

UNITED STATES INTERNATIONAL TRADE COMMISSION

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In the Matter of

Investigation No.

CERTAIN LIGHT-BASED PHYSIOLOGICAL 337-TA-1276

MEASUREMENT DEVICES AND COMPONENTS

THEREOF

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REVISED AND CORRECTED TRANSCRIPT

OPEN SESSIONS

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1 UNITED STATES INTERNATIONAL TRADE COMMISSION
2 Washington, D.C.
3 Before the Honorable Monica Bhattacharyya
4 Administrative Law Judge

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6 -----X

7 In the Matter of Investigation No.

8

9 CERTAIN LIGHT-BASED PHYSIOLOGICAL 337-TA-1276

10 MEASUREMENT DEVICES AND COMPONENTS

11 THEREOF

12 -----X

13

14

15 EVIDENTIARY HEARING

16 Monday, June 6, 2022

17 Volume I

18

19

20 The parties met via remote videoconferencing
21 pursuant to notice of the Administrative Law Judge at 9:30
22 a.m. Eastern.

23

24

25 Reported by: Linda S. Kinkade RDR CRR RMR RPR CSR

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2 [All parties appeared via remote videoconferencing and/or
3 telephonically.]

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24 *** Index appears at end of transcript ***

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

2 (In session at 9:30 a.m.)

3 JUDGE BHATTACHARYYA: Good morning everyone.

4 This is Monica Bhattacharyya, Presiding ALJ. We're here for
5 the evidentiary hearing in certain light-based physiological
6 measurement devices and components thereof, Investigation
7 No. 337-TA-1276. With me is my Attorney Advisor Ted Jou.

8 Could counsel please enter their appearances.

9 MS. SWAROOP: Good morning, Your Honor. Sheila
10 Swaroop, counsel for Complainants Masimo and Cercacor.

11 JUDGE BHATTACHARYYA: Good morning. I believe
12 you're on mute.

13 MR. MUELLER: I'm sorry, Your Honor. Good
14 morning. Joe Mueller on behalf of Respondent Apple.

15 JUDGE BHATTACHARYYA: Good morning. We're
16 starting out on the public record.

17 As we discussed last week, there should be a
18 designated person for both Complainants and Respondent who
19 can confirm when we're ready to go on the confidential
20 record at certain points during the hearing.

21 Ms. Swaroop, who is the designated representative
22 for Masimo?

23 MS. SWAROOP: Yes, Your Honor, I can make those
24 representations today.

25 JUDGE BHATTACHARYYA: Thank you. Mr. Mueller,

1 for Apple?

2 MR. MUELLER: Yes, Your Honor. Sarah Frazier
3 will be our designated representative on that issue.

4 JUDGE BHATTACHARYYA: Thank you. We do have some
5 members of the public here, including, there's a Call In
6 User 1. I'd ask call in User 1 to mute their line, if it's
7 not muted already, and also at some point when they call in
8 to identify themselves as a member of the public.

9 There's also a person on the line, Arjun
10 Jaikumar. I'd ask that that person also indicate if they
11 are a member of the public or affiliated with Respondent or
12 Complainants. We don't have to hold up the hearing for
13 that. At the moment I'll just assume that both those people
14 are members of the public.

15 (Clarification by reporter.)

16 JUDGE BHATTACHARYYA: All right. Thank you. I
17 wanted to follow up on a couple of items from our
18 pre-hearing conference last week. There was a question
19 about deposition designations. As I believe you received an
20 email last week from my attorney advisor, I'm not going to
21 require that all deposition designations that have been
22 discussed be admitted into evidence. Each party should move
23 to admit their deposition designations by the close of their
24 case, whether it's their case-in-chief or...

25 Any questions about that?

1 MR. MUELLER: No, Your Honor. Thank you.

2 MS. SWAROOP: Thank you, Your Honor.

3 JUDGE BHATTACHARYYA: The other item that was
4 discussed last week had to do with sequestration. As I also
5 believe you heard from my Attorney Advisor, each party will
6 be permitted a corporate representative designated by that
7 party to not be sequestered. Are there any questions about
8 that fact?

9 MR. MUELLER: Does the sequestration apply before
10 opening statements or after opening statements? There was
11 some email correspondence on this. We'll, of course, do
12 whatever Your Honor directs.

13 We have had in most of our cases actually the
14 sequestration kicks in before the witnesses begin to testify
15 as opposed to the opening statements, but whatever
16 Your Honor's preference is, of course we'll strictly adhere
17 to that.

18 JUDGE BHATTACHARYYA: Ms. Swaroop, do you have a
19 preference?

20 MS. SWAROOP: Yes, Your Honor. Masimo would
21 prefer that the sequestration begin with opening statements,
22 and I think, as we had provided to Your Honor's Attorney
23 Advisor with some authority, suggesting that if witness
24 testimony is going to be referred to in the opening, that
25 the sequestration should go into effect at that time. And I

1 plan to refer to witness testimony in my opening, and I
2 understand from Apple's slides that they intend to as well.

3 JUDGE BHATTACHARYYA: Mr. Mueller, is that
4 correct, does Apple intend to refer to the anticipated
5 content of witness testimony?

6 MR. MUELLER: At a very high level, Your Honor.
7 We're not going to get into any of the details of what any
8 particular witness will say.

9 JUDGE BHATTACHARYYA: The sequestration will go
10 into effect for the opening statements as well.

11 MR. MUELLER: Your Honor, I would just note for
12 the record that our corporate designee from the fact witness
13 group is Dr. Paul Mannheimer.

14 JUDGE BHATTACHARYYA: Thank you.

15 And Ms. Swaroop, I assume it's Mr. Kiani, as you
16 indicated last week?

17 MS. SWAROOP: Yes, it is, Your Honor.

18 JUDGE BHATTACHARYYA: Is there anything further
19 before we proceed with opening statements?

20 MR. MUELLER: Yes, Your Honor, two quick things.
21 To the extent that Masimo does attempt to introduce certain
22 deposition designations today, we do have some outstanding
23 objections. We can take those up later if it more
24 convenient for Your Honor.

25 Also, on the witness list for today, although I

1 suspect we won't reach him, is Mr. Scruggs. We have some
2 pretty significant objections to the anticipated testimony
3 from Mr. Scruggs.

4 Again, it may be easier just to take those up
5 later today, particularly in light of the fact that we may
6 not reach him today, but we're happy to discuss it now if
7 Your Honor would prefer.

8 JUDGE BHATTACHARYYA: I would appreciate a
9 preview of the issues that are going to come up, but rather
10 than take away time from the hearing, if you could send an
11 email copying Masimo's counsel just summarizing what you
12 believe at a high level the disputes are going to be, that
13 would be helpful.

14 MR. MUELLER: Will do. Thank you, Your Honor.

15 JUDGE BHATTACHARYYA: Thank you. Shall we
16 proceed with opening statements?

17 MS. SWAROOP: Your Honor, Complainants are ready
18 to begin.

19 JUDGE BHATTACHARYYA: Okay. You may proceed.

20 OPENING STATEMENT BY COMPLAINANTS

21 MS. SWAROOP: Good morning, Your Honor. Masimo
22 and our team here in California are happy to be here to
23 begin this evidentiary hearing. We're looking forward to
24 presenting our case to you and to having you hear from our
25 witnesses and consider our evidence.

1 This ITC investigation and the five patents at
2 issue mean a lot to Masimo. These patents resulted from the
3 ingenuity of many Masimo and Cercacor engineers, some of
4 whom you will hear from.

5 These inventions relate to three areas of
6 physiological monitoring. The first is a sensor design for
7 light-based measurements that was not only unique but went
8 against conventional thinking about how to obtain reliable
9 measurements. You'll hear that this design actually
10 resulted in improved measurements.

11 The second is a novel sensor design with features
12 to project light into tissue to allow more of the tissue to
13 be irradiated which increases the relevant information in
14 the detected signals.

15 Your Honor, I apologize. There appears to be
16 some sound or some background. If the person could mute,
17 that would be appreciated. Thank you.

18 And the third invention is a novel accuracy
19 enhancement system that introduces a thermal mass that
20 stabilizes and normalizes temperature to allow a single
21 thermistor to be used to correlate to the temperature of
22 multiple LEDs.

23 This is done to compensate for measurement errors
24 resulting from subtle changes to the LED operating
25 characteristics.

1 Now one of the parameters we will discuss
2 throughout the hearing is a noninvasive measurement of
3 oxygen saturation of a person's blood. The evidence will
4 show the challenges of obtaining reliable oxygen saturation
5 measurements from a person's wrist.

6 This investigation presents very important issues
7 affecting Masimo's domestic industry, and we appreciate your
8 efforts to carefully consider the issues here.

9 I'd like to start first with introducing you to
10 Masimo. The evidence will show that Masimo is a pioneer in
11 the area of noninvasive monitoring of physiological
12 parameters. You'll hear from our first witness, Joe Kiani,
13 about Masimo's history of innovation.

14 Mr. Kiani will explain how he started Masimo in
15 1989 to solve a bane of pulse oximeter measurements,
16 measuring through motion and low blood flow. You will hear
17 how the innovations developed at Masimo revolutionized
18 noninvasive monitoring.

19 And if we could go to our first slide here, which
20 is on the screen.

21 The evidence will show that Masimo developed and
22 introduced many innovative products in the professional care
23 settings and that Masimo consumer presence began to grow
24 many years ago.

25 The timeline here identifies various

1 medical-grade, consumer products that Masimo has introduced
2 throughout the years. You will hear about Masimo's iSpO2,
3 the first consumer pulse oximeter for the Apple iPhone that
4 Apple itself carried in the 2012 time period.

5 You will hear about Masimo's other consumer
6 products including the Masimo W1 Watch that was released in
7 2021.

8 In addition to being Masimo's founder and CEO,
9 Mr. Kiani is also an inventor on three of the five patents
10 at issue in this investigation.

11 If we could go to our next slide.

12 We refer to these as the Multi-Detector Patents
13 and they are part of the '501, '502, and '648 patent group.
14 You will hear from Mr. Kiani about this invention.

15 The evidence will show that the claimed sensor
16 design, which has a convex protrusion that covers all of the
17 detectors and deforms the skin, was completely
18 counterintuitive. These patents also claim specific
19 structures of the sensor that minimize the amount of light
20 that goes directly from the LEDs to the detectors without
21 interacting with the tissue.

22 Our next slide here, we have a figure from the
23 Multi-Detector Patents. This is Fig. 3C that Mr. Kiani will
24 talk about. And you can see here we have a sensor, and
25 there's a protrusion that's labeled as element 305, and you

1 can see a series of four windows or openings that are
2 labeled as 320, 321, 322, and 323.

3 The photodetectors are below those openings and
4 receive light from the emitters. The patent also explains
5 that these windows can include shielding to reduce noise
6 from ambient light.

7 You will hear that this invention came about when
8 Masimo was researching how to obtain better light-based
9 signals for very difficult and more sensitive noninvasive
10 physiological parameters, such as total hemoglobin, carbon
11 monoxide, and even glucose.

12 In addition to giving better measurements for
13 more difficult parameters, you will hear that this patented
14 sensor design also improved light-based measurements in more
15 difficult sites.

16 The next patent in this investigation is the '745
17 patent, which you'll hear referred to as the light-shaping
18 patent. You'll hear from Ammar Al-Ali, who is the inventor
19 on this patent, and Mr. Al-Ali will explain his invention.

20 If we go to our next figure.

21 What we see here is Fig. 7A from the '745 patent,
22 which shows one embodiment of the invention. And you can
23 see here we have an LED that's shaded in red at the top
24 there, and then there's a light diffuser that spreads out
25 and can also shape the light so that more tissue is

1 irradiated before it reaches the photodetector. The
2 photodetector is shown there in blue as element 710.

3 There's also light block that's shown as item 706
4 in green that's between the LEDs and the photodetector.

5 The evidence will show the -- this improved the
6 measurement particularly on more difficult sites.

7 The third inventor you'll hear from is Mohamed
8 Diab. He joined Mr. Kiani to start Masimo. Mr. Diab is an
9 inventor on the '127 patent, which we refer to as the
10 temperature patent.

11 Mr. Diab will explain how this patent allowed for
12 the measurement of parameters that no other company has been
13 able to measure. This patent introduced using a thermal
14 mass for the LED package and the sensor that stabilizes and
15 normalizes temperature, so that a thermistor can be used to
16 correlate to the temperature of multiple LEDs and, in turn,
17 correlate to the changes in wavelength of emitted light.

18 The basics of this are shown in our next slide,
19 which include Figs. 12 and 14 from the '127 patent.

20 What we see here on Fig. 12 on the left is a
21 diagram of the emitter substrate, and it shows a thermal
22 mass in the middle with multiple LEDs thermally coupled to
23 that mass. A temperature sensor, you see that on the right,
24 is also shown thermally coupled to the thermal mass.

25 The temperature sensor measures the temperature

1 of the thermal mass and uses that to estimate all of the
2 operating wavelengths of the LEDs.

3 Fig. 14, which is on the right, from this patent,
4 illustrates one example of a PC board that includes
5 metallized layers that act as a thermal mass so that the
6 measurement by the temperature sensors can provide
7 meaningful information about the operating wavelengths of
8 the LED.

9 The evidence will show that this feature results
10 in increased accuracy, because the measurement of
11 physiological parameters depends on the particular
12 wavelength of the LEDs.

13 The inventors pursued this to help them measure
14 new physiological parameters that are difficult to obtain.
15 This technology is used in Masimo's rainbow[®] sensors, which
16 measure a variety of parameters with light-based
17 measurements.

18 You'll also hear from several witnesses
19 about Masimo's extensive activities in the United States to
20 use these three patent groups in its products. For the
21 Multi-Detector Patents and the light-shaping patent, the
22 evidence will show Masimo's efforts in the United States to
23 design, develop, and manufacture the Masimo Watch.

24 You will hear from Mr. Kiani, Mr. Al-Ali and
25 Bilal Muhsin, the CEO, about Masimo's activities in

1 developing and launching the Masimo Watch that is
2 commercially called W1.

3 You'll hear about the details in the Masimo Watch
4 project from Stephen Scruggs, an engineer at Masimo who,
5 along with others, designed and developed the watches we are
6 presenting for the technical prong requirement.

7 The evidence will show that this has been an
8 ongoing project for years. Masimo's design and development
9 activities have taken place in the United States, so that
10 Masimo could develop a medical-grade product that delivers
11 reliable measurements. This is in contrast with other pulse
12 oximeters that are not reliable.

