I also
15 believe that the claim -- these claims require
16 precisely what they state, that the first pad and
17 the first portion of the enclosure are distinct
18 components and that the first pad is both embedded
19 in the first portion of the enclosure and positioned
20 underneath the exterior surface of the first portion
21 of the enclosure.

22 So to be sure, did I read that at a suitable

1 pace for Tiffany?

2 COURT REPORTER: Yes, thank you.

3 A. I also noticed there's a typo in the report.
4 There's a word, should be first pad and it is
5 actually written as fist pad. The letter R is
6 missing, but I think we all understand what was
7 intended there. Sorry for the typo.

8 Q. So I'd like to talk about the word "lead."
9 When you formed your opinions in the context of the
10 '257 patent, what plain and ordinary meaning did you
11 apply to the term "lead"?

12 A. So relying on the language in the patent,
13 column 8, around line 10, the heart sensor can
14 include leads for detecting the user's heart
15 activity. So leads are elements that detect heart
16 activity that comprise pad and presumably a wire
17 from the pad to the electronics inside the system.
18 So that might be, for example, in figure 4, figure
19 4A, item 422 would be a pad. Item 424 would be the
20 wire. I think it's -- let's see what word it uses.
21 424. It's called a connector in the patent, but
22 it's like a wire in this case that brings the

1 electrical signal from the pad to the electronics
2 inside the system. So I would understand the lead
3 detects the signal, and it includes a pad and that
4 connector or wire, at least.

5 Sorry.

6 Q. When you formed your opinions, what plain
7 and ordinary meaning did you apply to the term
8 "pad"?

9 A. Again, I think referring to the
10 specification and to the claim, the pad is an
11 element of the lead and it's configured to detect
12 the electrical signal of the user's cardiac signal,
13 so it's a conductive element.

14 Q. When you formed your opinions about a pad,
15 how conductive did you understand that it has to
16 be -- well, withdrawn. Let me try to ask it a
17 better way.

18 So you said that the pad is a conductive
19 element; correct?

20 A. Uh-huh.

21 Q. So how conductive does a structure need to
22 be to be considered a pad?

1 A. So I think as the claim describes, that is
2 how the pad would be configured to detect the first
3 electrical signal of the user's cardiac signal via
4 the user's skin contact with the exterior surface of
5 the first portion of the enclosure.

6 Q. Does the plain and ordinary meaning of pad
7 exclude the use of any types of materials?

8 A. Again, I think, you know, leaves, dirt, and
9 grass would be a poor choice sitting out here in my
10 yard. You want the materials to have sufficient
11 electrical conductivity to be capable of detecting
12 the first electrical signal of the user's cardiac
13 signal via the user's skin's contact with the
14 exterior surface of the first portion of the
15 enclosure.

16 Q. By itself, though, does the word "pad," if
17 given its plain and ordinary meaning, exclude any
18 types of materials?

19 A. I think it would exclude materials that are
20 generally regarded as insulators.

21 Q. Does the plain and ordinary meaning of pad
22 suggest any type of physical structure?

1 A. I think the examples shown in the patent,
2 for example, figure 4, show a pad, for example, item
3 472 in figure 4B, as a curved element positioned in
4 contact with the interior curved surface of the
5 bezel. I think the word generally invokes something
6 that is flattish, maybe, you know, so not spherical,
7 but something that has one or two dimensions that
8 are fairly large and a third dimension that is
9 relatively less, such as shown here in figure 4B.

10 Q. So when you formed your opinions and you
11 were trying to determine whether something is a pad
12 or not, how flat did it have to be to qualify as a
13 pad?

14 A. So element 472 in figure 4B is not flat. So
15 I mean, if I use the word -- did I use the word
16 "flat" in my prior answer?

17 Q. I believe the word you used was flattish and
18 I was trying to use that same word.

19 A. Okay. Yeah, you know, a picture is worth a
20 thousand words. I think element 472 in figure 4B is
21 a pad. It's -- I wouldn't call it flat, but it's
22 curved, but a fairly thin, curved section relative

1 to its lateral dimensions. The thickness is
2 relatively less than the lateral dimensions.

3 Q. Can you identify any structures that
4 would -- well, withdrawn.

5 When you formed your opinions and you were
6 trying to identify a pad, how did you decide what
7 counts as a pad and what doesn't count as a pad?

8 A. Well, I think at least, for example, the pad
9 would have to be an element of a lead that's used
10 for detecting electrical signals of the user's
11 cardiac signal.

12 Q. Was there anything else that you helped you
13 decide what counts as a pad and what doesn't count
14 as a pad?

15 A. I looked at the figures of the '257 patent.
16 It describes various elements as pads. Element 422,
17 for example, I believe is described as a pad.
18 Obviously, as I mentioned earlier, 472 is a pad.
19 And leads 322 and 324 in figure 3 include the pads,
20 as shown on figure 1 -- sorry -- figure 3.

21 I think in general, the pad is the element
22 of a lead that's configured to detect the first

1 electrical signal of the heart -- of the user's
2 cardiac signal.

3 Q. So let's look back at figure 4B, please.

4 Do you understand that 472 is the pad?

5 A. Yes.

6 Q. And 460 is the bezel?

7 A. Yes.

8 Q. Is the bezel 460 part of the enclosure?

9 A. I believe so, yes.

10 Q. And why is that?

11 A. It's one element of the collection of items
12 that encloses the device.

13 Q. In the context of the '257 patent, can the
14 bezel or the enclosure be made of a conductive
15 material?

16 And if it's helpful, sir, I'll point you to
17 column 2 starting around line 45.

18 A. Yeah, I was certainly way past that.

19 Q. Just to restate the question so that you can
20 think of it while you're reading, my question was in
21 the context of the '257 patent, can the bezel or the
22 enclosure be made of a conductive material?

1 A. So I believe the answer is yes, it can be
2 conductive.

3 Q. So going back to figure 4B, I believe you've
4 already explained that the pad 472 is also made of a
5 conductive material; correct?

6 A. Yes.

7 Q. So in other words, the structure shown in
8 figure 4B can have a conductive material on top of a
9 conductive material; correct?

10 A. Yes, with the, you know, additional thought
11 that the value of conductivity can range over a very
12 wide range of potential values of that parameter.
13 There are materials which are poor conductors but
14 are still conductors. And there's materials that
15 are excellent conductors that are considered to be
16 electrical conductors. So one of ordinary skill
17 would consider the actual values of the conductivity
18 and the dimensions of the object in making decisions
19 about the selection of the elements of the design in
20 figure 4B.

21 Q. Does the -- withdrawn.

22 When you formed your opinions with respect

1 to the word "pad," did you understand the plain and
2 ordinary meaning to exclude certain values of
3 conductance?

4 A. So no, I didn't make a list of materials'
5 conductivities and rank them and draw boundary. And
6 maybe the point here is that the design depends on
7 the conductance of the material but also on the
8 dimensions. And that success in configuring a pad
9 so that it can detect the first cardiac -- the first
10 electrical signal of the user's cardiac signal
11 depends on both the choice of the materials
12 properties of all of these elements, as well as
13 their dimensions. And, therefore, one combines
14 those parameters to determine success. And there's
15 a range of acceptable values that can be made to
16 work.

17 Q. So when you performed your analysis in this
18 proceeding, did you understand that a pad must have
19 a different conductance from a bezel or enclosure?

20 A. So there's a -- it's hard to give an
21 absolute yes-or-no answer because it depends on
22 other elements of the design. So, for example, in

1 the '257 patent, in column 9, it describes
2 arrangements of the pad and the bezel such as are
3 useful for detecting the heart signal without having
4 the signal propagate all the way around the bezel to
5 other electrodes or pads.

6 So, for example, starting -- let's see. I
7 don't want to read the whole paragraph -- around
8 line 40, [As read] If the electrical conductivity
9 and size of the bezel 460 and the strength or
10 characteristics of the cardiac signal provided by
11 the user and detected by the heart sensor are
12 adapted such that the signal can be transmitted
13 along short distances in the bezel, then lead 470 of
14 the heart -- 472 of the heart sensor can be
15 positioned against the back surface of the bezel.

16 And then skipping a few sentences, [As read]
17 The short thickness of bezel can allow electrical
18 signals to propagate from the user to the outer
19 surface of the bezel, through the bezel and into the
20 lead, which may, in turn, transmit the signal to a
21 processor using connector 474.

22 And the whole understanding of this

1 paragraph and what a person of ordinary skill would
2 understand is that the combination of the choice of
3 thicknesses and materials properties is what must be
4 considered in order to guarantee what you want,
5 which is electrical signal transmission from the
6 outside of the device through the bezel to the pad
7 and not electrical transmission along the bezel all
8 the way around the device to the other pads. And
9 the choices that one makes in this design are based
10 on the materials properties of the material of the
11 bezel, the dimensions of the bezel, and the
12 materials properties of the pad.

13 MR. BISENIUS: Counsel, we've been going for
14 about an hour and a half now. Would now be an okay
15 time for a break?

16 MR. FERNANDO: Sure. If I can just ask a
17 few follow-up questions on that, Patrick, absolutely
18 we can take a break.

19 THE WITNESS: I'm okay with that.

20 BY MR. FERNANDO:

21 Q. So, Dr. Kenny, right there you were talking
22 about disclosure that's in column 9, between

1 lines 35 and around 57; right?

2 A. That's right.

3 Q. That paragraph?

4 A. Yes.

5 Q. Do you understand that paragraph to talk
6 about a situation where the pad and the bezel are
7 made of different materials?

8 A. So that paragraph doesn't explicitly
9 differentiate the materials of the pad and the
10 bezel. I think one of ordinary skill would
11 appreciate the tradeoffs in the design that one must
12 achieve are easier to manage if the pad has a
13 relatively high conductivity. If it's a higher
14 conductivity than the bezel, then I think there's
15 some advantages and simplicities, but I don't
16 believe it's an absolute requirement. If the bezel
17 is very thin and the pad is relatively thick, their
18 conductivities can be in the same range, and this
19 product should still function properly.

20 Q. In the context of the '257 patent, is it
21 possible for there to be a pad and an enclosure or
22 bezel that have the same materials in them?

1 Or let me ask it in a better way. So
2 withdrawn.

3 In the context of the '257 patent, can a pad
4 be made of the same material as the enclosure or
5 bezel?

6 A. So column 6, around line 17, it says, [As
7 read] The heart sensor leads could be constructed
8 from any suitable material. In some embodiments,
9 the heart sensor leads can be constructed from a
10 specific material selected for particular conductive
11 properties that permit a more effective transmission
12 of the electrical signals reflecting user's cardiac
13 activity. For example, the heart sensor leads can
14 be constructed from a silver-based compound which
15 can provide superior conductivity relative to other
16 metallic compound, for example, steel or aluminum.
17 In addition, the size and location of the leads can
18 be selected to ensure that sufficient contact is
19 made between the user and the leads for cardiac
20 signals to be detected.

21 So this is, again, narrative describing the
22 design space, that the heart sensor leads can be

1 constructed from materials that have superior
2 conductivity relative to the other elements of the
3 system, and that makes the design relatively easy.
4 I think, as the conductivities approach each other
5 in value, then the geometry becomes more important.

6 Q. So when you formed your opinions, did you
7 understand that, in the context of the '257 patent,
8 pad can made be of the same material as the
9 enclosure or the bezel?

10 A. Well, again, I think the context here is one
11 is attempting to pull signals from the user into
12 this system and measure them accurately. I think
13 one of ordinary skill would be motivated to select
14 materials that make that job easier.

15 Could one make a bezel and a pad out of the
16 same material? I suppose one could do that. I
17 don't know for sure that it would work very well.
18 That would depend on other design parameters. And I
19 think, in general, one of ordinary skill in the art
20 would see the advantages of selecting a material for
21 the pad that has superior conductivity relative to
22 the other metallic compounds of the system.

1 I think it's a -- this is in this kind of
2 design space where there's tradeoffs and not
3 absolute, you know, "if you choose this material, it
4 will work, if you choose that material, it won't
5 work," because it's a combination of the materials
6 choice and other elements of the design and,
7 frankly, the specifications and parameters that one
8 is applying in order to be sure that the signals
9 from the outside can be captured and measured
10 accurately on the inside.

11 So I know it's a long-winded answer. As an
12 engineer one knows that you can often combine things
13 in ways that are inoptimal and they still can be
14 made to work, but for systems like this,
15 particularly if you're attempting to extract medical
16 information, physiological information about the
17 user, I think there's a motivation to design systems
18 where you have a high margin for success and that,
19 therefore, you'd be motivated to follow this advice
20 in column 6, that the leads, the pads should be
21 constructed from materials that have superior
22 conductivity where possible.