13 Now my next slide is going to include Masimo
14 confidential business information. So I just want to make
15 that clear so that we can have the appropriate people leave
16 the Webex meeting, and that would include Apple's corporate
17 representative.

18 I apologize. Yes, that would include Apple's
19 corporate representative as well.

20 (Whereupon, the hearing proceeded in confidential
21 session.)

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1 O P E N S E S S I O N

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3 JUDGE BHATTACHARYYA: Moving back to the public
4 record.

5 MS. SWAROOP: I'd now like to discuss patent
6 validity with respect to the Multi-Detector Patents.

7 Now we don't know exactly what Apple's validity
8 defense will be and what exactly Apple will present to you,
9 and that's because Apple's pre-hearing brief for the five
10 claims in this group includes dozens of references for
11 background and for motivation to combine, and Apple's
12 invalidity grounds uses a combination of numerous
13 references.

14 So we will see the reveal along with you when
15 Apple decides to finally unveil what the bases are for its
16 invalidity defense.

17 The best we can discern is that Apple now appears
18 to be relying on two primary references in its combinations.
19 One, based on a patent that we refer to as Lumidigm, and one
20 based on foam sensor heads from a student project at Kansas
21 State.

22 So let's talk about Lumidigm first. The evidence
23 will show that Lumidigm's focus was obtaining a spectral
24 signature across a band of wavelengths to identify the
25 wearer. Lumidigm then provides a wish list of wide-ranging

1 use cases that range from fruit ripeness, identifying
2 counterfeit documents, oxygenation, a mood meter, a lie
3 detector, used as a TV remote, a barcode scanner, a smoke
4 detector, a guitar tuner, an alcohol monitor, and more
5 unrelated wishes.

6 For Kansas State, the evidence will show that an
7 undergraduate student following conventional wisdom designed
8 a basic sensor for a summer project. The foam sensor head
9 lacked the unrecognized benefit of the convex protrusion
10 that we talked about earlier. It merely conformed to and
11 did not disturb the tissue. Also, it was never
12 commercialized or developed beyond an undergraduate
13 student's summer project.

14 When Apple does unveil its invalidity combinations
15 based on Lumidigm or the Kansas State student project. You
16 will hear from our expert why the references they choose to
17 present to you are missing fundamental features of the
18 claims and why the combinations would not have been obvious
19 and would still be missing claimed features.

20 Apple's own evidence will also support the
21 nonobviousness of the claimed sensor configuration.

22 Another defense you may hear from Apple on is an
23 assertion that Masimo's patents are somehow unenforceable
24 due to prosecution laches. The publicly available
25 prosecution history of this patent family refutes that

1 defense and shows the activity Masimo took to move its
2 patents toward issuance. You will hear no expert from Apple
3 testify that the record of prosecution showed any kind of
4 unreasonable delay by Masimo.

5 Apple's pre-hearing brief also does not identify
6 any Apple witnesses who will speak about any prejudice that
7 Apple has suffered as a result of any alleged delay.

8 Apple's opening slides include a timeline
9 labeling various time periods as a delay, but that simply
10 ignores the public record of the prosecution history that
11 actually was taking place during that time period.

12 And now I'd like to turn to the light-shaping
13 patent and the evidence there. As that patent, as I had
14 previewed earlier, this patent changes the shape of light
15 from the detector so that it irradiates more of the tissue
16 and improves overlap in the area being measured.

17 The evidence will show that Apple implemented
18 this feature in the infringing Series 6 and later watches
19 with its MLA lens.

20 Masimo will present tests of the infringing
21 watches that show that light entering the Apple MLA lens is
22 a different shape from the light that exits the MLA lens.

23 We can go to our next --

24 MR. MUELLER: If we could go on the confidential
25 record, please.

1 MS. SWAROOP: Your Honor, this is not --

2 MR. MUELLER: I apologize for interrupting. I
3 just want to be careful about going on the Apple
4 confidential record for any discussion of the technical
5 details of the Apple products.

6 MS. SWAROOP: Your Honor, I plan to discuss
7 testing that was conducted by Masimo. This is not Apple
8 confidential information and was not identified as
9 containing Apple confidential information in our discussion
10 over these slides.

11 MR. MUELLER: I'll take Ms. Swaroop's word for
12 it, but to the extent there's oral discussion that's going
13 to move into the details of the products, we would ask that
14 we go on the Apple confidential record, and I believe there
15 is a slide coming up soon that will also require we go on
16 that record.

17 JUDGE BHATTACHARYYA: Ms. Swaroop, do you know
18 what Mr. Mueller is referring to?

19 MS. SWAROOP: I do, Your Honor. It's related to
20 the '127 patent, and I plan to go on the confidential record
21 for that portion.

22 This particular portion is information that is
23 not confidential to Apple, and I plan to discuss the test
24 results on our slide, which Apple has not identified as
25 containing any Apple confidential information.

1 MR. MUELLER: Just that, Your Honor, we have no
2 objection. I just want to be careful that, if it goes
3 beyond that, we move on the confidential record.

4 JUDGE BHATTACHARYYA: You may proceed,
5 Ms. Swaroop.

6 MS. SWAROOP: Thank you, Your Honor.

7 If we could go to our slide here.

8 This slide shows light-shaping testing of the
9 Apple Watch that was done in this investigation. And you
10 can see here that there were three different LEDs that were
11 tested: the red, the green, and the infrared in the third
12 row.

13 And so in these tests Masimo obtained images of
14 the light as it exited the LED, images when the light
15 entered the MLA lens, and that's what we see in the second
16 column as the light -- as it enters the MLA lens, and then
17 the third column we see what the light looks like after it
18 has exited the MLA lens. And so that's the third column.

19 And the evidence will show, if you look at the
20 second column and the third column, that there's a change in
21 shape, when we go to the second column, before the light
22 enters the MLA, and the third column, after the light has
23 exited the MLA. And so this change in shape, we believe,
24 confirms Apple's infringement.

25 An the issue of validity, Apple has said it will

1 present an invalidity defense based upon its original watch,
2 the Series 0. But Apple's evidence of this watch is not
3 corroborated. Apple's opening slides will show you dates
4 and images of the Series 0 watch that appear nowhere in the
5 exhibits identified for those slides.

6 Apple's expert also relies on documents that do
7 not corroborate the prior art status or structure of that
8 watch. But, regardless, the evidence will show this watch
9 lacked the ability to measure oxygen saturation.

10 The evidence will also show that Apple's other
11 references for validity, such as Iwamiya, did not disclose
12 use for measuring oxygen saturation.

13 And Sarantos, the evidence will show that that
14 reference is discussing a configuration for use with
15 irrelevant wavelengths of light that are not used for
16 measuring oxygen saturation.

17 Similar to the Multi-Detector Patents, Apple has
18 claimed it will present a defense of prosecution laches,
19 and, again, the publicly available prosecution history of
20 this patent family refutes that defense and shows the
21 activities Masimo took to move its patents towards issuance.

22 Again, Apple has identified no expert on this
23 issue, and no witness that will speak to any prejudice Apple
24 has faced.

25 I now will be addressing Apple confidential

1 business information in addressing the '127 patent, so,
2 Mr. Kiani will need to leave the room.

3 JUDGE BHATTACHARYYA: We're moving on to the
4 Apple confidential record.

5 (Whereupon, the hearing proceeded in confidential
6 session.)

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1 O P E N S E S S I O N

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3 JUDGE BHATTACHARYYA: We're moving back to the
4 public record. You may proceed.

5 MS. SWAROOP: Thank you, Your Honor.

6 Apple's validity defense for the '127 temperature
7 patent is based on obviousness, but the evidence will show
8 that no combination of prior art shows a thermal mass
9 thermally coupled to the LEDs and the thermistors so that
10 the thermistor's temperature measurement can meaningfully
11 estimate operating wavelengths of the LEDs.

12 Now you're going to see in Apple's slides a
13 mention of a Scarlett reference in connection with the
14 thermal mass claim language for the '127 patent. But
15 Scarlett is not one of the references Apple is relying upon
16 for its obviousness grounds. It's merely one of the many
17 state-of-the-art references that appear throughout Apple's
18 pre-hearing brief.

19 You will also hear evidence of commercial
20 success, awards for Masimo's rainbow« technology, and
21 teaching away in the prior art, all of which support
22 nonobviousness of this invention.

23 The last point I'd like to address is the remedy
24 Masimo is seeking for Apple's activities. Masimo is seeking
25 both a limited exclusion order and a cease and desist order

1 against the Apple Watch Series 6, Series 7, and any Next
2 Generation Apple Watch that includes these same light-based
3 physiological monitoring features that infringe Masimo's
4 patents.

5 However, what is very important to note here is
6 that Masimo is not seeking exclusion of every Apple Watch.
7 As we will show, Apple has sold other watches with different
8 back surfaces before it introduced the sensor design and the
9 blood oxygen feature that began with Series 6. We're not
10 seeking any remedy in this investigation regarding those
11 other watches.

12 Apple has sold tens of millions of those other
13 watches, and the remedies we are seeking here would not
14 impact Apple's ability to import and sell those watches.

15 Our ask is not a prohibition on Apple's ability
16 to import tens of millions of watches from its factories in
17 Asia if it chooses to do so. Rather, Apple should not be
18 allowed to import and distribute watches with the pulse
19 oximetry sensor of the Series 6, Series 7, and future
20 watches, because those watches infringe the Masimo and
21 Cercacor patents that protect our domestic industry, and
22 that is a violation of Section 337.

23 We welcome the opportunity to present our
24 evidence to you. Thank you, Your Honor.

25 JUDGE BHATTACHARYYA: Thank you.

1 Mr. Mueller, you may proceed.

2 OPENING STATEMENT BY RESPONDENT

3 MR. MUELLER: Thank you very much, Your Honor.

4 Good morning, and thank you again for your time and
5 consideration at this hearing.

6 Let me begin by noting some of the folks who will
7 also be presenting witnesses over the course of this
8 hearing. They include my colleagues Jonathan Cox, Sarah
9 Frazier, Nina Garcia, Derek Gosma, Mark Selwyn, and Cindy
10 Vreeland.

11 On behalf of all of them and also the folks who
12 are helping us behind the scenes here, and, most
13 importantly, on behalf of our client, Apple, we do want to
14 thank you for your time and your consideration. Apple
15 respects this agency and this process, and we're going to do
16 our best over the course of the hearing to present the best
17 possible evidence on the issues before Your Honor.

18 Let me also show you some pictures right now of
19 the Apple engineers who will testify live over the course of
20 this hearing.

21 Mr. Brian Land is the head. He is the Chief of
22 the Health Sensing Hardware Group within Apple. He has been
23 working at Apple for over 15 years, and, as I mentioned, he
24 bears lead responsibility for developing the health sensing
25 hardware within the Apple Watch.

1 Along with Mr. Land we have five of his
2 colleagues. Dr. Paul Mannheimer, who, as I noted, will be
3 our corporate designee at this hearing. Dr. Vivek
4 Venugopal, Dr. Saahil Mehra, Dr. Steve Waydo, and Dr. Ueyn
5 Block, five Ph.D.s, and the gentleman who runs the group,
6 Mr. Land.

7 Why have we brought these six engineers to
8 testify before Your Honor? Well, the first reason, of
9 course, is that Apple does respect this agency and this
10 process, and the second reason is Apple firmly believes that
11 the facts in this case are decidedly on its side and wants
12 to provide Your Honor with the best possible evidence of all
13 the issues Your Honor needs to decide in this investigation.

14 Now let me take down their pictures for just a
15 moment and turn a little bit to the issues at the heart of
16 this case.

17 As Ms. Swaroop mentioned, Masimo and Cercacor,
18 who I'll refer to for simplicity as Masimo, are requesting
19 an import ban on the Series 6 and Series 7 watches. Now
20 Ms. Swaroop just suggested that it may not be that big of an
21 impingement on Apple because there are other watch models.
22 In fact, these are the two leading and most advanced models
23 of Apple Watch, and Masimo is trying to sever the supply
24 chain of those devices to the United States.

25 Now the agency has the power to effect that

1 supply chain cut, but the question is, is there a proper
2 basis for doing so in this case. And we believe the
3 evidence will conclusively show there is no proper basis for
4 an import ban of any type, let alone against these
5 particular devices.

6 In fact, this case is being used at Masimo for an
7 improper legal purpose and an improper business purpose.
8 And let me explain what I mean.

9 Back in 2020 Masimo filed a District Court action
10 in the Central District of California against Apple alleging
11 trade secret misappropriation and patent infringement. That
12 case is proceeding today.

13 Now there's very significant problems with the
14 claims in that case. I'm not going into the details now,
15 but we believe there are profound problems with the trade
16 secret allegations, the patent claims have been stayed
17 pending IPR proceedings where literally dozens of claims
18 have been invalidated by the Patent Office during the IPR
19 proceedings.

20 Those merits issues for another day for another
21 court, but I note that, because of the relevance to this
22 particular investigation, is that it was initiated
23 explicitly because of Masimo's dissatisfaction with the pace
24 of the District Court case.

25 And, Your Honor, respectfully, we believe that

1 initiating an investigation on those grounds is not a proper
2 purpose, and, moreover, it led to Masimo prematurely filing
3 this case, its complaint in this case, long before any
4 mature domestic industry existed for at least four of the
5 five patents-in-suit, and for all five of them we believe
6 there's no domestic industry meriting an exclusion order in
7 this case.

8 Now from a business perspective, there too we
9 find that the case that's being brought for what we believe
10 to be an improper purpose. For four of the five patents in
11 this case the alleged domestic industry product is the
12 so-called Masimo Watch, which has recently been given by
13 Masimo the name W1.

14 That watch cannot be purchased, cannot be
15 purchased, in any store in the U.S. today, let alone at the
16 time when the complaint was filed.

17 Now as Your Honor knows from earlier briefing in
18 this case, we believe the law is clear that, in the absence
19 of special circumstance, the relevant time for assessing
20 whether there's a sufficient domestic industry is the date
21 of filing of the complaint. And we believe the evidence
22 will show beyond a shadow of a doubt there was no legitimate
23 domestic industry as of that date, nor is there one today,
24 with respect to the Masimo Watch.

25 And what we believe is happening is Masimo is

1 trying to clear a path for a hoped-for aspirational product,
2 clear a path by banning the import to the U.S. of the
3 leading Apple Watch models.

4 Now, again, there's just no proper basis for
5 doing that. And you can see, as you get into the substance
6 of the patent issues, what we believe the evidence will show
7 to Your Honor is that, with all of the patents-in-suit,
8 Masimo has been trying to stretch disclosures and written
9 descriptions that were directed to clinical products of the
10 type that Masimo has focused on historically. They have had
11 some consumer products, but far limited offerings as
12 compared to their clinical products.

13 These patent disclosures were drafted in the
14 context of their historical focus on clinical products, and
15 they have tried to stretch them by drafting claims to cover
16 consumer products like the Apple Watch.

17 Now the reason why that's significant is the
18 clinical setting is quite different than the consumer
19 wearable setting. In the consumer wearable setting, as you
20 will hear from the six Apple engineers who will testify to
21 Your Honor, there are very special engineering challenges
22 that are associated with consumer devices.

23 Apple engineers are forced to engineer their
24 sensors within the context of a very small form factor, a
25 small device, that needs to coexist with a huge array of

1 other components within those devices, many of which have
2 nothing to do with the health sensors, but can interact with
3 those sensors through electromagnetic interference or
4 vibrations or other forms of effect.

5 It is a tremendous engineering challenge to have
6 to design health-sensing hardware in the context of these
7 multipurpose devices, which reside in a beautiful,
8 attractive design, industrial design, that Apple has placed
9 a special focus on.

10 These patents don't teach anything about how to
11 achieve the engineering challenges that Apple has faced, yet
12 Masimo is trying to assert claims that were drafted to
13 stretch and stretch, to cover these types of consumer
14 products, and, as Your Honor, we believe, will find, based
15 on the evidence, we believe the evidence will show,
16 Your Honor, the stretch is, A, not far enough to establish
17 actual infringement, and, B runs headlong into prior art.

18 The basic problem they face, Your Honor, is that
19 by stretching these claims they have drafted them to cover
20 the lowest common denominator technology that can be common
21 to both clinical and consumer products, but that type of
22 technology has been known long before these patents were
23 filed, indeed, in some cases, decades before these patents
24 were filed.

25 And also, as I said, they didn't stretch quite

1 far enough. There are distinctions between each of the
2 asserted claims and the Apple Watch. So we believe the
3 claims are both invalid and not infringed.

4 And, to boot, as I mentioned earlier, the
5 domestic industry contentions in this case, I think
6 Ms. Swaroop suggested at one point that there's a burden on
7 Masimo from having to put in evidence on undisputed issues.

8 Let me be clear. Domestic industry issues are
9 hotly contested. We think for four of the five
10 patents-in-suit, there's nothing remotely close to domestic
11 industry as of the time of the complaint nor even today, and
12 for the fifth product there are severe problems in the
13 economic reporting data. And also for that product there's
14 no competition whatsoever between the Apple Watch and the
15 rainbow« sensors. So there is, indeed, a dispute on those
16 issues as well.

17 In short, to justify this sort of supply chain
18 cut, they would need to establish a proper factual basis on
19 all of these different issues, and we think the evidence
20 will show, again and again, they cannot meet their burden.

21 So, with that, Your Honor, I'll turn to the
22 evidence, some more specific evidence, which I'll try to
23 preview and contextualize. I'll start with just a few words
24 about Apple.

25 Apple, of course, has been around for decades.

1 It was started in the 1970s in California by Steve Jobs and
2 Steve Wozniak working out of a garage initially. The
3 company has grown over the years, and today employs over
4 100,000 employees across the U.S. and overseas as well.

5 But the research and development is headquartered
6 in California, including at the headquarters building that
7 you see right here. And it is, by any definition, an
8 American business success story.

9 Over the years Apple has focused on industrial
10 design, and I say that not just as a history lesson, but
11 because this has particular salience and relevance to this
12 investigation, Your Honor. Over the years Apple has gone to
13 great lengths to create products that look attractive, in
14 some cases they believe beautiful, and are very easy to use.
15 But at the same time, at the same time, have immense
16 computing capabilities within them, hugely powerful devices,
17 but in these attractive, easy-to-use packages.

18 And achieving all those goals takes the talent of
19 thousands of engineers, including the six who Your Honor
20 will hear from. They helped design the Apple Watch or
21 different parts of the Apple Watch.

22 The original Apple Watch, the Series 0, was
23 released in 2015. Mr. Land, the head of the Health Sensing
24 Hardware Group, was at the company at the time, and he will
25 explain to you some of the work that he personally did in

1 connection with the Series 0 watch.

2 The Series 0 watch had a wide array of software
3 capabilities. It allowed for users to customize the apps
4 that they could use on the watch, as just one example.
5 Music can be downloaded to use the watch, the original
6 watch, as, effectively, a wrist-worn iPod.

7 It also also some health functionality, including
8 calorie tracking, standing and exercise apps, and it had a
9 heart rate sensor that Mr. Land himself worked on.

10 It also had LEDs and photodiodes for various
11 purposes, including heart rate sensing, and it had a curved
12 back crystal. Your Honor is going to hear a fair amount
13 about the back of the Apple Watch, including the accused
14 Series 6 and Series 7 models. But Your Honor will hear that
15 the shape, a dome shape of the watch, has been constant
16 since the Series 0.

17 And the reason for that domed, curved shape,
18 there are multiple reasons, one of which has to do with
19 charging. Your Honor may have seen that the Apple Watch can
20 be placed in a charging cradle. The dome fits snugly in the
21 cradle and is designed to align the watch with the charging
22 hardware components so that the charging can occur in an
23 efficient way. There was a very practical reason for that
24 dome shape. Again, that was part of the original Apple
25 Watch.

1 Over the years the Apple engineers have made
2 various improvements to the Apple Watch, the Series 1 and 2,
3 Series 3, Series 4, 5, and then we arrive at the Series 6
4 and 7, the accused products in this investigation,
5 achievements over the years by various Apple engineers to
6 move the ball forward.

7 Now I'm just going to note here, those
8 achievements owe absolutely nothing to Masimo trade secrets,
9 Masimo proprietary information. Any suggestion that the
10 Apple engineers took Masimo information to put in the
11 hardware or software of the Apple Watch is false.
12 Your Honor will hear that firsthand from six different Apple
13 engineers.

14 The Series 6, among the improved features and
15 functions, included a processor and altimeter, a new and
16 better display, a new operating system. It also supported
17 some features used in the earlier models.

18 It included a blood oxygen sensor. This was the
19 first Apple Watch to include a blood oxygen sensor.
20 Your Honor will hear precisely how that sensor was
21 developed. It took years of hard work, including by the
22 folks who have come here to testify before Your Honor.

23 It also, the Series 6, supported features
24 available in some earlier models, including health
25 functionality.

1 Series 7, another advance in the display, some
2 improved durability and environmental sealing. As
3 Your Honor will hear, the watch is a waterproof device
4 designed for swimming and other activities that could expose
5 the device to water or moisture, other contaminants.

6 It is designed explicitly not to have holes in
7 it, which would allow water or other contaminants to enter
8 into the structure. It is a sealed structure. It always
9 has been. It has no openings.

10 The Series 7 also has the WatchOS 8 operating
11 system, a new advance in the operating system, and it
12 retained the blood oxygen sensor and other features like the
13 heart rate monitor from the Series 6.

14 Now, if we look at the full range of Apple
15 models, they represent years upon years of hard work by
16 many, many, many engineers within Apple. And there are, of
17 course, far more features in these devices than just the
18 health-sensing hardware. There's a whole panoply of
19 features and functions available to Apple Watch users. Even
20 within the context of the health-sensing hardware there's
21 far more than just the blood oxygen sensor.

22 So what is occurring in this case is Masimo is
23 targeting a sliver of the function in the overall watch and
24 arguing that sliver justifies an import ban on the entire
25 Series 6 and the entire Series 7. And we believe the

1 evidence will show no such thing.

2 Now if we shift to Masimo, the evidence will show
3 that Masimo has focused over the years to clinical products
4 for doctors' offices and hospitals and home settings under
5 the care of a clinician. Now let me be clear. They have
6 released certain consumer products over the years, not every
7 one of their products was purely for a clinical setting, but
8 the majority of their business has been in the clinical
9 setting, a substantial majority.

10 And even their consumer products, we believe you
11 will see, are far different from the consumer wearables like
12 the Apple Watch.

13 Here's some examples of Masimo products. Credit
14 where credit is due. We think Masimo has made some valuable
15 contributions to the clinical setting, and we respect the
16 work that they have done in connection with public health in
17 that setting.

18 But it's a different setting than the consumer
19 wearables marketplace. The engineering challenges are
20 different. The technological solutions to those challenges
21 are different. And there's a fundamental disconnect between
22 patent applications drafted in the context of products like
23 the ones you see here and the Apple Watch. And they can't
24 bridge that gap, we believe, without running headlong into
25 the prior art, and, even if they do, they haven't stretched

1 far enough in terms of how they have drafted the claims to
2 capture the Apple Watch. There is no infringement.

3 So let me turn to the patents, the '127, '745,
4 and the collection of related patents, the '501, '502, and
5 '648, which we call the Poeze patents, after one of the
6 named inventors, and we believe that for all of these
7 patents you will see the same pattern, this pattern of
8 trying to stretch disclosures, drafting claims directed to
9 lowest common denominator technology that was known years
10 before these patents were filed or the parent applications.

11 And even despite that, even despite the stretch,
12 failing to stretch far enough to actually establish
13 infringement of the Apple products. In all five of these
14 patents, we also believe that there's not going to be a
15 showing of a sufficient domestic industry to carry Masimo's
16 burden on that important issue.

17 So let me, for an example, the timeline of the
18 prosecution of these patents, the timeline for the '745
19 patent.

20 We believe that the timeline tells the tale for
21 this patent and for others as well. If you look at the
22 chronology, Your Honor, the Apple Series 0 watch, the very
23 first Apple Watch model, was released on April 24th, 2015.
24 The provisional application that Masimo filed for the '745
25 patent was not filed until July 2nd of 2015. And then the

1 application that actually issued as the asserted '745 patent
2 was filed in March of 2020, years after various Apple Watch
3 models had been introduced.

4 If we look at the timeline for the Poeze patents,
5 the '501, the '502, and the '648, again, the pattern is
6 perhaps even more pronounced. Here we have the original
7 provisional application filed in 2008. I'll try to
8 highlight that, if I can, with a laser pointer. Then
9 there's a variety of applications filed in the intervening
10 period before the three applications that issued as the
11 '501, '502, and '648.

12 But if Your Honor looks at the dates, the dates
13 for each of those applications in that interim period
14 occurred shortly after an Apple Watch release. Apple Watch
15 Series 0, April 2015, next application, December of that
16 same year. Apple Watch Series 4, released September 2018,
17 four more applications filed by Masimo starting in December
18 of 2018. Apple Watch Series 5 released, September of 2019,
19 two more applications filed starting in December of 2019.
20 And then three more applications filed in 2020 shortly after
21 the Series 6 watch was released in September of 2020.

22 Masimo may claim this is a coincidence. We
23 believe the evidence will show it was not a coincidence at
24 all.

25 The '127 patent, claim 9, is a good first example

1 of how Masimo has had to draft claims directed to lowest
2 common denominator technology in an effort to bridge the gap
3 between clinical products and consumer wearables like the
4 Apple Watch.

5 If you look at the claim limitations, they claim
6 basic components, like a plurality of light-emitting
7 sources, temperature sensor, a detector capable of detecting
8 light. These are all old as the hills.

9 And what the claimed innovation here is to use
10 something they call a thermal mass along with a temperature
11 sensor thermally coupled to the thermal mass and capable of
12 determining a bulk temperature for the thermal mass.

13 So the purported innovation here is to regulate
14 the bulk temperature using this thermal mass as a regulation
15 component.

16 Now from the joint technology tutorial presented
17 to Your Honor, and this is the joint tutorial, it is known,
18 has been known for long, a long, long time, that by
19 adjusting the temperature -- the temperature of an LED
20 device can effect the wavelength of the light, the
21 temperature and the wavelength of the light have a
22 relationship, and there can be variation of that wavelength
23 based on temperature. That was known.

24 Webster is just one example of a well-known
25 treatise from 1997 that teaches that same idea, variation of

1 wavelength based on temperature. So that's clearly not a
2 patentable concept.

3 Now the claims use this term, a thermal mass, a
4 thermal mass, and that particular phrase, a thermal mass, is
5 an unusual combination of words that they are accusing --
6 may shed some light on what they mean by it -- what they are
7 accusing are copper substrate portions within the Apple
8 Watch on which certain components reside.

9 But Your Honor will see evidence that the
10 substrate technology used in sensor devices, again, has been
11 known for decades. One example is Mendelson from 1991,
12 which was a blood oxygen sensor which had a substrate, and
13 if a substrate qualifies as a thermal mass, Mendelson had
14 it.

15 Scarlett is another example. This one shows
16 copper lines through the substrate, copper pathways, like
17 the copper pathways that are accused in the Apple Watch.
18 Again, these types of basic structures have been known for
19 years and years, decades and decades.

20 So even the purported innovation of that patent,
21 we believe the evidence will show that, if a thermal mass to
22 regulate bulk temperature can be satisfied by mere PCB or
23 other forms of substrates, there's no possible way that they
24 can survive scrutiny in light of the prior art, the claims
25 are invalid.

1 If we turn to the '745, again, we see a similar
2 pattern, claims that recite lowest common denominator
3 technology in an effort to bridge the gap from the clinical
4 setting to the consumer wearables setting.

5 This is the patent which Ms. Swaroop referred to,
6 which changes the shape of light, according to the
7 disclosure. It involves components like a plurality of
8 light-emitting diodes, a plurality of photodiodes, light
9 block processor. These are basic old components.

10 But the key purported innovation here is to take
11 light from a light-emitting diode, which is emitted in a,
12 quote, first shape, to put that light through a material
13 configured in a particular way, according to the claims, to
14 change the light from a first shape into a second shape.

15 So the purported innovation here literally is
16 running light through a component to change the shape of the
17 light. That's the purported innovation.

18 And that is no innovation at all. Just one
19 example is the Iwamiya patent filed by Casio Computer. This
20 was filed back in 2010, twelve years ago.

21 Here you can see, Your Honor, in red are
22 light-emitting units. The light in these units passes
23 through various structures, including this annular light
24 guide. That's that ring-shaped component in yellow below.
25 The light that comes out the other side is in a new shape, a

1 ring. That's exactly one of the shapes that is claimed as
2 inventive in the '745 patent.

3 So Iwamiya teaches this basic idea of passing
4 light through a structure such that it arrives out the other
5 side in a different shape.

6 Again, there's many examples of this. This is
7 simply one.

8 Another example is the Fresnel lens in the
9 original Series 0. In the Fresnel lens, there was a grooved
10 Fresnel lens. It was a grooved lens that was used in the
11 Series 0. And for one of the light-emitting diodes or LEDs,
12 the one in red that you can see in the top left-hand corner,
13 the light would pass through some of the grooved sections of
14 the lens, and it would come out the other side in a crescent
15 shape.