1 But all of this does depend on the rest of
2 the design, the geometry, the application. And, for
3 example, the prior art references, which I assume
4 we'll get to a little later, both Markel and Nissila
5 and even at least one of the other references that
6 Dr. Berger cites in his background section, describe
7 the use of conductive plastics as having sufficient
8 conductivity to function in the role of capturing
9 these heart signals.

10 So, I mean, the real answer is that there's
11 a wide range of parameters and materials properties
12 that can work in these roles and that their success
13 depends on those parameters and on the other aspects
14 of the design.

15 MR. FERNANDO: All right. If you're ready,
16 Dr. Kenny, I think now is an okay time for a break.

17 THE WITNESS: Works for me. It's -- my
18 clock says 10:30. Should we say 10:40 to come back?

19 MR. FERNANDO: That works for me. We can go
20 off the record.

21 THE WITNESS: Thank you.

22 (A short break was had.)

1 BY MR. FERNANDO:

2 Q. Dr. Kenny, let's go back to figure 3,
3 please, of the '257 patent. So earlier we talked
4 about how 310 is the bezel and 322 are the leads;
5 correct?

6 A. 322, yes, is part of a lead, yes.

7 Q. Sorry. Let me be complete.

8 So 322, 326, and 324 are all leads; correct?

9 A. Yes, they're all portions of leads, that's
10 correct.

11 Q. And why do you say that they're portions of
12 leads and not just leads?

13 A. So the lead, including the pad, is
14 configured to detect the electrical signal of the
15 user's cardiac signal and its, you know, coupled to
16 the processor via a wire or a connector. I think of
17 a lead as comprising the pad and the connector, as
18 shown, for example, in figure 4B.

19 Q. So then, in figure 3, the white box
20 identified by each of 322, 326, and 324, is that the
21 pad in that picture?

22 A. I think that's fair to say. The

1 specification describes 322 and 324 as leads, which
2 can include conductive pads. And I think one would
3 understand the lead also includes a connector not
4 shown in figure 3. So there's -- the lead includes
5 those elements and connectors and perhaps other
6 things.

7 Q. So is it your understanding that, in
8 figure 3, the components 322, 324, and 326 are
9 conductive pads?

10 A. Yeah, I -- the specification describes 322,
11 324, and 326 as leads. Leads comprise pads, as
12 described in the claims. And I think one of
13 ordinary skill looking at figure 3 would understand
14 that these elements, as shown in these rectangular
15 boxes in figure 3, are representing the location of
16 the pads.

17 Q. I think you explained earlier that the
18 bezel 310 can also be made of conductive material;
19 correct?

20 A. Yeah, I believe so. That was from column 3,
21 near the top, that the enclosure can be constructed
22 from steel and aluminum, for example.

1 Q. So is it possible for the bezel to conduct
2 an electrical signal from the skin from a user?

3 A. It would depend on where it's being
4 conducted to.

5 Q. So if, on figure 3, a user were to touch the
6 bezel right above the box labeled 322 and a user
7 were to touch the bezel right above the box
8 labeled 324, is it possible for the bezel to conduct
9 a signal from the user?

10 A. It would be easier if we were in person.
11 When you say "right above," do you mean a little bit
12 upwards on the page from those electrodes?

13 Q. I do. If the long side of the page is the
14 Y-axis, then, you know, higher on the Y-axis.

15 A. It's possible. It would depend on a lot of
16 the details of what we're talking about and how much
17 signal we were hoping to see. It might also depend
18 on whether there is electrical contact between these
19 elements 322, 324, and the bezel or whether there's
20 some intervening insulating material.

21 Q. If there were no intervening insulating
22 material, is it possible for a user to contact above

1 322 and above 324 and have their electrical signal
2 be conducted?

3 A. So if -- if 32 -- if the bezel is, say, for
4 example, stainless steel, and the electrodes are a
5 suitably conductive material, 322, 324, the pads
6 associated with this illustration, and they are
7 electrically connected to one another, then there
8 will be some electrical conduction of the signal.
9 The amount of signal and how much that signal
10 propagates the quality of it, the amplitude, et
11 cetera, would depend on the distance, the thickness
12 of the steel, et cetera.

13 But, you know, just speaking as a physicist,
14 if those items are electrically in contact, there
15 will be some propagation of some electrical signal.
16 And if your goal is to measure the cardiac signal,
17 you'll want to be sure that the size is sufficient
18 to provide useful, high quality detection. And that
19 will depend on the distances and dimensions and
20 properties.

21 Q. When you say "there will be propagation of
22 some electrical signal," do you mean that there will

1 be propagation from the bezel to the leads?

2 A. If the bezel and the leads are electrically
3 connected, there's no intervening insulating
4 material and the bezel's dimensions are sufficient
5 to allow that signal to propagate without electrical
6 loss from resistance, there can be some signal that
7 gets to the leads, yes.

8 Q. So then in that situation, what would be the
9 difference between what you're calling bezel and
10 what you're calling leads?

11 A. The lead is intended to detect the
12 electrical signal, the cardiac signal of the
13 patient. The design intent, in a case like this, is
14 to provide the electrodes or the pads such that the
15 quality of the signal is sufficient to determine the
16 cardiac signals of interest. And, you know, the pad
17 is basically the element that is configured to
18 detect that electrical signal.

19 And one of ordinary skill would design the
20 materials and dimensions so as to provide a high
21 quality contact from the user to the lead, and
22 therefore directly to the electrical signal.

1 Q. So in the situation we just described, the
2 bezel is also detecting some of the electrical
3 signal from the user; isn't that right?

4 A. It's potentially capable of detecting some
5 amount of electrical signal. The size and quality
6 of that signal would depend upon the dimensions of
7 the structures involved.

8 I think one of ordinary skill in the art,
9 looking at this patent, would appreciate that the
10 design would -- is intended to provide the pads as
11 the primary pathway for the capture of high quality
12 electrical signals from the user to the electronics
13 and that the rest of the enclosure, while it might
14 capture some small amount of signal, it's not
15 intended as the pathway for capturing of the high
16 quality signal, that that pathway is into the leads,
17 the pads in this case.

18 Q. When you formed your opinions in this
19 proceeding, did you understand the design intent to
20 affect whether a component is a pad versus a bezel
21 or an electrode?

22 A. Just reciting from the claims, the pad is

1 the element that is configured to detect the cardiac
2 signal of the user's cardiac -- sorry. Let me start
3 again.

4 The pad is the element that's configured to
5 detect a first electrical signal of the user's
6 cardiac signal via the user's skin contact with the
7 exterior surface of the first portion of the
8 enclosure in Claim 1. So my understanding of that
9 is that the pad is, in the case of Claim 1, embedded
10 within the enclosure underneath the exterior surface
11 of the first portion of the enclosure. And the
12 intent is for the signal propagation from the user
13 through that exterior portion of the enclosure to
14 the pad is the primary means for the high quality
15 electrical signal to be captured.

16 Q. So could you turn to figure 4B, please?

17 A. Sure.

18 Q. So in figure 4B, I think we've talked about
19 it before, but the pad is underneath the bezel or
20 enclosure; right?

21 A. That's correct. And as recited in the
22 claim, that pad is configured to detect a first

1 electrical signal of the user's cardiac signal via
2 the user's skin's contact with the exterior surface
3 of the first portion of the enclosure. So I read
4 that to be the user's skin is in contact with the
5 outside of item 460, the bezel. And the pad is
6 located underneath that item. That's pad number
7 472. And that it's configured by its dimensions and
8 location to capture that first electrical signal
9 from the user.

10 Q. But then in figure 4B, why isn't the bezel
11 or enclosure also configured to detect the
12 electrical signal of the user?

13 A. So I think it's clear the pad is what
14 detects the signal. The signal propagates from the
15 user to the pad via contact with the exterior
16 surface of the first portion of the enclosure.

17 Q. If the bezel is conductive and the pad is
18 conductive, then why is the bezel not also
19 configured to detect the electrical signal?

20 A. I'm thinking of how to give a clean and
21 simple answer that doesn't get into a lot of
22 electrostatics and electrodynamics of electric field

1 lines and so on.

2 You know, the objective of the pad, as
3 described in the claims, and I think as would be
4 understood by one of ordinary skill is that it's
5 configured by selection of materials and dimensions
6 and location to be the element that detects the
7 first electrical signal of the user's cardiac
8 signal. And that signal propagates via the bezel,
9 but my understanding of what the intent here is, and
10 I think what one of ordinary skill would understand
11 is that the bezel is something of a conduit from the
12 outside to the inside and that the pad, 472, is what
13 actually captures a high quality electrical signal
14 that can be carried by the connector, 474, to the
15 electronics.

16 Q. I do want to make sure that I get a complete
17 answer, so if you need to explain electrostatics and
18 electrodynamics of the electric field lines, then
19 please feel free to.

20 A. I think the higher level description I've
21 given is what one of ordinary skill in the art would
22 appreciate as taking place here, that the pad, 472,

1 in this case, is configured to capture -- I should
2 say detect the first electrical signal of the user's
3 cardiac signal and that it achieves that function
4 through its materials, its dimensions, its location,
5 its shape, perhaps. And that it is the element that
6 is receiving the user's electrical signal, which
7 propagates through item 460, the bezel, through the
8 user's contact with the exterior surface of the
9 first portion of the enclosure.

10 Q. I think you mentioned the objective of the
11 pad and earlier you mentioned design intent.

12 Do you think that -- withdrawn.

13 When you were analyzing the claims in this
14 proceeding, did you understand the objective of the
15 pad or the design intent of the pad to affect
16 whether -- well, withdrawn.

17 Let me try to ask it more neatly.

18 So when you formed your opinions in this
19 proceeding, did you understand that design intent or
20 objectives affect whether a component is a pad
21 versus part of the enclosure?

22 A. I think as described in the claim, the pad

1 is the element that's configured to detect the
2 cardiac signal of the user's -- sorry. Let me start
3 that again.

4 The pad is the element configured to detect
5 a first electrical signal of the user's cardiac
6 signal and that that takes place via this user's
7 skin's contact with the exterior surface of the
8 first portion of the enclosure.

9 I think these roles and these elements are
10 clearly distinguished. The pad detects the signal.
11 The enclosure encloses the system. And the signal
12 arrives at the pad via the user's skin's contact
13 with the exterior surface of that first portion of
14 the enclosure.

15 Q. Right there were you referring to the claim
16 language in element 1.E? Oh, sorry. Well, please
17 go ahead and answer.

18 A. If I look at your table, it's 1.C.3, which
19 says, [As read] Wherein the first pad is configured
20 to detect a first cardiac signal of the user's -- I
21 keep doing this. Sorry. Let me start again.

22 [As read] The first pad is configured to

1 detect a first electrical signal of the user's
2 cardiac signal via the user's skin's contact with
3 the exterior surface of the first portion of the
4 enclosure.

5 Q. So within element 1.C.3, did you understand
6 the plain and ordinary meaning of the configured to
7 claim language to involve some consideration of
8 design objectives or design intent?

9 A. Well, I think the intent is clearly stated,
10 the intent is to detect the first electrical signal.
11 So the configuration is -- one of ordinary skill
12 would understand the objective is to configure the
13 first pad so that it's capable of performing that
14 role.

15 Q. So with respect to figure 4.4B, is it your
16 view that the bezel, 460, is different from the pad
17 because -- withdrawn.

18 On element 1.C.3, why do you think that
19 intent is clearly stated?

20 A. I think it's just literal reading of the
21 language. The first pad is configured to detect the
22 first electrical signal.

1 Q. So if there's -- sorry. Go ahead.

2 A. It just means what it says, I think.

3 Q. So if there's a structure that detects --
4 that is intended by the designer to detect an
5 electrical signal, that can be a pad; correct?

6 A. It can be a pad if it's configured to detect
7 the signal. If the designer intended for that to be
8 the case but made poor choices such that it fails to
9 detect that signal, then I would say that it doesn't
10 meet the limitation of what's required to be a pad.

11 I hope one of ordinary skill in the art is
12 prepared to make the right choices and perhaps do
13 the right experiments, if needed, but it's a first
14 pad if it is configured to detect a signal.
15 Hopefully, that's consistent with the intent.

16 Q. So let's say alternatively that there's a
17 structure that can detect an electrical signal but
18 that was not intended by the designer.

19 Could that component be a pad?

20 A. I think what we're getting stuck on here is
21 what I think is obvious in this entire context. The
22 goal is to reliably and clearly detect these

1 signals. It doesn't -- the claim doesn't say
2 reliably and clearly, but I think that's what one of
3 ordinary skill would understand. Otherwise, there's
4 no point to this entire product or even this
5 conversation.

6 And that the objective is to configure the
7 pad to provide that quality of detection of the
8 first electrical signal and whereas there could be
9 other elements in the system that if you connected a
10 wire to them, they might -- it might detect a weak
11 signal or an inconsistent signal.

12 I think the pad, one of ordinary skill
13 looking at this patent would understand the pad is
14 the element that is configured to detect that first
15 electrical signal, you know, in a reliable and clean
16 way because it's shown here in the patent. This is
17 the element that's in the right position. It's
18 located close enough to the surface, close enough to
19 the user's skin so that the electrical signal can
20 propagate through that exterior portion of the
21 enclosure to the pad and be detected as a clean
22 electrical signal.

1 What I don't want to get lost in is, you
2 know, the weak electrical signals can be detected --
3 you know, they're available for detection, I should
4 say. If you have this device sitting on the table
5 in front of you, the cardiac signals from your body
6 produce electric fields that propagate through free
7 space. And some very, very small amount of that
8 signal would arrive at some elements of this device.
9 And the point here is that everyone understands
10 we're talking about a reliable detection of a signal
11 that can be used to make determinations about the
12 patient's physiological parameters. And that, in
13 this regard, being configured to detect that signal,
14 to me, means what we see in figure 4B. We see a pad
15 in a location where it is configured to detect the
16 first signal.

17 Q. And I'm just trying to, I guess, understand
18 your interpretation of figure 4B a little bit
19 better.

20 So correct me if I'm wrong, but it sounds
21 like you agree that the pad 472 is configured to
22 detect an electrical signal; right?

1 A. It's configured to detect the first
2 electrical signal of the user's cardiac signal.

3 Q. And that signal is going through the bezel
4 460; correct?

5 A. It propagates from the outside surface of
6 the enclosure where the user's skin is in contact
7 and propagates to the pad number 472.

8 Q. So why is it, if the -- withdrawn.

9 If the electrical signal is going through
10 the bezel or enclosure 460 and through the pad 472,
11 why is it that you think that the pad is configured
12 to detect the electrical signal but not the bezel?

13 A. So from reading from column 6, around
14 line 17, [As read] Heart sensor leads can be
15 constructed from any suitable material. In some
16 embodiments, the heart sensor leads can be
17 constructed from a specific material selected for
18 particular conductive properties that permit a more
19 effective transmission of the electrical signals
20 reflecting the user's cardiac activity. For
21 example, the heart sensor leads can be constructed
22 from a silver-based compound which can provide

1 superior conductivity relative to other metallic
2 compounds, for example, steel or aluminum. In
3 addition, the size and location of the leads can be
4 selected to ensure that sufficient contact is made
5 between the user and the leads for the cardiac
6 signals to be detected.

7 Q. So I suppose I'm not quite understanding,
8 Dr. Kenny, how that answers my question, but maybe,
9 if you look at line 33, that might help. So line 33
10 says, [As read] The pad or the extended area can
11 then be coupled to a wire or other connector for
12 providing cardiac signals to a processor for
13 processing. Then, as another example, the entire
14 portion of the electronic device enclosure (e.g., a
15 portion of the bezel or housing) can serve as a lead
16 for the heart sensor.

17 So do you think that the disclosure in
18 column 6, line 33 through 36, indicates that part of
19 the enclosure can be configured to detect an
20 electrical signal?

21 A. I think you read -- thank you for reading
22 that section. The sentence that begins with, [As

1 read] As another example, an entire portion of an
2 electronic device enclosure can serve as a lead for
3 the heart sensor.

4 So that would be possible. It's not the
5 embodiment that's described in Claim 1, but in a
6 general sense, yes.

7 Q. So is it, when you provided your analysis,
8 did you understand that Claim 1 does not encompass
9 an embodiment in which part of the electronic device
10 enclosure, e.g., a portion of a bezel or housing,
11 can serve as a lead for the heart sensor?

12 A. Claim 1 -- sorry. Let me make sure I get to
13 the right page.

14 Claim 1 requires that the lead, which
15 includes the pad, comprising a first pad, is
16 embedded in the first portion of the enclosure
17 wherein an exterior surface of the enclosure
18 comprises an exterior surface of the first portion
19 whereas the first pad is positioned underneath the
20 exterior surface of the first portion and where the
21 electrical signal is detected via the user's skin
22 contact with the exterior surface of the first

1 portion of the enclosure. So Claim 1 distinguishes
2 portions of the enclosure from the pad.

3 Q. So when you provided your opinions, did you
4 understand that Claim 1 does not cover structures
5 where an enclosure is configured to detect an
6 electrical signal of a user?

7 A. Claim 1 requires that the detection -- the
8 first pad is configured to detect the electrical
9 signal of the user's cardiac signal via the user's
10 skin contact with the exterior portion -- the
11 exterior surface of the first portion of the
12 enclosure. So in that regard, Claim 1 distinguishes
13 portions of the enclosure from the pad, and the pad
14 is the element that is configured to detect the
15 electrical signals.

16 Q. If the enclosure is conductive and the pad
17 is conductive, in the context of element 1.C.2, then
18 how can it be that the enclosure is not configured
19 to detect an electrical signal but the pad is
20 configured to detect an electrical signal?

21 A. This --

22 MR. BISENIUS: Objection. Asked and

1 answered.

2 A. Yeah, I mean, this gets to the discussion we
3 had a few moments ago about the materials properties
4 and dimensions and configuration of these elements
5 with respect to each other. You know, as explained
6 in the first part of that section on column 6, the
7 heart sensor leads can be constructed from a
8 silver-based compound, which can provide superior
9 conductivity relative to other metallic compound.
10 In addition, the size and location of the leads can
11 be selected to ensure that sufficient contact is
12 made between the user and the leads.

13 So the presence of an intervening layer,
14 which has some electrical conductivity, doesn't
15 disrupt this description of the pad and the leads
16 being the element that is configured to detect the
17 cardiac signal.

18 Q. If you have a conductive enclosure, in what
19 situations would you need a conductive pad
20 underneath it?

21 A. You know, it's hard to -- I mean, these
22 are -- you're asking me questions that have

1 quantitative answers that depend on dimensions and
2 properties and equations. I can give you a general
3 sense of where I think the answer would lie.

4 If the enclosure was made of stainless steel
5 and it was thin and the underlying pad was made of a
6 silver-based compound and it was perhaps thicker,
7 then the pad would be the element that is configured
8 to capture and detect that electrical signal. I
9 think one of ordinary skill in the art would
10 understand that the thin steel enclosure is a
11 pathway for the signal but that the detection takes
12 place at the element which has the superior
13 electrical conductivity.

14 These are all -- again, all of this is
15 relative statements. I'm not giving you exact
16 numbers for what comprises or what constitutes
17 superior or inferior. But the objective here would
18 be to have a pad which is a very good metal
19 conductor, determined by its properties and its size
20 and shape and location, positioned beneath a portion
21 of the housing that the signal propagates through
22 and is detected by the pad.

1 Q. Are you familiar with the term "electrode"?

2 A. Yes. It's mentioned in the prior art
3 references, I believe.

4 Q. As far as you're aware, does the word
5 "electrode" appear anywhere in the '257 patent
6 specification or claims?

7 A. I don't believe so.

8 Q. Would a POSITA have had an understanding of
9 what the term "electrode" means?

10 A. In the context of the other prior art
11 references or?

12 Q. In general, in the art.

13 A. I think the description of the pad in the
14 '257 patent is similar to what I think one of
15 ordinary skill would ascribe to the description of
16 an electrode in this domain.

17 Q. Is it your understanding that the meaning of
18 the word "electrode" can change from one context to
19 another?

20 A. Very broadly, yes. There's an electrode on
21 the roof of my cabin here in Minnesota whose purpose
22 it to capture and divert lightning strikes and carry

1 that to ground. That's an electrode. I think
2 that's different from the electrodes that we're
3 talking about today. But the same word applies.

4 Q. I will say, it looks like a lovely cabin.

5 A. Thank you. Happy to be here.

6 Q. And what -- so you said that the description
7 of the pad in the '257 patent is similar to what one
8 of ordinary skill in the art would ascribe to the
9 description of an electrode. Is it your
10 understanding that, in the context of the '257
11 patent, "pad" means the same thing as "electrode" to
12 a POSITA?

13 A. So I think a POSITA would expect an
14 electrode in this context to be capable of detecting
15 the electrical signals we've been discussing. I
16 think the notion of a pad carries some kind of
17 geometric understanding that it's kind of, as I said
18 earlier, sort of flattish, similar to the structures
19 shown in the illustrations of the '257 patent.
20 Whereas, in a more general context, electrodes could
21 be cylindrical or spherical and not flattish.

22 But I think, aside from that, one of

1 ordinary skill in the art can look at things that
2 are called electrodes in the prior art references
3 and make a judgment as to whether those are
4 equivalent to or whether those anticipate the terms
5 of the '257 patent. And that's been my primary
6 objective in this work, has been looking at the
7 prior art references and the elements in those
8 references and looking to see whether those elements
9 anticipate the claims of the '257.

10 Q. So when you performed your analysis in this
11 proceeding, was it your understanding that the word
12 "electrode" is not enough by itself to tell you
13 whether a prior art reference has a pad or not?

14 A. Well, reading the requirements of Claim 1,
15 the pad in Claim 1 has to be configured to detect
16 the first electrical signal of the user's cardiac
17 signal and that, to meet the other limitations, it
18 must be positioned underneath the exterior surface
19 of the first portion of an enclosure and that the
20 electrical signal reaches the pad via the user's
21 skin's contact with the exterior surface of the
22 first portion of the enclosure. So an electrode

1 might or might not meet those limitations. That's
2 the question I've been asked.

3 Q. Would a POSITA have understood that any
4 electrode includes a pad?

5 A. I don't think the electrode on the roof of
6 my cabin includes a pad. I don't think that's an
7 absolute requirement of an element that you could
8 call an electrode.

9 Q. So when you performed your analysis, did you
10 have to look at more than just the word "electrode"
11 to determine whether a prior art reference disclosed
12 a pad or not?

13 A. So my concern was whether it discloses a
14 first pad that is consistent with the limitations of
15 the first claim. So I was concerned with whether an
16 element of any prior art reference had an element or
17 was configured to detect a first electrical signal
18 of the user's cardiac signal via the user's skin
19 contact with the exterior surface of the first
20 portion and wherein that element is positioned
21 underneath the exterior surface of the first
22 portion. If it meets all those limitations, I'm not

1 sure I care what it was called, as long as it
2 provides that function and meets those limitations,
3 then it either does or doesn't anticipate that
4 element of the claim.

5 Q. So I think there you were reading from parts
6 of elements 1.C.1, 1.C.2, and 1.C.3; correct?

7 A. That's correct. My understanding is that
8 the prior art references need to anticipate these
9 elements of the claim and that anticipation is not
10 dependent on using the exact same jargon. It's more
11 do those elements anticipate -- you know, do they
12 provide these exact features as described in the
13 claim?

14 Q. Okay. And I'm not trying to confuse you,
15 Dr. Kenny, but is it your understanding that
16 AliveCor is -- AliveCor and its experts have some
17 anticipation theories or obviousness theories? I
18 point you to paragraph 22 of your second
19 declaration.

20 A. Thank you. This is where my lack of legal
21 training sometimes gets in my way.

22 So I say in my opinion, thank you for

1 pointing me to this section so we can be clear on
2 the record -- that the Markel reference does not
3 anticipate or render obvious Claims 1 through 22 of
4 the '257 and that Markel, in view of Nissila, does
5 not render obvious Claims 1 to 22 of the '257.
6 Markel in view of Righter does not render obvious
7 Claims 12, 13, and 19 of the '257, and Markel in
8 view of Nissila and Righter does not render obvious
9 the Claims 12, 13 and 19 of the '257.

10 Q. So going back to the claim language, when
11 you analyzed prior art and you saw the word
12 "electrode," did that tell you anything about the
13 position of the first pad in claim elements 1.C.1
14 through 1.C.3?

15 A. The word just by itself?

16 Q. Yes, sir.

17 A. That word by itself wouldn't be sufficient
18 to draw any conclusions about its relationship to
19 the language of the first claim. I would read
20 further, read the full specification around those
21 prior art references, look at the figures, and
22 understand what was being described.