16 So, again, if that's the purported innovation
17 here, changing light from one shape to another by running it
18 through a structure, the Fresnel lens in the Series 0 is
19 certainly an example of that.

20 Ms. Swaroop suggested there was some dispute as
21 to the date. There will be no dispute. The Series 0 watch
22 was released to great public fanfare in 2015. The Apple
23 witnesses will testify to exactly that. This is not a fact
24 that can be reasonably contested. It was a public,
25 commercial release to the world, and we'll certainly put in

1 evidence on that point, but the Fresnel lens in that device
2 did change the shape of certain light emitted by light
3 diodes.

4 Again, we would never claim that's a patentable
5 invention, but, if that's the contention, the Fresnel lens
6 invalidates.

7 Now if we turn to the Poeze patents, '501, '502,
8 and '648, once again, we see the same pattern. These are
9 the so-called Multi-Detector Patents according to Masimo.
10 And these claims are long, but if you look at any portion of
11 them, this is just old technology.

12 LEDs, photodiodes, a convex surface are just some
13 examples, storage device, a strap. The length of the claims
14 should not be taken as any indication of their innovation.
15 Again, every single part of these claims was old as the
16 hills.

17 Here's what they submitted as patent, prior art
18 to the Patent Office, page after page of prior art
19 references, which speaks to how crowded this field was,
20 speaks to some of the rudimentary features they were trying
21 to claim as patentable.

22 Even though they submitted all this prior art,
23 they didn't submit enough. We will show Your Honor many
24 prior art references that were not before the Patent Office.
25 Those include the ones you see here. These are all

1 physiological sensors, including some blood oxygen sensors,
2 and they all include multiple detectors.

3 The purple components that we colorized here,
4 Your Honor, are all photodiodes. As you can see, every one
5 of these devices has multiple detectors for detecting light,
6 multiple photodiodes, and it goes on. Here's another slide
7 of additional photodetectors from over the years.

8 If you look at the dates, Your Honor, you can see
9 some are from the 1970s, 1978, into the '90s, into the
10 2000s, and, again, it continues.

11 So multi-detectors, there's nothing patentable
12 about multiple detectors. Reference after reference after
13 reference speaks to that.

14 Ms. Swaroop said we have disclosed dozens of
15 patents and other publications as state of the art evidence.
16 She is exactly right. We certainly have. And there's a
17 good reason for that. These patents are directed to
18 technology that was taught many times over in decades that
19 preceded these patent applications.

20 To the extent that the contention here is that
21 the convex surface requirement is somehow a patentable
22 advance, it's not. Again, you can see it over and over
23 again, including the Smart reference from 1971, the Cramer
24 reference from 1978, on and on and on.

25 And if we -- even if we focus on particular

1 combinations of these old components, Your Honor will see
2 that we have evidence of that too. One example is the
3 Lumidigm patent.

4 You will hear live testimony from Dr. Robert
5 Rowe, a former engineer at Lumidigm. He is one of the named
6 inventors on the Lumidigm prior art reference that you see
7 here, which is directed to an electro-optical sensor.

8 Now, Ms. Swaroop mentioned that there's a lot of
9 different use cases disclosed in the Lumidigm patent, and
10 she is correct about that. One of the use cases is blood
11 oxygen sensing, and you can see the highlighted text here,
12 blood oxygen sensing using light detectors with multiple
13 diodes.

14 You can see here the multiple photodiodes and the
15 multiple emitters on the right, the emitters in red, the
16 diodes in purple, and there's an explicit disclosure of
17 using these types of configurations and structures within a
18 watch. Fig. 8B shows using the multiple detector sensor
19 taught by Lumidigm in a watch.

20 To the extent there's some critique by Masimo of
21 the sufficiency of the disclosure of Lumidigm's teaching
22 with respect to a watch, well, if they argue that, they are
23 going to have a big problem with the Poeze patents, which
24 have a threadbare disclosure of actually using their sense
25 technology within a watch. The Lumidigm disclosure is at

1 least as much if not more than what's in Poeze.

2 But what is clearly in Lumidigm are multiple
3 detectors, multiple photodiodes, and a convex protrusion.
4 It teaches a compound curvature on the optical surface.

5 So even if one looks at the combination of all
6 these old elements recited in these long claims, Lumidigm
7 taught it.

8 Moreover, Professor Steven Warren from Kansas
9 State University, who is one of our two independent
10 technical experts in this case, he will explain to
11 Your Honor, not only all the prior art references that we've
12 looked at from third-party publications and patents and so
13 on, but also that one of his undergraduate students created
14 a blood oxygen sensor using multiple detectors.

15 So, again, the shorthand that Ms. Swaroop used to
16 refer to the Poeze patents was the multiple detector
17 patents. Here is an undergraduate student project that had
18 multiple detectors used for blood oxygen sensing. That too
19 is prior art to the Poeze patents.

20 Now if we look at the Asserted Patents, not only
21 is there prior art problems, there's also section 112
22 problems. For several of the claims that are asserted in
23 this case, the stretch that's been executed by Masimo during
24 the drafting of those claims has gone so far as to
25 disconnect the claims from the written descriptions within

1 the patents.

2 There is an insufficient written description to
3 demonstrate possession of the claimed invention and
4 enablement of those inventions and section 112 problems.
5 We'll get into the details of those over the course of the
6 case.

7 Now as I said, for each of these patents we see
8 this pattern of stretching and covering -- drafting claims
9 directed at lowest common denominator technology in an
10 effort to bridge the gap from clinical to consumer
11 wearables, but the stretch was not far enough.

12 There is no infringement with respect to the
13 Apple Watch because distinctions remain as to each of the
14 patents in the case.

15 For the '127 patent, there's a requirement of a
16 thermal mass -- I talked about that earlier -- a temperature
17 sensor thermally coupled to the thermal mass and capable of
18 determining a bulk temperature for the thermal mass.

19 Now at this point, Your Honor, I'm going to go on
20 the confidential Apple record before I discuss the next
21 slide, so I would ask that Masimo and the public be excused.

22 (Whereupon, the hearing proceeded in confidential
23 session.)

24

25

1 O P E N S E S S I O N

2

3 JUDGE BHATTACHARYYA: We're moving back to the
4 public record.

5 MR. MUELLER: May I proceed?

6 JUDGE BHATTACHARYYA: Yes, you may.

7 MR. MUELLER: Thank you, Your Honor.

8 The domestic industry requirement, of course,
9 Your Honor is well familiar that it requires there be a
10 domestic industry that exists or is in the process of being
11 established. And we believe these requirements are not met
12 for the asserted domestic industry products in this
13 investigation.

14 Now, I won't belabor this, because Your Honor has
15 received extensive briefing on the issue, but we do believe
16 the law is clear that the relevant time for assessing the
17 satisfactoriness of a domestic industry is at the time of
18 the filing date of the complaint.

19 Among the cases that set out that point is a
20 Certain Thermal Plastic Encapsulated Electric Motors case,
21 which says, ordinarily, the relevant date at which to
22 determine if the domestic industry requirement is satisfied
23 is the filing date of the complaint.

24 And as this case proceeds to explain, the
25 Commission has explained that it will consider

1 post-complaint evidence regarding domestic industry only in
2 very specific circumstances, i.e., when a significant and
3 unusual development has occurred after the complaint has
4 been filed.

5 No such event has occurred here. In fact,
6 there's not even an allegation of a significant and unusual
7 development occurring after the complaint. So we believe
8 the relevant time for assessing the domestic industry is the
9 date of the complaint.

10 But at whatever point Your Honor assesses it,
11 even today, there is no proper domestic industry for these
12 patents.

13 To take the Masimo Watch, which is the asserted
14 domestic industry product for four of the five patents, the
15 evidence will show it's a bit of a moving target for us to
16 even figure out when the so-called project started. Witness
17 testimony has varied. And the details of the research and
18 development period really remain opaque to us in important
19 respects. What exactly happened in the years before the
20 amended complaint was filed in July of 2021 is a bit of a
21 mystery.

22 I'm sure we're going to hear testimony on this
23 subject from the Masimo witnesses, but, as Your Honor is
24 aware, we have been fighting furiously to get information on
25 this subject for months and months and months and months,

1 and it's been a continual moving target in terms of what the
2 physical product or products are that evidence this
3 development and the details about how those products work or
4 don't work, who developed them, or didn't develop them.
5 It's a question mark.

6 Even if we look at the period for after the
7 complaint was filed in July of 2021, it's clear that R&D
8 continued. There was no finished Masimo Watch when that
9 complaint was filed -- not even close.

10 Even as of today you cannot buy this Masimo W1
11 watch in any store in the U.S. It is not on the open
12 marketplace. It's not a commercial product in competition
13 with the Apple Watch even today, even today, and certainly
14 not as of the time of the complaint.

15 Your Honor, at this point I am going to go into
16 Masimo confidential information, so I would ask to go on the
17 Masimo confidential record.

18 (Whereupon, the hearing proceeded in confidential
19 session.)

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1 O P E N S E S S I O N

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3 JUDGE BHATTACHARYYA: Why don't we take our
4 morning break at this time. We're on break for 15 minutes.

5 (Whereupon, the proceedings recessed at 11:06
6 a.m.)

7 (In session at 11:22 a.m.)

8 JUDGE BHATTACHARYYA: We're back on the record.
9 We're on the public record.

10 Is Apple's counsel ready to proceed as well? I
11 believe you're muted still.

12 MS. SWAROOP: Still can't hear you.

13 MR. MUELLER: Thank you. We're ready to proceed,
14 Your Honor.

15 JUDGE BHATTACHARYYA: Ms. Swaroop, are you ready
16 to call your first witness?

17 MS. SWAROOP: I am, Your Honor. Before we do
18 that, we do have evidence that is being received without a
19 sponsoring witness. So we would like to move that in now
20 before we begin our examination of our first witness. We
21 did provide a list to Apple's counsel yesterday based on
22 Your Honor's rulings. I do think we have agreement with
23 regard to the list.

24 JUDGE BHATTACHARYYA: The procedure we normally
25 follow is that you send it to the Bhattacharyya337 email

1 address so that I can have a copy to look at it, and then
2 I'll confirm on the record if there's no opposition and let
3 the evidence in.

4 Do you want to do that now or we can do it --
5 it's up to you.

6 MS. SWAROOP: Yes, Your Honor. We do have a list
7 electronically.

8 MR. MUELLER: Your Honor, I would just need to
9 confer with some folks to cross-check those numbers, so the
10 email procedure would be helpful to us.

11 MS. SWAROOP: Understood, Your Honor. We will
12 send the email and take care of this later. So I guess we
13 are ready to begin with our first witness. Mr. Joseph Re
14 will be conducting the examination.

15 For our first witness Complainants call Joe
16 Kiani.

17 JUDGE BHATTACHARYYA: I just wanted to make sure
18 the court reporter is still with us. Great. Thank you.

19 MR. RE: Good morning, Your Honor. Pleasure to
20 be here. If my voice sounds a little funny, I am a COVID
21 survivor. It's only my second day back in the office.

22 JUDGE BHATTACHARYYA: I'm glad to have you back.

23 MR. RE: Before I begin with Mr. Kiani, there
24 were some outstanding objections. I believe we are to deal
25 with those at the time I am going to introduce them rather

1 than argue about their admissibility in advance.

2 JUDGE BHATTACHARYYA: That's fine, if that's the
3 procedure -- that's fine.

4 MR. RE: Yes. There are four objected to
5 exhibits that I do want to introduce despite the objection,
6 and I'm ready to respond if argument is required.

7 JUDGE BHATTACHARYYA: Okay.

8 MR. RE: Thank you.

9 JUDGE BHATTACHARYYA: Welcome, Mr. Kiani. Do you
10 understand that you're under an obligation to tell the truth
11 here today?

12 THE WITNESS: Yes, Your Honor.

13 JOSEPH KIANI,
14 having been first duly sworn and/or affirmed
15 on his oath, was thereafter examined and testified as
16 follows:

17 DIRECT EXAMINATION

18 BY MR. RE:

19 Q. Good morning, Mr. Kiani. For the record, could
20 you please give your full name and spell your name?

21 A. Yes. My name is Massi Joseph E. Kiani,
22 M-A-S-S-I, Joseph, E, and K-I-A-N-I.

23 Q. What are your current positions?

24 A. I am chairman and CEO of Masimo and Cercacor.

25 Q. For how long have you been the CEO of Masimo?

1 A. Since inception. Since 1989 where I started
2 Masimo in my garage.

3 Q. Could you briefly tell us about your formal
4 education?

5 A. Yes. I have my bachelor's and master's from San
6 Diego State University in electrical engineering.

7 Q. And the master's, what was your master's degree
8 on at San Diego State?

9 A. Advanced signal processing, adaptive filters, AI.

10 Q. When you said you started Masimo in 1989, what
11 was your main purpose in starting Masimo?

12 A. I wanted to solve the motion artifact problem
13 with pulse oximeter.

14 Q. What exactly, briefly, is pulse oximetry?

15 A. Pulse oximetry is the noninvasive measurement of
16 arterial oxygen saturation and pulse rate using two
17 wavelengths of light passing through a tissue and looking at
18 the pulsatile information and normalizing that from the bulk
19 or the DC information.

20 Q. Now you mentioned this motion problem. Explain
21 to me what exactly is the motion problem.

22 A. Well, the assumption pulse oximetry makes, the
23 invention of pulse oximetry back in '72 with Dr. Aoyagi, is
24 that whatever pulsates is what we're interested in.

25 During motion the venous blood starts pulsating

1 at your frequency of motion. Venous blood is typically less
2 than 10 millimeter mercury or your arterial is probably 100,
3 120. So it's a Jell-O pool of blood.

4 So when you start moving, the venous information
5 starts getting in the signal, and it confused a conventional
6 pulse oximeter to give a normalized average of arterial and
7 venous saturation.

8 Q. And in addition to motion, what other major
9 problem did you learn about in tackling this motion problem?

10 A. Low perfusion. Low perfusion is when there's low
11 blood flow to the extremity. When your hands are cold, you
12 have low perfusion. I usually have cold hands, and that's
13 why I noticed the problem early on as an engineer with the
14 motion and low perfusion.

15 It's not just a low signal-to-noise problem.
16 When you have low perfusion, because your hand typically is
17 your radiator trying to keep you cool, when you have cold
18 hands, you're not getting enough really -- you're not
19 getting a lot of arterial blood supply.