1 Q. Does every -- withdrawn.

2 Would a POSITA have understood that every
3 electrode includes some sort of enclosure?

4 A. I wouldn't expect a POSITA would think any
5 electrode includes an enclosure.

6 Q. Would a POSITA have known that some
7 electrodes could not include an enclosure?

8 A. Maybe -- I just want to be sure I understand
9 your question. So electrodes could be associated
10 with an enclosure or maybe included within an
11 enclosure. I tend to think of the electrode -- I
12 don't think of the electrode including the
13 enclosure. Perhaps maybe the other way around. Is
14 that, I think, what you're asking? Or ... I
15 mean ...

16 Q. I think so.

17 A. I mean, the lightning rod on the roof is
18 attached to the roof of my cabin, which is an
19 enclosure. I wouldn't say the electrode includes
20 the enclosure. But there could be cases where an
21 enclosure includes an electrode, I suppose.

22 Q. Got it.

1 So is that the way that a POSITA would have
2 understood an electrode in the art generally?

3 A. To the extent the art we're talking about
4 devices for measuring user's cardiac signals. These
5 devices generally include an enclosure and perhaps
6 also a thing that you might describe as an electrode
7 in the general art, yes.

8 Q. Just to circle back to earlier, I'm not
9 quite sure that I followed the response, so I just
10 want to make sure I understand.

11 So I think you told me about the
12 relationship between an enclosure and an electrode
13 so far.

14 Would a POSITA have understood that an
15 electrode must include a pad?

16 A. I think there could be electrodes that don't
17 necessarily have a feature that one would describe
18 as a pad.

19 Q. So in those electrodes, what would you call
20 the feature that is configured to detect an
21 electrical signal of a user?

22 A. Really hard to answer that out of context.

1 We could look at some examples of electrodes and
2 decide whether or not there are elements that are
3 intended to capture this electric signal. Maybe
4 some examples from the Markel and Nissila
5 references. That would be possible.

6 I think answering out of that context,
7 it's -- you're putting me in a spot where I'm trying
8 to think of all the possible extrapolations or
9 misunderstandings of any sentence I might provide
10 and just reluctant to create that potential
11 confusion.

12 Q. So is it your understanding that a pad is
13 one term for a feature that is configured to detect
14 an electric signal within an electrode?

15 A. Could you say that again just so I'm sure?

16 Q. Sure.

17 Is it your understanding that pad is one
18 term for a feature that is configured to detect an
19 electrical signal within an electrode?

20 A. I think in general that could be true.
21 Again, I think to give a clear definitive answer
22 we'd want to look at a particular context and be

1 clear about what's being called an electrode and
2 what is perhaps the feature being called a pad and
3 maybe what is the lead and where's the enclosure and
4 all the other elements of the claim that are
5 important to keep in mind.

6 Q. As you sit here today, can you recall any
7 other terms or names, other than pad, for features
8 that are configured to detect an electrical signal
9 within an electrode?

10 A. Going through my mental electronic element
11 dictionary. I mean, there's none that are clearly
12 prominent. Some might use the word "terminal." I
13 kind of doubt it in this context. But if I look
14 through a larger collection of references at the
15 time of this patent, I might find a few other words
16 used in the jargon. I think electrode is probably
17 common, lead is common, pad may be common. There
18 could be others that are less and less common.
19 Contact. You know, yeah, there could be words that
20 might show up depending on the background of
21 individuals in this field.

22 Q. Looking back at element 1.C.1, it also

1 recites -- that claim language also recites a first
2 portion of the enclosure.

3 Do you see that claim language?

4 A. Yes.

5 Q. And later on in the claim, sometimes it
6 refers to the first portion.

7 Do you see that in, for example, element
8 1.C.2?

9 A. Yes.

10 Q. When you performed your analysis, did you
11 understand the first portion to refer to a first
12 portion of the enclosure?

13 A. So element 1.C.2 says, "The first pad is
14 positioned underneath the exterior surface of the
15 first portion." And 1.C.3 says, "The signal is
16 detected via the user's skin contact with the
17 exterior surface of the first portion of the
18 enclosure." I think those instances of the first
19 portion in 1.C.2 and 1.C.3 are referring to the
20 element that the -- referring to the first portion
21 mentioned in 1.C.1. Sorry. That's a long-winded
22 version of yes, I think.

1 MR. FERNANDO: I think we can go off the
2 record.

3 (A short break was had.)

4 BY MR. FERNANDO:

5 Q. Good afternoon, Dr. Kenny.

6 A. Good afternoon, Ravi. How you doing?

7 Q. Doing well, thanks. How are you?

8 A. I'm all right. So far so good, I guess.

9 Q. Good.

10 During any of the breaks we've had in the
11 depo so far, have you spoken to anyone?

12 A. No, I'm up here in the middle of nowhere all
13 by myself.

14 Q. Got it.

15 So I'd like to pick back up on element
16 1.C.2, as referenced in the claims appendix.

17 So element 1.C.2 recites, [As read] Wherein
18 an exterior surface of the enclosure comprises an
19 exterior surface of the first portion, wherein, the
20 first pad is positioned underneath the exterior
21 surface of the first portion and.

22 Did I read that correctly?

1 A. Yes, I believe so.

2 Q. And when you formed your opinions in this
3 proceeding, did you apply the plain and ordinary
4 meaning to that claim language?

5 A. Yes, I believe so. It's pretty
6 straightforward on its face.

7 Q. With respect to the phrase "exterior
8 surface," what plain and ordinary meaning did you
9 apply?

10 A. So we're talking about an exterior surface
11 of the first portion of the enclosure, and I think
12 it's pretty plainly the surface that's on the
13 outside.

14 Q. Does the exterior surface refer at all to an
15 exterior surface of the claimed pad?

16 A. It's the -- I think it's clearly not the
17 pad. It's the exterior surface of the enclosure.

18 Q. Can the exterior surface refer to a surface
19 of a lead?

20 A. Not as claimed here. It's the lead includes
21 a pad, which is embedded in the first portion of the
22 enclosure and where it's positioned underneath the

1 exterior surface of the first portion.

2 Q. And is that the plain and ordinary meaning
3 of exterior surface that you applied throughout your
4 analysis?

5 A. Yes, I believe so.

6 Q. This same element 1.C.2 also recites the
7 phrase "positioned underneath."

8 Do you see that?

9 A. Yes.

10 Q. When you formed your opinions, what plain
11 and ordinary meaning did you apply to the phrase
12 "positioned underneath"?

13 A. I think positioned underneath is clear and
14 plain.

15 Q. Does the first pad -- withdrawn.

16 When you formed your opinions, did you
17 interpret the claim as requiring a first pad to be
18 completely positioned underneath the exterior
19 surface of the first portion?

20 A. Could you repeat that one more time just so
21 I'm sure?

22 Q. Of course.

1 When you formed your opinions, did you
2 interpret the claim as requiring a first pad to be
3 completely positioned underneath the exterior
4 surface of the first portion?

5 A. Yes, I believe this claim requires the first
6 pad is positioned underneath, which means there's no
7 portion of the pad that's protruding beyond the
8 first surface, that it's all fully enclosed.

9 Q. There you said "first surface." Did you
10 mean first portion?

11 A. I'm sorry. I meant the exterior surface of
12 the first portion.

13 Q. So if there's any part of a pad that is not
14 underneath the exterior surface of the first
15 portion, is it your interpretation that element
16 1.C.2 is not met?

17 A. Could you read that again? I just want to
18 be sure.

19 Q. Of course.

20 If there's any part of a pad that is not
21 underneath the exterior surface of the first
22 portion, is it your interpretation that element

1 1.C.2 is not met?

2 A. I think that's correct.

3 Frankly, the reason for the pause --
4 apologies -- hadn't really considered all of the
5 boundaries of this claim. And that's why I had to
6 think for a moment about the examples in the
7 specification of the '257.

8 There are no examples in any of the asserted
9 prior art that are even remotely close to the
10 description you've just provided. So I apologize, I
11 hadn't really thought carefully about that.

12 Q. So let's move on to element 1.C.3. That
13 recites, [As read] Wherein the first pad is
14 configured to detect a first electrical signal of
15 the user's cardiac signal via the user's skin's
16 contact with the exterior surface of the first
17 portion of the enclosure.

18 Did I read that correctly?

19 A. I believe so.

20 Q. When you formed your opinions in this
21 proceeding, did you apply plain and ordinary meaning
22 to this claim language?

1 A. I believe so.

2 Q. If a device has a -- withdrawn.

3 In order for a user -- withdrawn.

4 In order for an ECG sensor to meet
5 element 1.C.3, what does a user need to contact?

6 A. Just reading from the claim, the user's skin
7 must be in contact with the exterior surface of the
8 first portion of the enclosure.

9 Q. Can element 1.C.3 be met by a device in
10 which a user can contact part of a pad?

11 A. I think it's the same as the question you
12 asked a moment ago. So the first pad is positioned
13 underneath the exterior surface of the first
14 portion, and the first pad detects the electrical
15 signal via the user's skin contact with the exterior
16 surface of the first portion of the enclosure, so I
17 think that requires that there is no direct contact
18 between the user and the pad.

19 Q. Well, which part of any of Claim 1 did you
20 interpret as precluding all direct contact
21 between -- well, withdrawn.

22 Do you -- actually, let's move on to

1 element 1.D.1. So element 1.D.1 recites, [As read]
2 A second lead comprising a second pad that is
3 embedded in a second portion of the enclosure.

4 Is that right?

5 A. Yes.

6 Q. And that phrase "embedded in" is in both
7 elements 1.D.1 as well as 1.C.1; correct?

8 A. That's correct.

9 Q. Did you interpret "embedded in" to have the
10 same meaning or different meanings between 1.C.1 and
11 1.D.1?

12 A. So there's a section in my report that
13 discusses the meaning of "embedded in." Maybe I'll
14 just go there quickly. I think it's paragraph 20 --

15 Q. Dr. Kenny, you're more than welcome to go to
16 that section, but I just want to clarify, my
17 question is not what is your interpretation, my
18 question is just did you interpret them the same
19 way.

20 A. Yes. In both cases it means the element is
21 at least partially set in or partially surrounded by
22 a material of the enclosure.

1 Q. Did you interpret the phrase "second pad" in
2 1.D.1 to have any different meaning -- well,
3 withdrawn.

4 Did you interpret the phrase "pad" in 1.D.1
5 to have a different meaning from the phrase "pad" in
6 1.C.1?

7 A. So the two sections of the claim apply
8 different requirements to the first pad and the
9 second pad. And my interpretation of whether an
10 element is a first pad or a second pad depends on
11 whether that element meets all of the limitations
12 associated with first pad or second pad.

13 Q. Fair enough. And I guess my question is
14 more basic. Does your interpretation of the word
15 "pad" change depending on whether you're looking at
16 the first pad or the second pad?

17 A. I don't believe so.

18 Q. Next, let's look at 1.D.2. I'm not gonna
19 read the whole thing out. But the question is, when
20 you formed your opinions, did you apply the plain
21 and ordinary meaning of claim language to all the
22 language in 1.D.2?

1 A. I believe so.

2 Q. Can an ECG sensor meet element 1.D.2 if it
3 allows a user to touch the second pad?

4 A. So this element, 1.D.2, says that, [As read]
5 The second pad is configured to detect a second
6 electrical signal of the user's cardiac signal via
7 the user's skin contact with at least one of the
8 second pad and the second portion of the enclosure.

9 And I interpret the literal meaning of the
10 last part to be that the user's skin may be in
11 contact with the second pad or with the second
12 portion of the enclosure and still meet the
13 limitations of that claim.

14 Q. So when you formed your opinions in this
15 proceeding, what differences did you interpret there
16 to be between elements 1.D.2 and 1.C.3?

17 A. I think this is just reassembling answers
18 I've just given. 1.C.3 requires that the user's
19 skin contact be with the exterior surface of the
20 first portion of the enclosure. And 1.D.2 allows
21 that the user's skin can be in contact with the
22 second portion of the enclosure or with the second

1 pad. At least one of those two.

2 Q. So let's move on to element 1.E. Again, I'm
3 not going to read the whole claim language section.
4 But my question is, when you formed your opinions in
5 this proceeding, did you apply the plain and
6 ordinary meaning of the claim language in 1.E?

7 A. I believe so.

8 Q. What plain and ordinary meaning did you
9 apply to the word "connector"?

10 A. It's an electrical connector that's coupled
11 to the first pad and provides the electrical signal
12 to the processor.

13 Q. Is it a wire?

14 A. It could be a wire if it has the fixtures at
15 the two ends required to make the right connections.

16 Q. And what would be the fixtures at the two
17 ends that are required?

18 A. Some means of making an electrical
19 connection to the pad and to the processor. One of
20 ordinary skill would consider various options,
21 soldering perhaps, perhaps some kind of a push pin
22 or something at the processor. It depends on --

1 wire bonding perhaps as examples that could be
2 relevant.

3 Q. So those means for making an electrical
4 connection, are those going to be conductive
5 techniques?

6 A. I think one of ordinary skill would
7 understand that you make electrical connections by
8 making conductive connections.

9 Q. Would the means for making the connection be
10 part of the connector or part of the pad?

11 A. Hadn't really thought about that. The '257
12 patent doesn't really -- doesn't show the detail of
13 that. It just shows, for example, in figure 4B, it
14 just shows the wires kind of coming up to and, you
15 know, being connected to the pad.

16 One of ordinary skill would probably include
17 soldering or some other way of making sure there's a
18 good fixed contact. I don't think the patent
19 explains it in detail because it would be obviously
20 left to one of ordinary skill to make that
21 arrangement. And as to whether one might associate
22 the pieces of that connection with the pad or the

1 wire, I don't know. I don't think there's a
2 definitive statement that can be made.

3 Q. Is the means of making the electrical
4 connection something different from the pad or from
5 the connector?

6 A. It might be. If, for example, one uses some
7 kind of solder, that's a new additional element, but
8 it's kind of unrelated to the claimed features here,
9 whether it's present or absent. You could make that
10 connection by crimping or fusion-bonding the wire
11 directly to the pad or you could use solder. Again,
12 there's ordinary things that have been around longer
13 than you and I that are, I think, well understood by
14 one of ordinary skill to make that connection. The
15 patent doesn't elaborate. I don't really think I'd
16 care to try to define the boundary in one particular
17 way or another. And I, frankly, in the context of
18 the asserted prior art, I don't think there's any
19 details presented in any of those examples that
20 would help us or give us any perspective on this.

21 Q. Could you please pull up Exhibit 1005, which
22 is, I believe, the Markel prior art reference?

1 A. Sure.

2 (Exhibit 1005, previously marked, was
3 retained by counsel.)

4 A. I have it.

5 Q. So today when we've been referring to
6 Markel, you've been talking about Exhibit 1005;
7 correct?

8 A. That's correct.

9 Q. And Markel is a prior art reference that
10 AliveCor's expert relied on in this proceeding;
11 correct?

12 A. That's correct.

13 Q. Could you please turn to paragraph 50 of
14 Markel?

15 A. Okay.

16 Q. And paragraph 50 of Markel is talking about
17 figure 6 in Markel; correct?

18 A. Yeah, the next sentence of paragraph 50
19 refers to figure 6.

20 Q. So I'm gonna ask you questions about
21 paragraph 50 and figure 6. Feel free, as you need
22 to, to flip between the two, if you need to, to

1 answer the questions. Sound good?

2 A. Sounds great.

3 Q. So paragraph 50 refers to an audio output
4 portion 610; correct?

5 A. Yes, it does, down about halfway through.

6 Q. And one example of the audio output portion
7 610 is an earpiece; right?

8 A. Yes.

9 Q. If you look at figure 6, audio output
10 portion 610 is illustrated with a dotted line.

11 Do you see that?

12 A. Yes, I see that.

13 Q. What does the dotted line -- withdrawn.

14 When you formed your opinions, what did you
15 interpret the dotted line to mean?

16 A. So looking at paragraph 40, Markel writes,
17 [As read] As mentioned above, in various nonlimiting
18 configurations, an electrode (or all electrodes) or
19 other sensor may be substantially concealed (or
20 hidden) from a user. For example and without
21 limitation, the electrode may comprise a molded
22 conductive plastic with little or no visible

1 indication of electrode presence. In various
2 scenarios, the user need not be aware of the
3 presence of an electrode.

4 So in the context of Markel's disclosure, I
5 would interpret the dotted line as indicating the
6 boundary of the electrode 610, which is comprised of
7 conductive plastic and is visually consistent with
8 the surrounding material, as described repeatedly
9 through Markel, providing little or no visible
10 indication of the electrode presence.

11 Q. You said the word "boundary." Is the
12 electrode inside of the dotted oval or outside?

13 A. I think it's inside of that dotted
14 oval-shaped line. That's where the electrode is
15 positioned.

16 At the end of paragraph 50, it says, [As
17 read] Such electrode placement may, for example,
18 provide for user contact with both electrodes during
19 the process of listening.

20 In this regard, it's by pressing of that
21 region inside of 610 against the ear of the user
22 while holding the device in the -- in their hand.

1 Q. So I'd like to talk about the area outside
2 of oval marked 610.

3 Is that area part of the enclosure?

4 A. Yeah, I think so.

5 Q. Are you aware of any disclosure in Markel
6 that would talk about what material the enclosure of
7 Markel is made of?

8 A. I don't believe there's any explicit
9 statements of materials for the enclosure. The
10 electrode regions are described as being one of
11 several. Let me just find the exact quote.

12 [As read] The electrodes may be formed of
13 conductive plastic or another material that may be
14 integrated into various molded components of the
15 device.

16 Q. When you formed your opinions, did you
17 identify any disclosure in Markel suggesting that
18 the audio output portion, 610, should be made out of
19 a different material from the area outside of 610?

20 A. So the only reference to any material that
21 is not described as an electrode, at least that I
22 can find readily, is with respect to figure 4, item

1 415, which it describes as -- I've got my pages a
2 little bit scrambled here. It describes as an
3 insulating region that separates the electrically
4 conductive regions of 410, of 410B and 4 -- 420 and
5 410B on figure 4 on the right side.

6 There's no explicit disclosure of the
7 material that surrounds 610 in figure 6. I would
8 expect one of ordinary skill in the art to imagine
9 or assume that that material is a similar insulating
10 material to what one has on figure 4 labeled item
11 415.

12 Q. If you could please turn back to
13 paragraph 50, so about halfway through paragraph 50,
14 there's a sentence that says, [As read] A first
15 electrode may be disposed on the main body portion
16 620, e.g., molded into the main body portion 620 or
17 positioned on the main body portion 620.

18 Do you see that?

19 A. Yes.

20 Q. In the context of paragraph 50, how did you
21 interpret the phrase "disposed on" when you
22 performed your analysis?

1 A. I think it's plain and obvious from all of
2 what's in Markel, including the figures in the spec
3 and the claims that the electrode disposed on the
4 main body portion is an electrode that is on the
5 outside surface of the main body portion, either a
6 physical structure protruding from or perhaps
7 somewhat molded into, but where the upper surface of
8 this element, this electrode is exposed.

9 Q. Within the parenthetical starting with,
10 e.g., it says "molded into the main body portion
11 620."

12 A. Uh-huh.

13 Q. In the context of paragraph 50, how did you
14 interpret the phrase "molded into" in your analysis?

15 A. So I'll start with positioned on, because I
16 think it's more obvious. An object can be
17 positioned on an another object, such as may laptop
18 positioned on this table in front of me. So it's a
19 distinct item resting on top of the same flat
20 surface with contact on that flat surface above and
21 below.

22 Molded into would mean my laptop is partly

1 molded into the tabletop of this table. But that in
2 this case, the keypad and all of the things on the
3 top surface are still fully exposed.

4 Q. So those are two examples that are given in
5 paragraph 50; right, molded into and positioning?

6 A. Positioned on would be like my laptop
7 sitting on the table. Molded into would be my
8 laptop partly suppressed or subsumed into the
9 tabletop, but with the upper surface exposed and
10 uncovered. In this case, that electrode is exposed
11 and available for direct contact with the tissue of
12 the user.

13 Q. Going back to figure 6 and looking at audio
14 output portion 610, which of those two examples is
15 shown in figure 6?

16 A. The illustration --

17 Q. Sorry. To be clear, I'm asking about molded
18 into or positioned on.

19 A. Yeah, I would say it isn't very clearly
20 shown on -- as with the electrode on the back 620,
21 here 610 could be molded into or disposed on. It
22 may be an interpretive reach, the dotted line I

1 think indicates that it's not visually obvious what
2 the perimeter of the electrode is, so in that case
3 it might appear to be molded into and composed of
4 sort of the conductive plastic that is visually not
5 distinct from the surrounding insulating material.

6 Q. Did you interpret figure 6 as showing that
7 there's conductive material inside of the oval and
8 insulating material outside of the oval?

9 A. I think that's how one of ordinary skill
10 would interpret that figure, that the structure
11 labeled 610 is an electrode. It's comprised of
12 conductive plastic and it's intended to make direct
13 electrical contact with the ear of the user. And
14 that one would surround that with insulating
15 material.

16 Q. So is it now your testimony that a POSITA
17 would understand figure 6 to disclose different
18 materials inside of the dotted oval versus outside
19 of the dotted oval?

20 A. Did I say something differently before?

21 Q. If you would like to clarify, sir, please go
22 for it.

1 A. So the specification doesn't say much about
2 the material outside of the oval. Earlier I said
3 there's one portion of figure 4 that identifies the
4 areas that are not electrodes as being made of an
5 insulating material. And I think what I said then
6 is consistent with this statement that that is
7 probably how a person of ordinary skill in the art
8 would understand that the material surrounding 610
9 is probably similar to the material labeled item 415
10 on figure 4.

11 Q. So earlier when you were talking about the
12 insulating region on figure 4, were you referring to
13 paragraph 45 of Markel?

14 A. Yes, insulating region that separates
15 regions 410B and 420B.

16 Q. Other than the last sentence of paragraph
17 45, what other disclosure in Markel are you relying
18 on for the opinion that the inside of oval 610 can
19 be made of a different material from the outside of
20 oval 610 in figure 6?

21 A. So maybe the first part of my answer, that's
22 not an opinion that was offered in my report. When

1 considering Markel, I was mostly concerned with the
2 association made by Dr. Berger between elements of
3 Markel and the elements of the claims of the '257.
4 And I don't believe any of that really relied much
5 on what the material was outside of 610.

6 You're asking me for a spontaneous opinion
7 and I'm trying to be helpful. But the only
8 information I have in the spec for the material that
9 is not electrodes is that it is described in one
10 instance as an insulating region. And my
11 assumption, my opinion is that a person of ordinary
12 skill would make the same assumption about other
13 elements that are not being associated with the use
14 of them as electrodes.

15 But you're dragging me outside of the bounds
16 of my report here by asking questions about things
17 that weren't really asserted or challenged by
18 Dr. Berger.

19 Q. So are you saying that when you provided the
20 opinions in your second declaration, you had not
21 formed an opinion as to whether the material inside
22 610 is different from the material outside 610; is

1 that fair?

2 A. I think it's clear in Markel that the
3 material inside 610 is described as an electrode
4 perhaps of conductive plastic that it's not visually
5 distinct from the surrounding material. By intent,
6 this is the goal of Markel, is to visually conceal
7 those electrodes.

8 I think it's pretty obvious that if you're
9 trying to distinguish the electrode from something
10 that's not the electrode, but they look the same,
11 you're probably talking about two different
12 materials. I didn't write a paragraph about that,
13 because I thought it was pretty obvious, frankly,
14 that we're paying attention to the electrodes and
15 Markel's effort to provide them on the surface while
16 also making them visually inconspicuous.

17 Q. And for your opinion that you're -- I'm just
18 trying to unpack that a little, sir.

19 So you said that "if you're trying to
20 distinguish the electrode from something that's not
21 the electrode, but they look the same, you're
22 probably talking about two different materials?"

1 So which disclosure in Markel are you
2 relying on for that opinion?

3 A. It's just my understanding of the full
4 extent of Markel, that you have electrodes disposed
5 on the surfaces of the instrument, the MCD, and that
6 it was reasonable to assume that those electrodes
7 are surrounded by regions that are not electrodes or
8 else the whole thing is one big electrode. So,
9 again, Markel doesn't go to a lot of length to
10 explain this because I think it's obvious. Markel
11 doesn't go to a lot of length to explain much at all
12 of the structure or details of this disclosure. But
13 at least in this regard, you have electrodes
14 positioned on a device and you have the rest of the
15 device, which is presumably not electrodes,
16 therefore, a different material.

17 Q. So do you agree that -- I think you already
18 supplied this opinion, but do you agree that audio
19 output portion 610 can be made of a conductive
20 material?

21 A. So paragraph 81 of my report, we're
22 distinguishing visible apparent electrodes from the

1 concealed electrodes. An electrode -- this is now
2 quoting from Markel, [As read] An electrode or all
3 electrodes may be substantially concealed or hidden
4 from a user by having an electrode made of a molded
5 conductive plastic with little or no visible
6 indication of the electrode presence. So in other
7 words, Markel uses a molded conductive plastic to
8 make or form its electrode in order to conceal it
9 from being identifiable from the rest of the device
10 enclosure.