20 So the venous saturation becomes really low, like
21 50 percent, versus when you're hot, it could be 97.

22 So when you move, when you have low perfusion, it
23 really shows the problem of motion with pulse oximetry.

24 Q. Mr. Kiani, you can stare at the camera. It looks
25 like you're probably looking at a screen of me.

1 A. Yeah. I'm looking at you. Sorry.

2 Q. Look at the camera. That's much better.

3 And who else was part -- why was this motion
4 problem significant in the hospitals?

5 A. Well, when the patients were first monitored for
6 pulse oximetry it was in the operating room where patients
7 are sedated and not moving, but when patients started going
8 outside the OR and being monitored in the ICU, intensive
9 care unit, or neonatal unit, or recovery room, they don't
10 stay still.

11 So when they began moving, they realized 70 to 90
12 percent of the alarms were false alarms due to motion
13 artifact and low perfusion.

14 Q. And what other were some of the effects of these
15 caused by motion problems in patients?

16 A. Well, crying wolf made clinicians ignore the
17 alarm. They were finding a lot of patients dead in bed,
18 literally, because they ignored the alarm.

19 And the neonatal intensive care unit where you're
20 not just worried about too little oxygen, but you're worried
21 about too much oxygen, because the baby's eyes aren't
22 developed yet, a lot of babies were getting severe eye
23 damage. Two thousand a year were becoming blind. In fact,
24 Stevie Wonder is blind from ROP, retinopathy of prematurity,
25 in the neonatal ICU.

1 Q. Can you say that word, ROP, more slowly for the
2 court reporter? What does it stand for?

3 A. Sure. Retinopathy of prematurity, so eye damage
4 due to prematurity, but it's really due to gyrations in the
5 oxygen in the neonatal ICU because they didn't have a
6 trustworthy pulse oximeter.

7 Q. And who joined you in this endeavor to begin
8 tackling the motion and low perfusion problems?

9 A. Mohamed Diab. Six months after I started Masimo,
10 Mohamed joined me, and he -- I started Masimo with a \$40,000
11 loan on my condo, and I wanted Mohamed to join, but he said
12 until you raise money from third parties, I'm not sure I'm
13 going to give up my job to join you, because I had raised by
14 then \$80,000 from other people, and Mohamed joined me.

15 Q. What did Mr. Diab do when he joined Masimo?

16 A. He developed the circuit and wrote the software.
17 Eventually he became our chief technical officer.

18 Q. And what techniques did you begin to use to
19 tackle this motion problem with pulse oximetry?

20 A. Well, I had studied, my master's work, area of
21 adaptive filters, which had been used in antisubmarine
22 warfare and satellite communication, and adaptive filters
23 were incredibly a useful tool because they could adapt to
24 the noise.

25 So when they saw noise coming at a certain

1 frequency versus another frequency, it would adapt its
2 coefficients to cancel. Because the problem -- canceled the
3 noise frequency. The problem is motion is happening in the
4 same window that we're looking for a signal, which is from
5 30 beats per minute to 300 beats per minute.

6 So adaptive filters, which I thought would work,
7 ended up working along with things we call parallel engines
8 and improved sensor design and hardware design to actually
9 get rid of the motion artifact problem and the low perfusion
10 problem.

11 Q. I'd like to delve in quickly to some of your
12 early products. If you could -- there's a book in there --
13 you can look at the book if you need to see the original.

14 We'll put it on the screen to try to save some
15 time, but, in particular, I'd like to direct your attention
16 to Complainants' or CX Exhibit 1370. If you can just tell
17 me what that is.

18 A. That is our 25th year anniversary annual report
19 from our incorporation.

20 Q. And I'd like to take you to page 4 of that
21 report, which begins a multipage timeline.

22 Do you see that?

23 A. I do.

24 Q. I wonder if you could briefly describe some of
25 your early products that are represented by this timeline.

1 A. Yes. So after our founding in '89, we show here
2 in 1995, for the first time we showed Masimo pulse oximetry
3 at the Society of Technology and Anesthesia and introduced
4 an OEM board called the MS-1 that we wanted companies that
5 made patient monitors to incorporate to have Masimo SET
6 level pulse oximetry.

7 Q. And how were your products initially received
8 bought these boards?

9 A. Well, everyone was blown away at what we could
10 do. The industry had tried for years to deal with the
11 motion artifact problem and had concluded that it was
12 impossible to solve. It was just inherent limitation of
13 pulse oximetry.

14 So when we showed people we could actually
15 measure-through-motion and low perfusion, everyone was just
16 blown away, and it was highly regarded.

17 Q. And then after 1995 I see some entries for
18 some -- your own products.

19 Do you see those? In 1998, '96, do you see
20 those?

21 A. Yes.

22 Q. What did you begin to do with your boards after
23 you introduced the MS1?

24 A. Well, first of all, by 1996 is when the first
25 time the product shipped to consumers, when this case being

1 the clinical consumers, and through an OEM we called Contron
2 from England, but you see the LNOP sensor, which is our low
3 noise optical probe sensor that was introduced then, later
4 we created our own standalone device with the help of a
5 company called Ivy Biomedical where we could show standalone
6 pulse oximeter with our technology rather than a
7 multiparameter patient monitor. And then NEC created the
8 standalone as well.

9 Q. I'd like you to take a look at what is page 35 of
10 this annual report, particularly the right side.

11 If you could briefly explain, what is this chart
12 shown in your annual report?

13 A. Well, by now numerous clinical studies had come
14 out showing the advantages of Masimo SET. This was the most
15 comprehensive done by Dr. Steven Barker. I think it was in
16 2002 that this came out.

17 And he compared Masimo SET to all of the
18 available commercial pulse oximeters at the time. And he
19 looked at their sensitivity versus their specificity, and
20 this is what is known as a ROC curve, a receiver operating
21 characteristic curve, which plots on the y-axis the
22 sensitivity, on the x-axis one minus the specificity. An
23 ideal product should go straight up. You can see we're
24 pretty close to that. That red is Masimo SET.

25 For example, at a 95 percent sensitivity, we have

1 about a 3 percent false alarm rate, where, if you just keep
2 going right, they get a lot worse, 30, 40, 50 percent false
3 alarm, and some of them are worse than the flip of a coin.
4 These are random number generators.

5 Q. For the record, I need you to define what's the
6 difference between the sensitivity of a device and the
7 specificity of a device.

8 A. Yes. Sensitivity is the ability to pick up true
9 alarm, a true event. Specificity is the ability to reject
10 false events. So you would like to have a product that's
11 100 percent sensitive and 100 percent specific.

12 Q. I'd like you to take a look at what has been
13 marked as Complainants' Exhibit 0777.

14 If you could just identify this document for the
15 record.

16 A. Yes. This is what we referred to as
17 bibliography. It summarizes some of the studies on SET,
18 Masimo SET pulse oximetry, and rainbow[®] pulse, which is this
19 multiwavelength blood constituent sensor that you put on
20 your site to measure 12 parameters.

21 Q. And tell me how many articles and studies have
22 confirmed the superiority of Masimo SET technology?

23 A. Over a hundred. Over a hundred. And what's
24 really unique here is in clinical world usually, whatever
25 you create, a third of the studies say they're better, a

1 third say they're worse, a third is neutral. In our case,
2 over a hundred said it was positive and a couple neutral.

3 Q. Now you mentioned the LNOP, the low noise optical
4 probe.

5 If we can go back to that, 1370, page 4, and blow
6 up that 1996 entry.

7 A. Yes.

8 Q. Is this -- tell me more about this sensor. Is
9 this a single patient use? What kind of sensor are we
10 talking about here.

11 A. If you zoom out of the picture --

12 Q. 1996.

13 A. Go back to 1996 LNOP, if you go look at that,
14 just go -- so what you see is it's an adhesive, single
15 patient use sensor, and that white bump you see there,
16 that's actually the invention there. That's a cavity that
17 the digit can sit on to minimize the impact of motion.

18 Q. How did you market this as assisting with your
19 Masimo SET performance?

20 A. Well, it was part of the system. We were trying
21 to solve this problem of motion artifact, as I mentioned,
22 and what we figured out that, if you put the soft tissue
23 into this cavity, you minimize the optical perturbation of
24 the site.

25 Q. And so it's the subject of a patent, I

1 understand?

2 A. Yes. In fact, the name of the sensor is the
3 title of the patent, low noise optical probe.

4 Q. For the record, it's Complainants' Exhibit 1586.
5 If we can call that up.

6 Is this the patent on that sensor?

7 A. Yes, it is.

8 Q. And if we can go to Fig. 4, I'd like you to
9 describe for the record what's shown in Fig. 4 of this '818
10 patent.

11 A. Yeah. Basically, the dashed lines is the body of
12 the sensor, where you see the flesh, the 128 is sitting on,
13 130 is the LED that's shining through the tissue going to
14 the photodetector 126. And you see the photodetector is
15 recessed, and it's actually in a cavity where the tissue can
16 sit on underneath where you have these protective dashed
17 line barriers to make sure you don't get light piping but
18 you get the light from the LED to the photodetector.

19 Q. And 128, is that the finger or tissue?

20 A. Yes.

21 Q. Okay. And the detector is 126 in the bottom of
22 the well, is that what you're saying?

23 A. Yes.

24 Q. Okay. And what did other sensors at that time
25 do, which made this a patentable invention, in your mind?

1 A. Well, everybody else in the industry would bring
2 the detector right up to the 128, the patient finger in this
3 case, and have -- try to be as planar and flat as they could
4 with the sensors, the detector and the LED.

5 Q. How did the medical device industry react to
6 Masimo's entry into the pulse oximetry market?

7 MR. MUELLER: I'll object for lack of foundation
8 as to what other folks may have reacted to. Mr. Kiani can
9 talk about his own reactions, but I would object on lack of
10 foundation grounds and hearsay grounds to the perspective of
11 third parties.

12 JUDGE BHATTACHARYYA: Mr. Re, did you want to
13 respond?

14 MR. RE: I'll rephrase.

15 Q. What did you personally experience when you
16 introduced your products in the medical device industry?

17 A. Well, after our patent was published, everybody
18 became all of a sudden quite smart. What they couldn't do
19 for over a decade before in solving the motion problem,
20 everyone all of a sudden seemed to have a solution.

21 So several companies violated our patents. We
22 ended up suing Nellcor, which is the market leader, about 90
23 percent market share at the time, and once we won that
24 litigation, everybody else except for two, a Chinese company
25 called Mindray and a European company called Philips, we had

1 to sue them. They wouldn't stop. And ultimately Mindray
2 settled right before trial, and Phillips went to trial, and
3 we won that litigation, both with the jury and the judge.

4 Q. I just want to go back to the Nellcor case.

5 What was the outcome of the Nellcor patent
6 infringement case?

7 A. Yeah, the Nellcor case, the court ordered that
8 040505 CI, which was the technology generations for Nellcor,
9 had infringed our IP, and the Federal Circuit court ordered
10 their injunction of those products.

11 MR. MUELLER: I'm sorry. I'm just going to move
12 to strike testimony about court decisions from other cases
13 involving patents not asserted in this case. I object and
14 move to strike Mr. Kiani's testimony characterizing
15 decisions from other bodies on a patent not in this suit.

16 JUDGE BHATTACHARYYA: Mr. Re?

17 MR. RE: The court can take judicial notice.
18 This is all public information in court filings, at the
19 Federal Circuit, in the Central District of California,
20 everything Mr. Kiani mentioned is all of public record.

21 JUDGE BHATTACHARYYA: The objection is overruled
22 as to weight, not admissibility.

23 Q. Does Masimo or you have an estimation of how many
24 patients a year are monitored with Masimo technology?

25 A. Yeah, over 200 million patients are monitored

1 with Masimo pulse oximetry now.

2 Q. And as CEO of Masimo, can you tell me how your
3 products made a difference in health care today?

4 A. Yes. Dramatic. We have helped reduce blindness
5 in the neonatal ICUs. These are all documented by clinical
6 studies, the outcome studies. We have helped save lives on
7 postsurgical patients that were on opioids.

8 And recently, even with COVID, when patients
9 couldn't be admitted to the hospital because there were too
10 many patients in the hospital with COVID, they used our
11 technology to send the COVID patients home, and a study had
12 just come out showing 70 percent reduction in mortality.

13 No other pulse oximeter has ever shown outcome
14 improvement except Masimo's.

15 Q. And has Masimo received awards for its technical
16 achievements?

17 A. Yes. Numerous awards. Over 50 awards.

18 Q. In fact, if you can just, for the record, tell me
19 what is Exhibit 1378, if we can call that up.

20 A. Yeah, this is some of the awards we've received
21 for our inventions, the latest one being FDA granting us,
22 basically, as one of eight companies that could help the
23 epidemic, the opioid epidemic.

24 Q. And since you solved this motion and low
25 perfusion problems, has Masimo continued to invest in

1 research and development in other areas?

2 A. Yes. Absolutely. Masimo's founding was all
3 about innovation. I was 24 when I started Masimo. So we
4 had to prove ourselves. So we have continued to, not only
5 advance pulse oximetry, even though we made it 30 times
6 better than what was out there before, but we had then taken
7 the two-LED pulse oximeter to multi-LED we call rainbow« to
8 measure 12 parameters noninvasively for the first time,
9 including noninvasive hemoglobin, noninvasive carbon
10 monoxide, methemoglobin, that have all been shown to save
11 lives dramatically in hospitals.

12 Q. I wonder if you can just briefly describe, who is
13 Cercacor, your other company?

14 A. Yes. In 1998, at the behest of shareholders and
15 our board, we spun off a company called Masimo Laboratories
16 at the time that we named Cercacor, which means closer to
17 the heart. And Cercacor or Masimo Labs was to go work on
18 nonvital signs measurements, like rainbow«, like measuring
19 hemoglobin and hopefully noninvasive blood glucose, and
20 that's what Cercacor is.

21 Q. And what's the -- is there a legal or technical
22 relationship between Masimo and Cercacor?

23 A. Yes. At the time of the spinoff and later
24 updated, we have a cross-licensing agreement between the two
25 companies. So, basically, the two R&D organizations, Masimo

1 and Cercacor, can collaborate, because whatever they invent
2 it's shared amongst each other for the various projects.

3 Q. And for the record could you identify
4 Complainants' Exhibit 1612?

5 A. Yes, that is the latest cross-license agreement
6 between Masimo Laboratories or Cercacor and Masimo
7 Corporation.

8 Q. So tell me, today, or since the relevant periods
9 in this case, what are the projects that Cercacor works on
10 relating to this case?