11 Markel is very specific that the intent is
12 to provide an electrode with little or no visible
13 indication of the electrode's presence. And that
14 throughout Markel, concealing or hiding an electrode
15 is accomplished through disguise by use of a
16 conductive plastic as electrode material, which
17 provides little or no visual indication of the
18 electrode presence.

19 Q. And in that sentence, sir, so part of what
20 you just read says Markel uses a "molded conductive
21 plastic to make or form its electrode." Then the
22 sentence continues.

1 Do you see that in paragraph 81?

2 A. Uh-huh.

3 Q. By its electrode, would that include the
4 electrode in audio output portion 610?

5 A. I believe so.

6 Q. Can you please turn to paragraph 88 of your
7 declaration? I think it's on page 51.

8 A. Okay.

9 Q. So if you could, just read that first
10 sentence of paragraph 88, please. You can read it
11 to yourself.

12 A. Okay.

13 Q. So based on what you said here, is it
14 correct that you disagree with AliveCor on whether a
15 POSITA would have been motivated to place an
16 electrode pad underneath an enclosure of a device?

17 A. Motivated by the disclosure of Markel?

18 Q. By Markel or anything else.

19 A. So there's nothing I've read in the reports
20 that would provide any such motivation. Markel is
21 consistently satisfied with the placement of
22 electrodes on the outside surface, either placed on

1 or molded into, but with the electrode surface
2 exposed to the user for direct electrical contact.
3 Everywhere Markel describes this, this is a feature
4 that provides a reliable and consistent electrical
5 contact using conductive plastic electrodes as the
6 means of making that electrical contact with the
7 skin of the user.

8 Q. In any of your declarations, have you
9 analyzed whether placing an electrode pad underneath
10 Markel's audio output portion 610 would cause any
11 unpredictable results?

12 A. There's nothing in Markel that would suggest
13 the need for such a thing. Markel describes a
14 useful product based on the designs proposed
15 throughout the disclosure of Markel where the
16 electrodes are on the surface. There's benefit to
17 direct electrical contact between the cheek or the
18 ear or the hands of the user and those electrodes.
19 Markel says those electrodes have sufficient
20 electrical properties to serve -- I say Markel says
21 the conductive plastic material can have sufficient
22 electrical properties to provide that function. As

1 far as I can tell from Markel's perspective, there's
2 no problem left to solve that could be addressed by
3 putting extra things inside or elsewhere or inside
4 of the product.

5 Q. So I'll move to strike that answer as
6 nonresponsive.

7 Sir, I'll reask the question.

8 In either of your declarations, have you
9 analyzed whether placing an electrode pad underneath
10 Markel's audio output portion 610 would cause any
11 unpredictable results?

12 A. I don't think there's any section in my
13 report that examines a hypothetical pad positioned
14 under the electrodes of Markel and what
15 unpredictable results might arise from that. I
16 think my understanding of Markel is that there's no
17 need for such a thing. Markel, on its own, teaches
18 that the electrodes on the surface are sufficient to
19 capture the EKG signals that are of interest and
20 describes an invention that provides means for
21 providing those electrodes.

22 Q. In either of your declarations, have you

1 analyzed a POSITA's chances of success in placing an
2 electrode pad under Markel's audio output
3 portion 610?

4 A. I think the answer is no. I was asked to
5 consider whether the disclosures of Markel and
6 Nissila and Righter include features and elements
7 that are consistent with the claims of the '257.
8 And there are no features in Markel that I think are
9 described that would represent the role of the first
10 pad of the first claim in the '257.

11 MR. FERNANDO: Let's go off the record,
12 please.

13 (A short break was had.)

14 BY MR. FERNANDO:

15 Q. Dr. Kenny, can you please turn to figure 6
16 in Markel again?

17 A. Okay.

18 Q. So audio output portion 610, would a POSITA
19 understand that there's a speaker within the dotted
20 oval and behind the dotted oval -- withdrawn.

21 Let me ask one question at a time.

22 So do you see, within the dotted oval

1 of 610, some little smaller ovals?

2 A. Yes.

3 Q. Do you understand that audio output
4 portion 610 has those holes so that it can output
5 sound to a user's ear?

6 A. I think that's my understanding of what's
7 drawn there.

8 Q. Do you agree that audio output portion 610
9 would have a speaker behind it?

10 A. There's nothing explicitly showing that, but
11 I think that's a reasonable assumption based on the
12 overall objectives of Markel.

13 Q. Would a POSITA understand that the speaker
14 behind audio output portion 610 is somehow attached
15 to the outer enclosure?

16 A. There's no real information about the
17 interior structure of Markel. Probably there's,
18 given the date of the patent, there's something like
19 a printed circuit board in here that is itself
20 attached to the exterior structure in some way. And
21 I'd expect the speaker is probably attached to that
22 circuit board but might also be somehow connected to

1 the structure above or below. There's just no
2 information. And, frankly, it's in the realm of
3 details that I think one of ordinary skill could
4 sort out without needing Markel's instruction.

5 Q. Would a POSITA have known how to attach that
6 speaker behind the audio output portion 610?

7 A. Yeah, I think a POSITA would appreciate that
8 there's a number of ways to do that. Perhaps with
9 glue, solder, maybe with small screws or clamps of
10 some kind. There's many options available.

11 Q. Would a POSITA have known that, when they
12 press audio output portion 610 to their ear, that
13 their ear is not going to directly touch that
14 speaker?

15 A. I think that's a fair interpretation of
16 what's here.

17 Q. Looking at the disclosure of Markel, would a
18 POSITA have expected the audio output portion 610 to
19 keep the speaker inside of the enclosure?

20 A. You know, without any information about the
21 location or mounting of the speaker, it's hard to
22 say, frankly. There's just -- Markel doesn't --

1 isn't interested in it and doesn't bother to
2 disclose the details of the interior structure.

3 Q. But would it have been within the knowledge
4 of a POSITA as to whether the speaker is inside of
5 this enclosure or not?

6 A. I think the speaker is inside but it isn't
7 obvious what role the element 610 is playing in
8 keeping its position. The speaker could be attached
9 to this or it could be attached to other elements
10 inside the enclosure to maintain its position.

11 Q. And I think we went over this before, but
12 audio output portion 610 is also an electrode;
13 correct?

14 A. Yes. It's an electrode used in Markel for
15 determining the ECG signals.

16 Q. And that electrode has some structure;
17 correct?

18 A. In terms of it having length and width and
19 thickness, for example? I would say yes, it has a
20 thickness. It has lateral dimensions.

21 Q. Could you -- and would that electrode be
22 part of the enclosure?

1 A. So the paragraph 50 says this first
2 electrode may be disposed on the handheld portion of
3 the MCD. And then it goes on to talk about it being
4 perhaps molded into or positioned on the body. I
5 think -- it's not really clear whether this is
6 intended to be part of the enclosure or whether it's
7 attached to the enclosure. Actually, I think it's
8 more likely the latter. It's molded into or
9 disposed upon something, the main body portion. I
10 think all of that is what makes up the enclosure.

11 Q. Can you please put aside Markel and pull up
12 Exhibit 1006, which is Nissila?

13 (Exhibit 1006, previously marked, was
14 retained by counsel.)

15 A. As I mentioned earlier, I have the '566
16 patent from Nissila as well as the original Finnish
17 patent. Please don't ask me to read from that, but
18 it has figures. And there's a certified English
19 translation of the original Finnish patent.

20 Q. So I think that tells me what I need to
21 know, but I just want to make sure.

22 So in your declaration -- let me clarify.

1 In your second declaration, you analyze the
2 Nissila patent that was in Dr. Berger's declaration;
3 correct?

4 A. Yeah. Dr. Berger considered Nissila in
5 combination with Markel when considering the claims
6 of the '257.

7 Q. And when we've been referring to Nissila,
8 we've been talking about Exhibit 1006; correct?

9 A. Yes, that's correct.

10 Q. And in your second declaration, you also
11 analyzed a translation of the Finnish priority
12 document for Nissila; is that right?

13 A. That's correct. Just to help be sure we had
14 a good understanding of the language in Nissila,
15 which was translated from Finnish and might have
16 lost a little in translation.

17 Q. In your declaration, did you analyze what
18 Nissila Exhibit 1006 discloses or makes obvious on
19 its own, or did you only ever consider it in
20 combination with the Nissila priority document?

21 A. So I -- my analysis was in response to the
22 assertions and opinions offered in Dr. Berger's

1 declaration and in the -- and in the original
2 complaint. I don't believe Nissila is asserted as a
3 standalone reference in those reports.

4 Q. Sorry. My question was unclear. So let me
5 try to take it step by step.

6 So, first of all, the Nissila priority
7 document, I'm referring to Exhibit 2007 to your
8 declaration. Is that your same understanding?

9 (Exhibit 2007, previously marked, was
10 retained by counsel.)

11 A. What is Exhibit 2007?

12 Q. Let me try again.

13 So when I refer to the Nissila priority
14 document, did you understand that to mean
15 Exhibit 2006 to your declaration?

16 A. Get our numbers right here.

17 I refer to it as Exhibit 1006 in my report.

18 Q. Okay. So are you looking at Exhibit 1006
19 right now?

20 A. Yes.

21 Q. And Exhibit 1006 on the first page, in the
22 top right-hand corner, it says U.S. 6,775,566;

1 correct?

2 A. That's correct.

3 Q. Okay. And then, on that same first page,
4 item number 30 says "Foreign Application Priority
5 Data."

6 Do you see that?

7 A. Yes.

8 Q. And under there, you've got a date and then
9 (FI) 20002304.

10 Do you see that?

11 A. I see that.

12 Q. And do you have a copy of the exhibit that's
13 been marked 2006 in front of you, which I believe is
14 written in Finnish?

15 (Exhibit 2006, previously marked, was
16 retained by counsel.)

17 Q. It has a nice crest at the top left-hand
18 corner.

19 A. Like this?

20 Q. Yes.

21 A. Yes, I have that.

22 Q. Okay. In the bottom right-hand corner, do

1 you see a stamp that says "APPLE 2006"?

2 A. It doesn't have that stamp.

3 Q. Okay.

4 A. But I believe it's the same document.

5 Q. Got it.

6 A. Sorry about that confusion.

7 Q. No problem. So I don't know whether that is
8 the same version of the exhibit that was attached to
9 Apple's patent owner response. The version that we
10 received states "APPLE 2006" in the bottom
11 right-hand corner. That is the version that I have
12 uploaded to the exhibit share. You're more than
13 welcome to download it. But let's see if we are
14 looking at the same versions.

15 So the document I'm looking at is pages 1
16 through 23, sequentially numbered. Does your copy
17 of a Finnish patent have those same pages?

18 A. I have text through page 19 and then figures
19 1 through 12 on three subsequent pages.

20 Q. Okay. And so let's, going forward, refer to
21 that document as Exhibit 2006. Sound fair?

22 THE WITNESS: Rick, any objection to that?

1 I think what I printed out is what you sent me a few
2 days ago.

3 MR. BISENIUS: It is. It's the version
4 prior to being stamped with the exhibit number. It
5 is the same exhibit.

6 THE WITNESS: Okay. I just want to be sure.
7 BY MR. FERNANDO:

8 Q. Okay. And maybe then we can look at what I
9 understand to be a translation.

10 Do you have that in front of you, Dr. Kenny?

11 A. I do.

12 Q. And is that version of the translation
13 stamped in the lower right-hand corner with the
14 stamp "APPLE 2007"?

15 A. It is not. But this is what the upper part
16 of it looks like.

17 Q. Okay.

18 A. I think it has the same pathway.

19 Q. We can probably short-circuit this.

20 MR. FERNANDO: Patrick, would you represent
21 that that's the same version that was attached to
22 the patent owner response?

1 MR. BISENIUS: Correct. Yes, that's the
2 correct version of the translation. It just has --
3 that does not have the exhibit stamp.

4 MR. FERNANDO: Okay. Sounds good. Thank
5 you.

6 BY MR. FERNANDO:

7 Q. Okay. So going backwards, all three of
8 these Exhibits, 1006, 2006, and 2007 have all been
9 cited in your second declaration; is that correct,
10 Dr. Kenny?

11 A. That's correct.

12 Q. When you were analyzing what Nissila,
13 Exhibit 1006, discloses, did you only ever consider
14 that document together with Exhibit 2006 and 2007,
15 or did you look at what Exhibit 1006 discloses by
16 itself?

17 A. I think it's fair to say that I started with
18 the 1006 document. And then to understand in more
19 detail and more clarity what Nissila is describing,
20 we looked -- I looked to the translation and to the
21 artwork in the original Finnish patent, just that
22 the copying of the artwork and the printing of the

1 details is clearer in those original documents than
2 in the U.S. patent version of those drawings.