11 A. Well, Cercacor is who developed rainbow«.
12 rainbow« platform was supposed to be the platform that
13 helped us to get to noninvasive glucose, but along the way
14 we checked for measurements that were maybe slightly easier
15 but a lot harder than pulse oximetry, like carbon monoxide,
16 like hemoglobin. And we delivered. Those things worked and
17 they have been in the market for over 15 years some of them.

18 Q. Well, let's call up that exhibit, the timeline,
19 Complainants' Exhibit 1370, and let's take a look at pages 6
20 and 7 of the timeline, because it does go many pages.

21 Can you show us from looking at the timeline in
22 Exhibit 1370 what are some of the parameters and products
23 introduced through the rainbow« research platform?

24 A. Yes. Beginning 2005, with SpCO, that's the
25 noninvasive way of measuring carbon monoxide. Nothing else

1 is like it out there still. And it helps firefighters and
2 people that may have been in a situation where they could
3 have inhaled smoke and carbon monoxide to detect when their
4 CO has gotten dangerous.

5 Q. Are you aware of any other companies that offer
6 products in competition with these parameters shown in this
7 timeline dealing with SpCO and methemoglobin and hemoglobin?
8 Are you aware of any other competing commercial products?

9 A. No. No. Over the years we've seen announcements
10 from a few companies, but nothing in the market. We are
11 still the only company with these parameters. And, like I
12 said, noninvasive hemoglobin has been proven to now reduce
13 mortality by 30 percent in hospitals.

14 Q. Why is it called rainbow«?

15 A. Because we went from a two wavelengths of light
16 to more than seven, like the colors of the rainbow, so we
17 call it rainbow«.

18 Q. And did you patent some of the research that came
19 out of the rainbow« research and development?

20 A. Yes. Absolutely.

21 Q. I just need you to identify for the record joint
22 Exhibit 1, if we can call that up.

23 Can you identify that for the record?

24 A. Yeah, that is actually the '501 patent that's in
25 this case that describes some of the inventions that we did

1 with rainbow«.

2 Q. And you're a named inventor on here?

3 A. Yes, I am.

4 Q. Can you identify for the record Joint Exhibit 2?

5 A. Yes.

6 MR. MUELLER: I'm sorry. I apologize for
7 interrupting here. I do want to make an objection based on
8 that last answer.

9 The alleged domestic industry products in this
10 case for these patents are not the rainbow« sensors. So I'm
11 going to object to testimony in which Mr. Kiani is trying to
12 link these patents and suggest that the rainbow« sensors
13 practice them.

14 The alleged products for these patents are the
15 Masimo Watch, the alleged product I should say, for domestic
16 industry. There's no contention in this case linking the
17 Poeze patents to the rainbow« sensors, and it's far too late
18 to make that now. So I object.

19 JUDGE BHATTACHARYYA: Mr. Re?

20 MR. RE: I'm doing no such thing. I'm just
21 laying out basic facts. I haven't gone anywhere near the
22 subtleties that Mr. Mueller is alluding to. I'm just
23 setting forth facts. I'm not making any argument.

24 JUDGE BHATTACHARYYA: Is Masimo making a
25 contention that the '501 patent covers the rainbow« sensor

1 products?

2 MR. RE: No. It's the research of the rainbow«
3 that led to where we're going later in time. Correct. This
4 is way earlier. I'm just introducing -- these are the
5 patents that are in the investigation. Mr. Kiani is an
6 inventor. I was just trying to make them of record. I
7 wasn't trying to do anything further yet.

8 MR. MUELLER: Your Honor, so long as there's no
9 contention by Masimo that the Poeze patents, the '501, '502,
10 '648, practice the rainbow« sensor products or that those
11 products are the domestic industry, then we can keep going.

12 JUDGE BHATTACHARYYA: Mr. Re, as I understood it,
13 you would agree with that --

14 MR. RE: Yes, I do.

15 JUDGE BHATTACHARYYA: -- statement? All right.
16 Then we can proceed.

17 Q. So the third patent is the -- can we identify for
18 the record Joint Exhibit 3, which is the '648 patent, and
19 call that up.

20 This is the third, as Mr. Mueller calls it, the
21 Poeze patents?

22 A. Yes.

23 Q. And you're an inventor on all three of these,
24 right?

25 A. Yes. Yes, I am.

1 Q. And who are these other gentlemen that are
2 co-inventors with you?

3 A. Well, these were, some of them, my former
4 colleagues, but my colleagues from Cercacor. You'll see,
5 for example, Marcelo Lamago, who went to Apple in Cupertino;
6 Sean Merritt, Cristiano Dalvi, who have now gone to Rockley,
7 who is Apple-funded. But, yeah, these are my colleagues at
8 the time at Cercacor.

9 Q. Could you just briefly explain how the ideas, the
10 research that's embodied and disclosed in these patents,
11 tell me, what was it you were doing that led to the
12 disclosures of these three patents?

13 A. Yeah. We were trying to measure noninvasively
14 hemoglobin and glucose, which are much more difficult
15 measurements than oxygen. Just getting to the signal is
16 really challenging. And we had come up with this idea of
17 the active pulse.

18 Instead of your natural pulse, that can be very
19 small from point 1 percent of the signal to maybe 4 or 5
20 percent, we wanted to create an active pulse, so we created
21 our own pulsation to create maybe 5 to 10 percent signal, AC
22 signal.

23 Well, during that experimentation, one time the
24 active pulse detector hammer had been left in, and when it
25 pushed up against the digit we noticed the signal got

1 stronger, which was a surprise to us.

2 And that led us to this idea that, hey, maybe we
3 should use actually a protrusion instead of the opposite,
4 which we always had done, which was the cavity. And then,
5 of course, along with that came problems of protrusion.
6 There was now light piping issues, and so we had to account
7 for it. But, yes, that's how this idea came about.

8 Q. Why were you surprised by the strengthening of
9 the signal when applying an active pulse?

10 A. Well, because usually if you press against your
11 digit you see it become white, the capillary blood bed
12 pushes out of the way. So we thought that's going to cause
13 the signal to go away, where actually at the right level it
14 actually increases it. You can go too far and do what I
15 just said or too little where it won't impact it. But at
16 the right height you actually get a bigger signal.

17 Q. I'd like you to look at Fig. 3C of the Poeze
18 patents, what we call multidetector patents, whatever.

19 Could you just tell me what you mean by the
20 protrusion by looking at Fig. 3C?

21 A. Yeah, the protrusion is the 305, and you can see
22 how it kind of comes up, it's got those four windows, 320,
23 322, and 21, and 3, where the four detectors are underneath
24 it where the light would go through from the top portion
25 where the LED would shine through the digit if your finger

1 were inside this alligator clip. And that's where we
2 protected the light from piping as well with those windows
3 and the recession. Again, that, 305, is the protrusion.

4 Q. And you said that when you use the protrusion it
5 caused problems with light piping, is that what I
6 understood?

7 A. Yeah. It made it worse. So we had to take extra
8 care to make sure that the light that you see by the
9 detector has gone through the tissue, and that's where we
10 basically created, again, this well, this time, you know,
11 with obviously a cover, as a reasonable product, and we made
12 sure that only the light that went through the tissue went
13 to the photodetector.

14 Q. I understand you prepared a demonstrative to
15 explain the ill effects of light piping; is that right?

16 A. Yes.

17 Q. If you can call up that demonstrative.

18 A. Yeah. So what you see here, on the left side,
19 this is a reflectance mode. You see the light emitter
20 diodes on the left, and the detector on the right. What you
21 want is the light to go down to the tissue and come back up
22 to the detector. But if you don't design this properly, you
23 get light that goes from the LED directly to the
24 photodetector, without going through the tissue.

25 And the same phenomenon exists also with the

1 transmissions. This is adhesive transmission sensor around
2 the finger, and you can see how the light, instead of going
3 right to the detector, some of it, if you're not careful,
4 will go around and get to the detector without going through
5 the tissue, which causes inaccuracies in the measurement.

6 Q. And if we go back to Fig. 3C, did I hear you or
7 understand you, did the hole or the well, did that go all
8 the way to the tissue in Fig. 3C?

9 A. It did. It did. And then down to the floor of
10 the detector, with optical barriers in that well, the walls,
11 to make sure only the light through the tissue gets to that
12 photodetector that's sitting at the bottom of that hole.

13 Q. And did you have a reason or understanding why
14 you know the industry did not understand the ill effects of
15 light piping?

16 A. Yes. Yes. During the '90s, early '90s, we were
17 developing the measured pulse oximeter, our main competitor,
18 Nellcor, came with the first time a new improved sensor, and
19 they had built it so it reduces the problem of emissions,
20 electromagnetic radiation that by putting a Faraday shield
21 around the detector, but because they weren't aware of the
22 light piping, that bump created the cavity, like a fiber, so
23 more light went from the LEDs to the detector and was
24 causing all kinds of errors out there, but they didn't
25 understand it. And so their improved product actually made

1 things worse.

2 Q. Okay. I'd like to change subjects now and talk
3 about your consumer products.

4 What was Masimo's first consumer-focused product?

5 A. The iSpO2.

6 Q. And what is the iSpO2?

7 A. I think as the name maybe suggests it's a product
8 that the pulse oximeter that connects to the smartphones,
9 like an iPhone or tablet or iPad, and we have it in two
10 versions, one with the finger sensor clip attached to the
11 cable, that goes right to the phones, and one with a
12 connector that allows you to plug in 50 different sensors we
13 make from neonate to adult, from ear to forehead and finger
14 to it.

15 Q. And did that technology that you incorporated
16 with the iPhone, did that have your medical-grade technology
17 in it?

18 A. Oh, yeah. I will not market any pulse oximeter
19 that doesn't have our Masimo SET performance or very close
20 to it, because I've seen the outcome difference. That's why
21 for years we would not enter into this consumer stuff,
22 because it would be toys, it wouldn't work. So, yeah, once
23 we got the power consumption down, remember, the MS1 board I
24 showed in '95, that consumed 4,500 milliwatts, so that could
25 not be made into a wearable or a consumer product. So it

1 was down to -- when we got the power down to about 20
2 milliwatts, we began to make these consumer products and
3 products that were wearable.

4 Q. I'd like you to look at Complainants' Exhibit
5 1511.

6 A. Yes.

7 Q. Would you identify for the record what is Exhibit
8 CX-1511?

9 A. This is a press release, an announcement, that we
10 also sent through what we call Livewire, which is an
11 electronic email database of our customers, where we
12 announced the availability of iSp02, a debut of it, at the
13 Consumer Electronics Show in January of 2013.

14 Q. And when you say Consumer Electronics Show, you
15 showed this product at that show that year?

16 A. Yes.

17 Q. Prior to going to the Consumer Electronics Show,
18 what other shows did you go to before then?

19 A. Only the clinical ones, like the anesthesiologist
20 conference or critical care conference or nursing
21 conference. This was our first time going to kind of a
22 public consumer type of a marketplace.

23 Q. And did the iSp02 device with the iPhone, did
24 that attract some media coverage at CES?

25 A. That was a big hit. There was numerous, like 15,

1 20 different articles written about it, and put on the news
2 about the availability of a medical-grade Masimo SET pulse
3 oximeter for the first time available on these kinds of
4 devices.

5 Q. And if I could show you Complainants' Exhibit
6 1512, could you explain for the record what is this exhibit
7 showing?

8 A. Yeah, I think this is just some of the -- kind of
9 like the cutouts of some of these articles that had come
10 out, 21 articles that had come out as of January 10th, 2013.

11 Q. And did Apple take notice of the notoriety you
12 were receiving with your consumer product for use with the
13 iPhone?

14 A. Yes. Within two to three months they contacted
15 us, and they said you guys are the platinum of noninvasive
16 monitoring, we want you to come down to Cupertino, we want
17 to learn more, we'll sign your NDA, we want to work with you
18 to integrate your technology into our products.

19 Q. Did you have such a meeting?

20 A. Yes, we did. I was personally there.

21 Q. And did Apple send you an agenda for the meeting?

22 A. Yes, they did.

23 Q. I'd like to show you an exhibit, which Apple has
24 objected to, so I'm alerting Mr. Mueller, it's Exhibit 1539.

25 Could you --

1 MR. MUELLER: Actually, before we put it up, we
2 might want to go on the Apple confidential record here to
3 discuss the details of this, the Apple/Masimo confidential
4 record for both parties.

5 JUDGE BHATTACHARYYA: Let's move on to the
6 confidential record for both Apple and Masimo.

7 (Whereupon, the hearing proceeded in confidential
8 session.)

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1 O P E N S E S S I O N

2 BY MR. RE:

3 Q. When did you become interested in a
4 wrist-wearable pulse oximeter?

5 A. Actually from the very beginning. When I started
6 Masimo, I hoped to one day build a wrist-worn pulse
7 oximeter, because I hoped to one day take the product out of
8 the hospital into home for sleep analysis, for detecting
9 babies that are about to die from sudden infant death
10 syndrome, to even taking it to the gym, take it to people
11 who are exercising. So that's been something since
12 practically 1990, 1991 that I was --

13 Q. And why weren't you able to do it back then and
14 just go on to the wrist?

15 A. As I mentioned, the power. Our technology, we do
16 so much signal processing with the adaptive filter, it used
17 to take a very sophisticated sharp chip from analog devices
18 that consumed about 3,000 milliwatts. Fortunately over time
19 these chips have gotten better and smaller and more power.

20 So, look, if I wanted to do conventional pulse
21 oximeter, I could have made a wrist-worn device 30 years
22 ago, but to make something that works accurately, reliably,
23 continuously, it needed to be Masimo SET or very close, and
24 that's what we were waiting for. And eventually we did get
25 the power down to do that.

1 Q. When did you start getting -- submitting --
2 spending serious resources towards pursuing a wrist pulse
3 oximeter?

4 A. Right around the time we had the low power pulse
5 oximeter, so around 2013, 2014, I remember 2014 we began
6 actually a project at Cercacor to develop a wrist-worn pulse
7 oximeter.

8 Q. And let's take a look at a document numbered
9 CX-1482, if we can call that up.

10 Would you identify this document?

11 A. Yes. This is a Cercacor presentation on what we
12 called the wrist-worn pulse oximeter or wearable rainbow«.

13 Q. If we can go to the picture, just the picture, on
14 page 114, could you identify that physical?

15 A. Yes, mind you, this is a prototype, so it was
16 okay to have all these cables dangling out, because this is
17 for data collection. But the sensor is where that black
18 part is on the wrist where it shines the LED, multiple LEDs,
19 multiple detectors, to pick up, not just SpO2, but hopefully
20 hemoglobin and CO and other measurements.

21 Q. What's the year of this presentation?

22 A. This presentation is 2016, I believe.

23 Q. And I'd like you to look at a physical exhibit
24 that's in your room. If you look over at the table to your
25 right, if you can call up and hold Complainants' physical

1 Exhibit 139 and let me know if you recognize that device.
2 Do you see it? Do you see the table next to you? To your
3 right.

4 A. Oh.

5 Q. To your right. There we go.

6 A. I see, yes. This.

7 Q. Yes. What is CPX-139?

8 A. This is the actual physical representation of
9 what's in that picture.

10 Q. And this is 2016, the presentation, if I
11 remember, you said?

12 A. That is correct.

13 Q. Okay. I'd like you to go to the next exhibit,
14 CX-1483.

15 Do you see this document?

16 A. Yes.

17 Q. I'd like you to go to the picture on page 2
18 ending in 120.

19 Could you tell me what that is?

20 A. Yeah. This is -- we were trying to see how the
21 measurement would work if it actually transmitted the signal
22 straight from one end of the wrist to the other side. This
23 is a transmission wearable wrist pulse oximeter, the giant
24 black thing there is the photodetector, and the little
25 circuitry someone is holding with their finger are the LEDs

1 on the other side.

2 Q. And what year is this watch prototype?

3 A. 2017.

4 Q. And can you look to your right, there's a
5 physical, CPX-140, can you call that up, show it on the
6 screen?

7 What is that physical?

8 A. Yeah, this is the actual, I guess, hardware
9 manifestation of that image that you just saw.

10 Q. For the record, that picture on CPX-140 was
11 ending in 120, the picture of this physical.

12 I'd now like you to look at CX-1520. If you
13 could identify this document for the record.

14 A. Yeah, this is, I think, a presentation at
15 Cercacor called the Hummingbird Project.

16 Q. And if you look at the picture on the page 15,
17 ending in 086, could you describe that for the record?

18 A. Yes, that's just another update to what the
19 wrist-worn pulse oximeter prototype looked like.

20 Q. And what was the point of this prototype?

21 A. It's to test the accuracy of it, not just in room
22 air, but under the saturation, where we brought in
23 volunteers, and by having them read a mixture of nitrogen
24 and oxygen, we dropped them from room air of 100 percent to
25 70 percent.

1 Q. I'd like -- what's the benefit of using a watch
2 versus a product like the PPG we talked about in Exhibit
3 691?

4 A. Well, we wanted something unobtrusive, because,
5 as I mentioned earlier, in one of the biggest, I think,
6 cases where this kind of product could be useful is for
7 detecting opioid overdose. But of the hundred thousand
8 people that died from opioid overdose last year, 80,000 were
9 illicit users. In talking to some of those people, they
10 were not going to wear a finger sensor that told everyone --
11 signaled that they were potentially addicts.

12 So a watch could be something that's unobtrusive,
13 it looks like something anyone would wear, and yet, if in
14 the middle of the night opioid overdose stopped them from
15 breathing, an alarm could go to wake them and eventually
16 maybe to an ambulance to come rescue them.

17 Q. Exhibit 1493, do you recognize that document?

18 A. Yes, that's a Team Meeting presentation in
19 December 2018.

20 Q. And I'd like you to go to page 10 of this
21 presentation of 2018, at the very top, can we just blow up
22 the first few lines on the Engineering Goals da Vinci.

23 A. Yes.

24 Q. And next to develop wrist-based hardware
25 solution, what is designated in this presentation?

1 A. That it's been 100 percent completed, that we
2 have validated that we can measure SpO2 accurately with our
3 wrist-worn pulse oximeter.

4 Q. And was there also research going on on this
5 subject at Masimo concurrently with Cercacor?

6 A. Yes. Yes, there was a friendly rivalry, a
7 cooperation, but, yes, Masimo was working on their own
8 version as well.

9 Q. And where does all this research and development
10 occur with Masimo and Cercacor?

11 A. Masimo and Cercacor are literally two blocks from
12 each other in Irvine, California.

13 Q. Okay. How involved were you with regard to the
14 Masimo Watch project, you personally?

15 A. Well, as I said, from almost the beginning I
16 wanted to have it. Towards the end, meaning the last
17 several years, I became personally really involved, because
18 I wanted to now see it come to market.

19 We were going after this opioid epidemic problem,
20 and I really thought this watch could be a lifesaver.

21 Q. I'd like you to -- we're going to go on the CBI
22 portion. This is Masimo confidential information.

23 (Whereupon, the hearing proceeded in confidential
24 session.)

25

1 O P E N S E S S I O N

2

3 JUDGE BHATTACHARYYA: Moving to the public
4 record.

5 MR. MUELLER: May I proceed, Your Honor?

6 JUDGE BHATTACHARYYA: Yes, you may.

7 BY MR. MUELLER:

8 Q. Mr. Kiani, over the life of the company, fair to
9 say that Masimo has focused, not exclusively, but has
10 focused on the clinical setting?

11 A. Yes, that is correct.

12 Q. And, fair to say, the vast majority of the Masimo
13 revenues over the years have been in that clinical setting?

14 A. Yes.

15 Q. Now you identified for Her Honor in your
16 testimony earlier several products that you described as
17 consumer products, right?

18 A. Yes.

19 Q. I think there's the SpO2 monitor, right?

20 A. iSpO2, yes.

21 Q. The MightySet; is that correct?

22 A. That is correct.

23 Q. And another one you mentioned was the Radius PPG,
24 correct?

25 A. Yes, that is correct.

1 Q. Now, to be clear, all of these products that you
2 described involve fingertip sensors, correct?

3 A. Correct.

4 Q. So let me just show you an example. This is the
5 Radius PPG. If you could turn to, in your binder, sir, this
6 is CX-0691. I believe it's at tab 2 in your binder.

7 A. In my direct binder?

8 Q. There should be another binder titled
9 "Cross-examination."

10 A. I have not opened it yet.

11 Q. You can go ahead and open it, sir.

12 A. Okay.

13 MR. RE: I also get a copy, I assume? There's
14 two sets.

15 MR. MUELLER: Yes.

16 MR. RE: Can you give us just one moment?

17 MR. MUELLER: Sure.

18 MR. RE: The witness is down the hall. We did
19 not open the box, and it's being opened now in the witness
20 room.

21 MR. MUELLER: Thank you.

22 THE WITNESS: This reminds me when my daughter
23 took the LSAT remotely.

24 I have opened it.

25 Q. Take your time, and if you could, please, turn to

1 tab 2 in the binder, which is CX-0691.

2 A. Yes, I see that.

3 Q. This is a brochure for the Radius PPG, correct?

4 A. Yes, sir.

5 Q. And that's one of the consumer products that you
6 identified for Her Honor, right?

7 A. Yes.

8 Q. And you see in this brochure, on the cover here,
9 we have a woman wearing a hospital gown with the Radius PPG
10 on her wrist, correct?

11 A. Yes.

12 Q. Now if you could please, sir, turn to the very
13 next page, we see the full setup for the Radius PPG,
14 correct?

15 A. "The full setup," what do you -- oh, yeah, I see
16 that, on the left page showing it working with Root.

17 Q. Let's just make sure we understand. The
18 Radius PPG sensor is actually located on the fingertip,
19 correct?

20 A. Yes, where it says Masimo right there at that
21 end, yes.

22 Q. And then it's connected by a cable to a device
23 strapped to the wrist, correct?

24 A. Correct.

25 Q. And that is transmitting to this host device we

1 see here on the right; is that right, sir?

2 A. Yes, that is correct.

3 Q. Now, again, this is a consumer product, meaning
4 it doesn't need to be prescribed by a doctor, correct?

5 A. That is correct, but in this particular case
6 we're showing it's being used in a hospital.

7 Q. Fair enough. And you would agree, sir, and I'm
8 not criticizing the product, but you would agree this is not
9 something that a user could wear walking down the street or
10 jogging.

11 A. That's not true. People do use it in that
12 fashion today.

13 Q. Okay. So your position is this product right
14 here could be used in the way that a consumer wearable
15 product could be used for jogging or exercising; is that
16 your position?

17 A. Yes. In fact, on the next page you see this
18 woman laying down at home, not in a hospital. In fact,
19 that's from our commercial with Morgan Freeman using it at
20 home.

21 Q. Sir, I didn't say at home. I referred to
22 jogging.

23 A. Yeah, yeah, but it's the same. In fact, you made
24 the distinction that the Apple Watch doesn't work for
25 motion. This works through motion and low perfusion. So,

1 yes, people do wear it. They jog with it. We have athletes
2 who exercise with it and can tell the power of their
3 exercise by when their oxygen drops during their exercise.

4 So, yeah, this is worn. It lasts about four or
5 five days, with that single puck, with that battery. And
6 people can wear it continuously. They can take a shower
7 with it.

8 This is meant for untethered, wearable device for
9 both home and hospital, and, I guess, jogging, as you make
10 it sound --

11 Q. Understood. Just as a technical matter, at all
12 times in the use cases you're describing, the user would
13 have a finger clip sensor attached to a cable running down
14 their hand attached to that device strapped to their wrist,
15 correct?

16 A. That's not a finger clip sensor. That's an
17 adhesive wearable sensor. I don't want -- I'm not arguing
18 with you. I'm just trying to make sure you clarify. The
19 fingertip is that alligator-style clip.

20 Q. It's a finger sensor, finger adhesive sensor,
21 attached to a cable running down their hand attached to a
22 device strapped to their wrist, correct?

23 A. That's correct.

24 Q. Okay. Now let me ask you to focus now on the
25 three patents on which you are a named inventor which are

1 asserted in this case. I'm going to refer to them by their
2 last three digits, '501, '502, and '648.

3 Do you have those in mind, sir?

4 A. I do.

5 Q. And if I call those -- I believe the gentleman's
6 name is Poeze. Is that the correct pronunciation?

7 A. Yeah, he was the first named inventor, Jeroen
8 Poeze.

9 Q. So if I refer to these as the Poeze patents,
10 you'll know what I mean?

11 A. Yes, although you mispronounced his last name,
12 I'll know what you mean.

13 Q. What's the correct pronunciation?

14 A. Poeze.

15 Q. Got it. Okay. Let's look at Fig. 3 in these
16 patents. This is a figure that you looked at with Mr. Re, I
17 believe.

18 Just so the record is clear, one of these three
19 is JX-1.

20 A. Do you want me to look at my binder or your
21 binder you gave me?

22 Q. You can look at the Cross-Examination Binder.
23 There's a hard copy of JX-1. I believe it's at tab 3.

24 A. Yes, I found it.

25 Q. You can also look at the screen. We'll pull it

1 up in a moment here. If you could turn in the binder while
2 we're pulling it up here to Fig. 3.

3 A. Fig. 3, yes. C, D, E, which one?

4 Q. This one right here, Fig. 3C --

5 A. Perfect. That's the one Mr. Re showed me.

6 Q. That's right. Now this is showing a finger clip
7 sensor, correct, sir?

8 A. Yes, this is a finger clip sensor.

9 Q. And so the way this would work is a user would
10 insert their finger into this device and then close it down,
11 right?

12 A. Yes.

13 Q. And that region at the bottom center of the
14 screen where it's labeled 322, 323, 320 and 305, you talked
15 about that earlier with Mr. Re, correct?

16 A. Yes.

17 Q. And you told us about how the tissue would be on
18 top of that sensor, correct?

19 A. Correct.

20 Q. And there's the holes that go all the way down to
21 where the photodetectors reside, correct?

22 A. Correct.

23 Q. And readings are taken from those, correct?

24 A. Yes. You either accumulate or you parse, but,
25 yes, you take those detector signals and measure what you

1 need to measure, in this case oxygen or hemoglobin or
2 glucose.

3 Q. Now you would agree with me that nowhere in these
4 patents is there a similar description, similar level of
5 detail, for a watch, correct?

6 A. No, not for a watch. Although there is a
7 wristband device, but there is a lot of description about
8 this being used in different parts of the body, like the
9 forehead, the ear, and the like. Different sizes of
10 patients, from neonates to adults.

11 Q. Sir, stay with my question. Not a watch, right?

12 A. Well, there's a wrist-worn device, but because
13 this would connect to a wrist-worn device, I assume that is
14 not considered a watch, but, yes, there is a wrist-worn
15 device shown.

16 Q. Sir, stay with my question. Not a watch.

17 A. Yes, not a watch. It doesn't have the clock.

18 Q. In fact, sir, as you told us earlier, Masimo, and
19 apparently Cercacor, did work on watches in the mid 2010s,
20 correct?

21 A. Well, once we reduced the power consumption of
22 our algorithm, our set board, yes, we began trying to make
23 wearables and consumer products.

24 Q. And the reduced power consumption that you're
25 describing occurred in the mid 2010s, right?

1 A. That is correct. To the best of my memory,
2 that's when it happened.

3 Q. And because you developed it in the mid 2010s, of
4 course you didn't have possession of those particular ideas
5 back at the time of the Poeze patents when they were filed,
6 correct, sir?

7 A. That's not true. Back even in '91 I had this
8 idea of making a watch out of our technology.

9 Q. Well, sir, I understand you had the idea. You
10 had the aspiration. You hadn't actually pulled it off and
11 come up with the engineering solution until much later,
12 correct?

13 A. Well, the engineering solution included power
14 reduction and size reduction of our pulse oximeter
15 technology. So we were working towards that. Hospitals
16 don't need the power or size reduction because those devices
17 get plugged to the wall by the bedside.

18 So the reason we were pushing and pushing to
19 reduce the size, reduce the power, so we can make it
20 portable, wearable consumer version.

21 Q. I understand that was your goal, sir, but you
22 just told me a couple minutes ago that you solved the power
23 consumption problem in the 2010s, correct?

24 A. Yeah. I don't have the exact date in my mind,
25 but, yeah, right kind of before we began working on iSp02,

1 and then MightySet on the watch we had gotten the power down
2 to a level where it could be wearable and battery-operated.

3 Q. In the 2010s, correct?

4 A. Yes, sir, to the best of my memory, yes.

5 Q. Now because you came up with that in the 2010s,
6 you were not in possession with that in 2008, correct?

7 A. I'm sorry. What are you -- oh, when we -- well,
8 they're related. If you actually read the patent, it talks
9 about putting the sensor anywhere on the body.

10 You're focusing on the watch. We focus on pulse
11 oximetry, where in the body you could put it. And what this
12 invention showed is that in difficult situations -- in this
13 case hemoglobin or glucose where the signals are tiny -- or
14 are or on the finger or maybe in situations where maybe on
15 the forehead or wrist where the pulse ox is strong but that
16 site is bad, this invention comes in handy to make the
17 measurement.