3 Q. When you provided your opinions, did you
4 know that AliveCor and its expert are not relying on
5 Exhibit 2006 or 2007 to show invalidity of the '257
6 patent?

7 A. So I know that Dr. Berger and AliveCor do
8 not refer to those figures or any distinctions
9 between the different versions, that they refer
10 exclusively to the figures and descriptions in the
11 U.S. patent, which is Exhibit 1006. I hadn't -- I
12 could look into Berger's report to see if he cited
13 the other two. I suspect I'll find that he didn't.

14 Q. Could you open up Exhibit 1006, please,
15 which is Nissila.

16 A. Uh-huh.

17 Q. Let's turn, please, to column 5, lines 39 to
18 46.

19 A. Okay.

20 Q. So if you would, please, just read along
21 with me, there's a sentence here starting "The
22 membrane 119."

1 A. Uh-huh.

2 Q. It says, [As read] The membrane 119 can thus
3 come into contact with the person's skin surface 102
4 or on the inner surface 116 of the membrane 119
5 which is against the person's skin there can be an
6 electrically conducted adhesive 127.

7 Did I read that correctly?

8 A. That is what's written in Nissila's
9 Exhibit 1006, that's correct.

10 Q. So I'd like to talk about the end of that
11 sentence first where it says "a conductive adhesive
12 127."

13 Do you see that?

14 A. That's correct.

15 Q. Would a POSITA have known that a conductive
16 adhesive can conduct electrical signals?

17 A. I think so.

18 Q. Would a POSITA have known that a conductive
19 adhesive could conduct electrical signals from a
20 person's skin?

21 A. I think that's the understanding of Nissila,
22 that the membrane -- the membrane 119 which includes

1 the electrodes left and right, 118 and 122, receives
2 electrical signals from the skin and that the
3 adhesive can help play a role in that conduction.

4 Q. All right. You can put aside Nissila for
5 now.

6 And if you have it, can you please grab the
7 Righter prior art reference, which I believe is
8 Exhibit 1007?

9 A. Yes, I have that.

10 (Exhibit 1007, previously marked, was
11 retained by counsel.)

12 Q. Do you understand that AliveCor and
13 Dr. Berger analyzed the Righter prior art reference
14 in combination with Markel? And if it helps, I can
15 point you to paragraph 161 of your second
16 declaration.

17 A. Uh-huh.

18 Yes, thank you. Can I have that paragraph
19 again? Sorry.

20 Q. I believe 161.

21 A. Okay. Thank you.

22 Okay.

1 Q. So I suppose I can rephrase the question.

2 Do you understand that AliveCor and
3 Dr. Berger had a ground 3 that was based on applying
4 the teachings of Righter to Markel?

5 A. Yes, I do.

6 Q. And do you understand that AliveCor and
7 Dr. Berger analyzed why a POSITA would have been
8 motivated to combine Markel with Righter?

9 If it's helpful, I know you have the
10 petition in front of you. There's a section
11 starting on page 85 of the petition.

12 A. I was actually looking at Dr. Berger's
13 report on page 173 and 174.

14 Q. Got it.

15 A. And could I have the question again?

16 Q. Of course. Let me find the right page that
17 you're on as well first.

18 A. We're talking about ground 3.

19 Q. Correct. So let me reask it.

20 So do you understand that Dr. Berger
21 analyzed a ground 3 in which he provided reasons why
22 a person of ordinary skill in the art would have

1 been motivated to combine Markel, Nissila, and
2 Righter?

3 A. Yes.

4 Q. In your declaration, have you -- well,
5 sorry. Let me restate that.

6 In your second declaration, have you
7 provided any opinions where you disagree with
8 Dr. Berger's opinions about motivation to combine
9 Markel, Nissila, and Righter?

10 A. So I think with respect to ground 3, I do
11 not present any argument about the motivation to
12 combine Righter and Markel. There are arguments
13 about the motivation to combine Markel and Nissila
14 in ground 2 of my report. But this ground 3 section
15 starting on page 99 does not express opinions about
16 Dr. Berger's offering of motivation to combine.

17 Q. Do you understand that in this proceeding,
18 Apple has filed a motion to conditionally amend
19 Claims 16 through 22 of the '257 patent?

20 A. I'm aware there were motions to provide
21 those amendments. I'm not familiar with the details
22 or the arguments or the disposition of those

1 amendments.

2 Q. So you haven't reviewed that motion?

3 A. I have not.

4 Q. And you're not offering any opinions with
5 respect to any of the proposed amended claims?

6 A. No, I am not.

7 Q. Let's turn to your second declaration again,
8 and let's jump to a paragraph in the 30s.

9 A. Paragraph 130?

10 Q. No, a paragraph in the 30s. Let me find the
11 right one for you.

12 A. Gotcha, gotcha.

13 Q. So let's take a look at paragraph 27. I'm
14 sorry. Not the 30s.

15 A. Okay. This is where I offer my
16 understanding of the claim term "embedded in"?

17 Q. Right. And I'd like to jump in this section
18 to, then, paragraph 34.

19 A. Okay.

20 Q. So in paragraph 34 you discuss dictionary
21 definitions of the terms "embedded" and "embed"; is
22 that correct?

1 A. That's correct.

2 Q. Are you aware of any other paragraphs of
3 your report where you discuss dictionary definitions
4 of either embedded or embed?

5 A. No, I don't believe so.

6 Q. In paragraph 34, you cite the Exhibit
7 APPLE-2005.

8 Do you see that about halfway through?

9 A. Uh-huh. Yes. Sorry.

10 Q. Right before that citation, you quote a
11 sentence -- withdrawn.

12 So right before the citation APPLE-2005, you
13 have a quote stating, [As read] Embedded means,
14 quote, that which has been incorporated into a
15 surrounding mass or enclosure.

16 Do you see that?

17 A. Yes.

18 Q. When you formed your opinions on the phrase
19 "embedded in," did you rely on any dictionary
20 definitions other than the one quoted here in
21 paragraph 37?

22 A. Sorry. Paragraph 37? Or did you mean 34

1 still?

2 Q. 34. Let me reask that to be clear.

3 So when you formed your opinions on the
4 phrase "embedded in," did you rely on any dictionary
5 definitions other than the one quoted here in
6 paragraph 34?

7 A. So just not to be persnickety, but I rely on
8 this dictionary definition to understand the meaning
9 of the word "embedded" on its own. For embedded in,
10 I rely mostly on the plain and ordinary meaning, as
11 well as the examples and description in the '257
12 patent that are in -- that are described in the
13 prior four or five paragraphs.

14 Q. Does the plain and ordinary meaning of
15 embedded in depend at all on the plain and ordinary
16 meaning of embedded?

17 A. Sure, there's a relationship. I think
18 embedded in is narrower and I think the description
19 that I've offered, which is that embedded in means
20 at least partially set in or partially surrounded by
21 a material is the right way to think of embedded in.

22 Q. When you formed your opinions in this

1 proceeding, did you assume that the word "in" in the
2 phrase embedded in is an adverb that modifies
3 embedded?

4 A. Let me put my linguist hat on here for a
5 moment. Sorry. An adverb. My wife is a linguist
6 but she's in Italy today so she can't help me.

7 I think that's probably an okay description.
8 I think, you know, with respect to the language
9 here, the way I understand embedded in is describing
10 something that's embedded and also a relationship to
11 another object. Another particular object. In this
12 case, it's at least partially set in or partially
13 surrounded by the material of that second object
14 that might be associated with the adverb.

15 Whereas in paragraph 34, embedded by itself
16 just means that it's incorporated into a mass or
17 enclosure. But it doesn't necessarily say that it's
18 more specifically partially set in or partially
19 surrounded by.

20 Q. Going back to the sort of root word
21 "embedded," did you rely on any dictionary
22 definitions other than the one quoted here in

1 paragraph 34?

2 A. No. And just my understanding of the word
3 and its plain and ordinary meaning.

4 Q. All right.

5 MR. FERNANDO: I think we can go off the
6 record and hopefully make it quick.

7 THE WITNESS: All right.

8 (A short break was had.)

9 BY MR. FERNANDO:

10 Q. All right. Dr. Kenny, did you talk to
11 anyone during the last break?

12 A. Nope. Or any of the breaks.

13 Q. Or any of the breaks. Thank you.

14 MR. FERNANDO: In that case, we have no
15 further questions. We'll pass the witness.

16 MR. BISENIUS: All right. We're gonna
17 redirect.

18 EXAMINATION

19 BY MR. BISENIUS:

20 Q. Dr. Kenny, can you please pull up the
21 petition? And I want you to turn to page 16,
22 please.

1 A. Okay.

2 Q. On page 16, this is showing the element of
3 Claim 1 that AliveCor has identified as
4 element 1.C.3.

5 Do you see that?

6 A. Hold on a sec. I had the wrong --

7 Q. Oh, okay. Sorry. I thought you were there
8 already.

9 A. Okay. Page 16.

10 Q. And so, yeah, this is showing the element of
11 Claim 1 that AliveCor has labeled as 1.C.3.

12 Do you see that?

13 A. Uh-huh.

14 Q. And this element recites in part, quote,
15 wherein the first pad is positioned underneath the
16 exterior surface of the first portion, end quote.

17 Do you see that?

18 A. Uh-huh.

19 Q. Do you recall on questioning earlier today
20 about this particular claim element and its meaning?

21 A. Yes.

22 Q. At one point, Mr. Fernando asked you, quote,

1 when you formed your opinions, did you interpret the
2 claim as requiring the first pad to be completely
3 positioned underneath the exterior surface of the
4 first portion, end quote.

5 Do you recall that line of questioning?

6 A. Yes, I do.

7 Q. So my question to you is, assume that a
8 judge or a court determined that this claim element
9 does require the first pad to be completely
10 positioned underneath the exterior surface of the
11 first portion.

12 Would that change any of your opinions from
13 either of your declarations?

14 A. No.

15 Q. Okay. My next question, now assume that a
16 judge or a court interpreted this claim such that it
17 does not require the first pad to be completely
18 positioned underneath the exterior surface of the
19 first portion.

20 In that case, where a pad that is only
21 partially underneath an exterior surface of the
22 first portion would satisfy this claim, would that

1 change any of your opinions from your first or
2 second declaration?

3 A. Okay. Could you restate that?

4 Q. Yes.

5 A. It's a new hypothetical. Go ahead.

6 Q. If a judge or a court were to interpret that
7 portion of element 1.C.3 such that it does not
8 require the first pad to be completely positioned
9 underneath the exterior surface of the first
10 portion, so say that a first pad that is partially
11 positioned underneath the exterior surface of the
12 first portion satisfies the claim element, would
13 that change any of the opinions that you express in
14 your declarations?

15 A. So it would require a first pad to be
16 partially positioned underneath the exterior surface
17 of a first portion.

18 Q. Either partially or completely but didn't
19 require it to be completely.

20 A. That would not change any of my opinions.
21 None of the electrodes in Markel or in Nissila have
22 that characteristic. They're all completely on the

1 exposed surface of the structure.

2 Q. So is it fair to say that you hadn't
3 previously thought about whether or not this claim
4 element requires the first pad to be completely
5 positioned underneath the exterior surface of the
6 first portion because such an interpretation would
7 have been irrelevant to your analysis of the prior
8 art with respect to this claim?

9 MR. FERNANDO: Objection. Leading.

10 A. Okay. So how do I unlead myself?

11 Q. Well, I can ask that a different way.

12 Had you, prior to today, thought about
13 whether or not this claim element required the first
14 pad to be completely positioned underneath the
15 exterior surface of the first portion?

16 MR. FERNANDO: Objection. Leading.

17 A. Yeah, I don't think I had that thought.
18 And, you know, it's at least partly because the
19 opinions I've been offered to consider, the reports
20 and deposition testimony of Dr. Berger are not
21 attempting to argue that point. To me, the
22 electrodes in Markel and Nissila are not partially

1 underneath any exterior surface. They're all
2 completely on the outside surface.

3 MR. BISENIUS: No further questions from
4 patent owner.

5 MR. FERNANDO: Let me go off the record for
6 a moment and let us collect our thoughts.

7 THE WITNESS: Sure.

8 (A short break was had.)

9 FURTHER EXAMINATION

10 BY MR. FERNANDO:

11 Q. So Dr. Kenny, can you take a look at
12 figure 3 of the '257 patent, please?

13 A. Okay.

14 Q. And in figure 3, we're looking at the face
15 of this device; right?

16 A. Yes.

17 Q. Instead, I want you to imagine that we're
18 looking at the side 312 and at the sort of edge of
19 this device. Can you kind of envision that?

20 A. And are we imagining that that looks a bit
21 like the depictions in figure 4 from a different
22 perspective, of course, but at least the geometry

1 that we're talking about?

2 Q. Yes. Actually, figure 4A might be a way to
3 get at this. So let's talk about figure 4A.

4 Now, do you agree that, in figure 4A,
5 component 422 is a lead?

6 MR. BISENIUS: Objection. Outside the
7 scope.

8 A. I have to say, I didn't spend a lot of time
9 on this. This is not the claimed embodiment, so I
10 stayed with Claim 1 and the other claims that are
11 disputed. I can read what the patent says, if you'd
12 like.

13 Q. Sure.

14 A. Column 9, which is referencing figure 4A,
15 says, [As read] Lead 422 can be embedded along the
16 outer surface of bezel.

17 Q. And the bezel is component 410; right?

18 A. That's what the patent says, yes.

19 Q. Do you agree that the lead 422 is next to
20 the bezel 410?

21 MR. BISENIUS: Objection. Outside the
22 scope.

1 A. I'm just looking through my report to see if
2 I offered any opinions about figure 4A, and I really
3 don't. I'm not eager to invent constructions and
4 definitions around this at this time.

5 Q. So are you saying, in this proceeding, you
6 have no opinions with respect to figure 4A?

7 A. Figure 4A is not the claimed embodiment.
8 Claim 1 and beyond. The pad in 4A that's item 422
9 is not in the right position, according to Claim 1.

10 Q. Okay. Then let's go back to figure 3,
11 please, and try to get at it that way.

12 So, again, I'd like to imagine we're looking
13 at the side 312 and sort of that edge that would be
14 on the side. In other words, if this is the
15 phone -- if this is the phone, I'd like to look at
16 the edge.

17 A. Uh-huh.

18 Q. So do you agree that, if you look at that
19 edge or side 312, that you would see the lead 322
20 along that edge?

21 MR. BISENIUS: Objection. Outside the
22 scope.

1 A. I can't say for sure that I'd be able to see
2 it.

3 Q. Do you agree --

4 A. I think I know where -- go ahead.

5 Q. Go ahead. Sorry.

6 A. I said I think I know where it would be
7 based on this drawing, but it's not clear that I
8 would be able to see it.

9 Q. And so if you know where the lead is along
10 that edge, is it correct that on the left of the
11 lead would be part of the enclosure and on the right
12 of the lead would be part of the enclosure?

13 MR. BISENIUS: Same objection. Outside the
14 scope.

15 A. Sorry. I'm just reading the entirety of
16 column 8 that described this figure with a whole lot
17 of language implying variations and sizes, aesthetic
18 considerations, et cetera.

19 Q. So we can --

20 A. To answer a definitive question about the
21 side of figure 3 in the context --

22 Q. We can move on. I'm really just trying to

1 get a sense of your counsel's hypothetical. So I'll
2 read the question, the part of the hypothetical that
3 I want to know about.

4 So I think the question was, if a judge or a
5 court were to interpret that portion of
6 element 1.C.3 such that it does not require the
7 first pad to be completely positioned underneath the
8 exterior surface of the first portion.

9 Do you have that assumption in mind?

10 A. Sure.

11 Q. So if the pad is next to a portion of the
12 enclosure and the top of the pad and the top of the
13 enclosure are on the same plane, but part of the pad
14 is underneath that plane, would that fall within the
15 scope of element 1.C.3?

16 A. All right. So on top of everything else
17 there's now the plane of the enclosure that extends
18 across the pad. You're asking me whether if
19 anything's below that extended plane and not just
20 below the enclosure. Is that -- am I understanding
21 that correctly?

22 Q. Well, let me -- I think that's right but let

1 me try to break it up. So this is the reason I was
2 trying to point you to figure 3. So I'm -- do you
3 agree that -- so, first, assume that you have a pad
4 next to an enclosure. You got that in mind?

5 A. Okay.

6 Q. Let's assume that the top of the pad has the
7 same plane as the top of the enclosure. Do you have
8 that in mind?

9 A. Okay.

10 Q. Do you agree that part of the pad must be
11 below that plane that is shared by the top of the
12 pad and the top of the enclosure?

13 A. You're basically asking me if some of the
14 pad is below the top of the pad.

15 Q. Correct.

16 A. I think, if it's an object that has any
17 finite thickness, some of it must be below its outer
18 surface. That's just geometry.

19 Q. And so if part of the pad is below its outer
20 surface, do you agree that part of the pad in that
21 hypothetical is underneath the exterior surface of
22 the enclosure?

1 A. At least what's shown here are rectangles
2 with clean boundaries, if that's what's reflected in
3 the drawing, my interpreting side views and top
4 views and so on, I don't see any portion of the
5 pad 322 underneath the enclosure.

6 Q. So I wasn't asking about figure 3,
7 Dr. Kenny. I'm talking about this hypothetical. We
8 can talk about figure 3, but I thought you needed to
9 read through the whole column. So I'm just trying
10 to stick with the hypothetical. Okay?

11 So under the hypothetical that we went
12 through, if part of the pad is below its outer
13 surface, do you agree that part of the pad must be
14 underneath the exterior surface of the enclosure?

15 A. Honestly, it's gonna be hard to say one way
16 or the other without precise geometry and
17 understanding the full extent of the pad and the
18 relationship it has with the portions of the
19 enclosure and, you know, whether there's, you
20 know -- I don't think the important thing is the
21 plane connecting the various extrapolated surface
22 areas. It's more, you know, literally what is under

1 what. And I think if there's no part of it
2 underneath, then it's not underneath. That's -- I
3 think it's plain and simple.

4 If we were to look at a whole bunch of
5 geometries, I suppose I could stare at each one of
6 them for a while and try to decide whether in some
7 cases part of something is underneath part of
8 something else. I think it's one of those things
9 with any particular geometry it's not hard to say.
10 I just want to be sure I understand the full extent
11 of the hypothetical. I don't want to make a general
12 statement that wouldn't apply in general.

13 I'm sorry. I'm trying not to be
14 unresponsive, even though I'm a bit long-winded
15 here. Just I haven't thought about it. It's a
16 hypothetical outside of anything in my report. It's
17 not clearly represented in the spec of the patent as
18 a hypothetical and just not eager to go into a
19 definitive solid position.

20 Q. So are you unable to tell me whether a pad
21 next to an enclosure falls within the scope of
22 element 1.C.3?

1 A. I think there's a lot of things that one
2 might call next to something else where the answer
3 could be yes or no. It's gonna depend a lot on the
4 shapes, the three-dimensional shapes, the slopes,
5 the side walls, you know, whether there's anything
6 wrapping around anything else, et cetera, et cetera.
7 Just being next to something isn't sufficient for me
8 to make a sort of a binary judgment that would apply
9 across the board.

10 Sorry I can't be super helpful. I just --
11 this is kind of a vague hypothetical after a whole
12 lot of much more specific stuff.

13 Q. So based on the hypotheticals that I've
14 provided, is there any other response that you can
15 offer to my questions?

16 A. Yeah, I think there's enough vagueness here
17 I can't give you a definitive yes-or-no answer. The
18 answer I gave, it depends on other details that I
19 would need to see.

20 Q. So the hypothetical I've posed is a
21 three-dimensional pad that is next to a
22 three-dimensional portion of the enclosure.

1 What additional information would you need?

2 A. I'd want to know the full three-dimensional
3 shape of the pad and the full three-dimensional
4 shape of whatever part of the enclosure it's next
5 to, and I want to understand all of the details of
6 how those two surfaces are adjacent to one another.

7 I mean, I'm next to a piece of furniture
8 here but that -- it's hard to say whether I'm
9 under -- I'm next to the table. Part of me is under
10 the table. Part of me is on the table. The table
11 is next to the wall. Part of me -- you know,
12 it's -- I don't want to make a simple binary
13 statement to a hypothetical that has some vague
14 elements to it. So I just don't want to be
15 misinterpreted.

16 Q. So then we can go back to figure 3. So
17 looking at figure 3, by "next to," I'm talking about
18 a relationship that is in figure 3 between the
19 side 312 and the lead 322.

20 Do you have that in mind?

21 A. At least in this one cross-section, sure. I
22 don't know what's above or below, but let's go

1 forward and see where we can go.

2 Q. And so to my eye, the side 312 and the lead
3 322 have the same plane for the top -- for the side
4 surfaces -- well, withdrawn. That wasn't a
5 question.

6 So I want you to assume that 312 and 322
7 share a surface on that side that's on the same
8 plane.

9 Do you have that in mind?

10 A. Okay.

11 Q. Do you agree that part of the lead 322 is
12 going to be beneath the plane that exists between
13 side 312 and side 322?

14 A. I think that was the question we asked
15 previously, that that plane is defining the upper
16 surface of the electrode 322. And if that electrode
17 has finite thickness, there's no way to avoid having
18 a portion of it be below one of its surfaces. So it
19 has nothing to do with the surrounding material.
20 Part of 322 is below the surface of 322 by
21 definition.

22 Q. So if part of 322 is below the surface, do

1 you agree that part of that pad is underneath the
2 exterior surface of side 312?

3 A. I think the portion of 322 that's beneath
4 its outer surface is beneath the outer surface of
5 322. That doesn't mean that it's beneath 312.
6 Those are two different things, I think.

7 Q. Okay. So if 322 is assumed to be a pad and
8 312 is assumed to be part of the enclosure, do you
9 agree that this structure does not meet claim
10 element 1.C.3?

11 A. I think for this simple case where 322 is
12 basically a rectangular object and none of it is, I
13 think, beneath 312, that therefore doesn't meet the
14 limitations of the claim. None of the pad is
15 underneath the enclosure, as shown here.

16 Now, this is a cross-section. Don't know
17 what else there might be top and bottom, left and
18 right, but if this is representative, I would -- I
19 wouldn't be able to say this is -- this meets the
20 limitation of the claim.

21 Again, you're asking me about hypotheticals
22 outside of the scope of my report, so I'm doing the

1 best I can to give you some kind of an answer. I
2 appreciate you've been trying hard to get me to give
3 a clean answer. I hope that's clean enough.

4 Q. When you say "none of the pad is underneath
5 the enclosure," as shown here in figure 3, does that
6 mean that you are looking at 322 from a side view
7 and looking down on 322 along that side edge?

8 A. Yeah, I think that's what you're asking me
9 to do.

10 Q. Okay.

11 MR. FERNANDO: No further questions. We'll
12 pass the witness.

13 MR. BISENIUS: I don't believe we get
14 another chance, but no further questions just to
15 make it official.

16 MR. FERNANDO: Thank you.

17 (Off the record at 3:11 p.m.)
18
19
20
21
22

ACKNOWLEDGMENT OF DEPONENT

I, THOMAS W. KENNY, Ph.D., do hereby
acknowledge that I have read and examined the
foregoing testimony, and the same is a true,
correct, and complete transcription of the testimony
given by me and any corrections appear on the
attached errata sheet signed by me.

(DATE)

(SIGNATURE)

1 CERTIFICATE OF COURT REPORTER - NOTARY PUBLIC

2

3 I, TIFFANY M. PIETRZYK, Certified Shorthand
4 Reporter No. 084-004371, CSR, RPR, CRR, and a Notary
5 Public within and for the State of Illinois, do
6 hereby certify:

7 That THOMAS W. KENNY, Ph.D., the witness
8 whose deposition is hereinbefore set forth, was duly
9 sworn by me before the commencement of such
10 deposition and that such deposition was taken before
11 me and is a true record of the testimony given by
12 such witness.

13 I further certify that the adverse party,
14 APPLE INC., was represented by counsel at the
15 deposition.

16 I further certify that the deposition of
17 THOMAS W. KENNY, Ph.D. occurred virtually, via Zoom
18 videoconference, on Wednesday June 19, 2024,
19 commencing at 9:01 a.m. CST to 3:11 p.m. CST.

20 I further certify that I am not related to
21 any of the parties to this action by blood or
22 marriage, I am not employed by or an attorney to any

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AliveCor Exhibit 1022

AliveCor, Inc. v. Apple Inc.

IPR2023-00950, U.S. Patent No. 10,076,257

1 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.

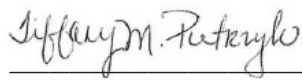
4 IN WITNESS WHEREOF, I have hereunto set my
5 hand and affixed my notarial seal this 19th day of
6 June, 2024.

7

8 My commission expires: February 28th, 2028

9

10



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AliveCor Exhibit 1022

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