18 Q. Sir --

19 A. We were in possession of it, yes.

20 Q. Sir --

21 A. With the power -- sorry.

22 Q. I didn't mean to interrupt you. Did you finish
23 your answer?

24 A. No. I would say we were in possession of one
25 piece, but we needed the other piece, the power consumption

1 to come down, to then put it together to make things like
2 iSp02 and eventually the watch.

3 Q. Sir, you were not in possession as of 2008 of the
4 engineering solution to putting a pulse oximeter in a watch,
5 correct?

6 A. Well, not all of the -- not all the components of
7 it, but some of it, yeah, that's what this patent shows.

8 Q. Sir, you could not build a watch with a pulse
9 oximeter in it; you did not have possession of that idea in
10 2008, correct?

11 A. We did not have feasibility until maybe 2016,
12 2017.

13 Q. Now the patent was filed, the original patent in
14 the Poeze patent family, was filed in 2008, correct?

15 A. The provisional was filed in 2008, that's
16 correct.

17 Q. And, in fact, it was filed on September 20 -- I'm
18 sorry. I'll retract that.

19 It was filed in 2008, but the three patents that
20 are asserted in this case in that same family were filed
21 about 12 years later in September of 2020, correct?

22 A. I know that's -- I think when they fished. I
23 don't know when they were filed. You'd have to talk to our
24 lawyers. Obviously the disclosure is identical, all that
25 changes are the claims, and I don't know when those claims

1 were first sought after.

2 Q. Well, let's pull up the Joint Exhibit that we
3 were just looking at a moment ago, and let's look at the
4 cover.

5 So we have here the '501 patent. This is one of
6 the three asserted in this case, correct?

7 A. Yes.

8 Q. And let's go down to the filing date, which is in
9 the left-hand side, midway down. And do you see, sir, it
10 was filed on September 24th of 2020?

11 A. Yes, I see that. That's when those claims were
12 filed.

13 Q. And let's take a look at JX-2, the '502 patent.
14 We'll take you to the filing date for this one. September
15 24th, 2020. Do you see that, sir?

16 A. Yes, I do.

17 Q. Very same day, right?

18 A. Yes.

19 Q. And let's go to JX-3, the '648 patent, and do you
20 see, sir, that was filed on the very same day as well?

21 A. Yes.

22 Q. So you'd agree that the three patents in this
23 family that are asserted in this case were filed on
24 September 24th, 2020, right?

25 A. Yes.

1 Q. Now that's 12 years after the original
2 provisional application, correct?

3 A. Yes.

4 Q. If we go back to the release dates of the Apple
5 Watches, do you see the Series 6 was released on September
6 18th, 2020?

7 A. Yes, I do see that.

8 Q. Very shortly before these applications were
9 filed, correct?

10 A. Yes, correct.

11 Q. And, in fact, if we go to RX-0333, which is tab
12 14 in your binder, sir.

13 A. Yes, I see the press release from Apple
14 announcing the watch, Series 6.

15 Q. On September 15th of 2020, correct?

16 A. Yes.

17 Q. That's nine days before these three patent
18 applications were filed, right?

19 A. Yes.

20 Q. And it's fair to say, sir, you know of no reason
21 that these three patents could not have been filed earlier
22 than September 24th, 2020, right?

23 A. Well, I think there were reasons it was filed
24 then. I have a vague understanding of some of the reasons,
25 but you should ask the lawyers who did it to why they did it

1 when they did it.

2 Q. Well, let me take you to your deposition. This
3 is RX-1204. Let me take you to your deposition transcript
4 at page 175, lines 14-17.

5 MR. RE: Objection. One moment. Mr. Kiani, do
6 you have a copy of your deposition with you? It should be
7 in one of your notebooks.

8 THE WITNESS: Well, yeah. Which tab am I looking
9 at?

10 Q. Tab 1 in your Cross-Examination Binder. Take
11 your time. Let me know when you're on page 175.

12 A. Yes.

13 Q. Are you there, sir?

14 A. I am.

15 Q. Line 14.

16 Question. And is there any reason that you know
17 of that these three patents could not have been filed
18 earlier than September 24th, 2020?

19 Answer. No.

20 Were you asked that question and did you give
21 that answer, sir?

22 A. Yes, that is correct. That is my understanding
23 at the time. I did not know.

24 Q. All right. Thank you, sir. You can put your
25 deposition transcript aside for the moment.

1 Let me ask you about whether what was known in
2 your view and what was not known with respect to the --
3 these three patents on which you're a named co-inventor.

4 LEDs, light-emitting diodes, with multiple
5 wavelengths had been used in physiological measuring devices
6 before 2008, correct?

7 A. Yes.

8 Q. Before 2008 there had been physiological
9 measuring devices with multiple LEDs emitting different
10 wavelengths of light, correct?

11 A. That was Masimo's invention, rainbow«.

12 Q. Before 2008, correct?

13 A. That is correct.

14 Q. And those were in public sale before 2008,
15 correct?

16 A. Correct.

17 Q. And there was also physiological devices with
18 multiple photodiodes before 2008, correct?

19 A. Correct.

20 Q. So, in fact, there were multiple detector
21 physiological devices before 2008, correct?

22 A. That's correct.

23 Q. Now you weren't the first to invent photodiodes
24 configured to receive light attenuated by the tissue of a
25 user, right?

1 A. That is correct.

2 Q. In fact, that was an old idea?

3 A. Yes, absolutely. Sorry.

4 Q. I'm sorry. I didn't mean to interrupt.

5 A. I apologize. I was just saying that concept, of
6 course, dates back to even the oximeters before pulse
7 oximeters, before Aoyagi invention, yes.

8 Q. You'd agree with me, sir, that Masimo wasn't the
9 first to invent a user-worn device that could take
10 physiological measurements from photodiodes, right?

11 A. That is correct.

12 Q. Nor the first to invent a user-worn device that
13 could transmit measurements wirelessly, right?

14 A. Yes, I believe -- I believe that's correct, yes.

15 Q. Nor the first to invent a user-worn device with a
16 touchscreen, correct?

17 A. Yeah, I think so. I think you're right. We were
18 the first, but I don't believe this patent was first to
19 disclose that.

20 Q. It came before this patent; is that right, sir?

21 A. Yes, the way you asked it, yeah.

22 Q. And, of course, wrist straps for various types of
23 devices have been around forever, right?

24 A. Yes, they have.

25 Q. Now let's talk a little bit about light piping, a

1 subject you discussed at some length with Mr. Re.

2 Light piping is another problem that you have con
3 fronted over the course of your time at Masimo, correct?

4 A. That is correct.

5 Q. And you and your colleagues viewed that as a
6 substantial challenge to overcome, right?

7 A. Yes. Trying to measure either during motion or
8 very low perfusion situations light piping becomes a
9 problem.

10 Q. If I understood your testimony earlier, you had
11 achieved mechanisms and techniques for dealing with the
12 light piping problem by the early to mid-'90s, correct?

13 A. That is correct.

14 Q. And, in fact, you were offering for sale
15 products -- if you could remind me -- was it LPN sensors?

16 A. LNOP.

17 Q. Got it. You were offering those as of 1994, I
18 think you said?

19 A. 1996.

20 Q. I'm sorry, 1996. So the light piping techniques
21 that you had developed were in public sale as of 1996,
22 correct?

23 A. Not all of them, the particular design that we
24 had at the time dealt with light piping, but that design
25 wouldn't have worked for what we were doing later, which is

1 in this patent.

2 Q. Now I want to ask you a very specific question.
3 In your direct testimony with Mr. Re earlier today, you did
4 not show Her Honor any portions of the '501, '502, or '648
5 patent specifications that describe techniques for dealing
6 with light piping, correct?

7 A. Yes. I wasn't asked that, but it's in here, and
8 there's a lot of discussions about it.

9 Q. Protrusion, I believe you touched on that subject
10 also, right, sir?

11 A. Yes, I did.

12 Q. You would agree that convex protrusions were
13 known long before these three patents, the '501, '502, and
14 '648 were filed for, correct?

15 A. No. I believe, to my understanding, we were the
16 first to actually do this convex protrusion when we actually
17 made these products that are the subject of the 2008 filing.

18 Q. When you say made these products, you understand
19 the only domestic industry product being alleged for these
20 patents in this case is the Masimo Watch, do you understand
21 that, sir?

22 A. I do. It surprises me because we do use these in
23 other domestic industry products, but, yes, I've learned
24 that this morning.

25 Q. And you're not trying to change the position now,

1 are you?

2 A. I don't know if we can, but I don't think it's
3 true.

4 Q. Okay. In any event, the Masimo Watch was not in
5 existence in 2008, correct?

6 A. No, it was not.

7 Q. Masimo hasn't licensed these three patents to any
8 other companies, correct?

9 A. That is correct.

10 Q. And these three patents have not been recognized,
11 these patents themselves, '501, '502, '648, have not been
12 recognized in any industry journals or publications,
13 correct?

14 A. Yes. Other than discussing them for our case,
15 I've not seen anything.

16 Q. All right. I want to talk a little bit without
17 getting into the details, you have also, your company, I
18 should say, has also filed a lawsuit against Apple in the
19 Central District of California, correct?

20 A. That is correct.

21 Q. And we won't get into the details today, that's
22 for another court, but you have made trade secret
23 allegations and patent allegations in that case, correct?

24 A. That is correct.

25 Q. Now the patent allegations were stayed or paused

1 pending review of those patents in the Patent Office through
2 what are known as IPR proceedings, correct?

3 A. Yes, I believe Apple filed 20 plus IPRs
4 against -- I think ten patents we filed in that case.

5 Q. And you were dissatisfied with the fact that the
6 case was stayed, correct?

7 A. Yes. Obviously, as any plaintiff, I'd like the
8 case to move forward.

9 Q. And that was one of the reasons why you filed the
10 complaint that led to this investigation, right, sir?

11 A. Yes, it is. It is. As I said earlier,
12 unfortunately, District Court patent cases I've learned take
13 several years.

14 Q. Now some of the patents in the District Court
15 case that were subjected or became the subject of IPR
16 proceedings are related to the '501, '502, and '648 patents
17 in this case, correct?

18 A. Correct.

19 Q. And you understand the Patent Office has made
20 some determinations about those patents in the IPR
21 proceedings, right?

22 MR. RE: Objection, Your Honor. This is an
23 argument that was not made in the pre-hearing briefing. I
24 see no relevance. And very confusing to untangle if
25 Mr. Mueller is suggesting that somehow these IPRs bolster

1 his case with regard to the patents that are in this case
2 where all the IPR information was, in fact, submitted to the
3 Patent Office. I don't see the connection in how this
4 argument was previously made in the pre-hearing brief.

5 MR. MUELLER: I'd say two things, Your Honor.
6 One, Mr. Re referred to other litigation this morning that
7 has absolutely nothing to do with this case. I objected.
8 Your Honor overruled my objection with respect to the
9 Nellcor case, for example.

10 In distinction with those cases, which have
11 nothing to do with this case, these IPR proceedings are
12 directly connected to the same family members of these three
13 patents. In fact, 383 of the 384 claims that have been
14 reviewed by the PTAB in the IPR proceedings have been
15 invalidated, 383 out of 384.

16 So, yes, we do think that bolsters our case on
17 invalidity, that 383 out of the 384 claims that have been
18 reviewed by the IPR proceedings that relate to the patents
19 in this case have been invalidated.

20 So I would say that, Your Honor. But I would
21 also say, what I would also say is, to the extent -- same
22 limitations -- I've just been given a note by Ms. Frazier
23 making the point that these also include claims with some of
24 the same limitations at issue in this case.

25 It also goes to the motive for Masimo filing this

1 case, namely, the stay for some of these same patents.

2 So I actually think there's a direct connection,
3 a direct nexus, between these IPR proceedings and the
4 results of those IPR proceedings in this case.

5 The last point I would make, Your Honor, is the
6 only patents -- or the patents in this particular case have
7 not yet gone into IPR proceedings. So you will be the first
8 to assess the invalidity of these particular claims, but of
9 the 384 related claims, 383 have been invalidated.

10 MR. RE: Your Honor, my objection was it wasn't
11 in the brief. I objected. Where is that -- how is that
12 responsive to the fact that this argument has never been
13 made.

14 Ms. Frazier, on Friday, her sole reason for
15 participating on Friday was to hold us to the briefing and
16 the disclosures. Where was there any argument about the
17 relevance of these IPRs with regard to the claims at issue
18 in this case. I saw nothing about that. And I think it's
19 complete -- I think she used the word sandbag -- when you
20 make a very complicated argument like this as if this
21 bolsters your invalidity case.

22 And the reason why I discussed Masimo's
23 leadership in the field of pulse oximetry is because Apple
24 sought our help. And they're making a nonobviousness
25 argument.

1 So there's a big difference. And what I heard
2 Mr. Mueller just say, since I got overruled on something I
3 think was irrelevant, let me do something that's irrelevant
4 too. That is not proper advocacy. Where in your brief did
5 you make any argument about this connection between the IPRs
6 and the claims at issue, that's what I -- this is why it's a
7 new argument to measure, as I sit here.

8 MR. MUELLER: I would just say -- I'm sorry.

9 JUDGE BHATTACHARYYA: Go ahead.

10 MR. MUELLER: Very, very briefly. Number one,
11 I'm not making the same objection. The Nellcor case, for
12 example, has utterly nothing to do with this case, whereas
13 these IPR proceedings involve related patents in the same
14 family. Point one.

15 Point two, I don't have a pincite for Your Honor
16 right now on the pre-hearing brief, but I believe this has
17 been part of the expert reports. The expert reports of our
18 technical experts have cited these IPR proceedings, so this
19 is a preserved position.

20 But, in any event, Your Honor, we can take it up
21 later on, if it would make things easier right now. But I
22 do want to say, quite clearly, this is not the same thing as
23 citing to Nellcor. These are the same patents in the same
24 family, and they have been invalidated far over 99 percent
25 of the time.

1 JUDGE BHATTACHARYYA: Let's take a short recess.
2 One minute.

3 (Brief interruption.)

4 JUDGE BHATTACHARYYA: We can go back on the
5 record. I'll wait for Mr. Mueller.

6 I am overruling the objection. The question can
7 be asked.

8 Mr. Kiani, to the extent you have knowledge, you
9 should answer.

10 A. Yes, Your Honor. My understanding is that the
11 patents in the District Court case are broader, and what
12 I've learned is that, when we filed these patents, we
13 included some of the prior art that Apple had found along
14 with the IPR filings. So the Patent Office could view these
15 new claims we were asking in view of all of it.

16 So I don't understand Mr. Mueller's comments
17 about what's happened on the IPR side as it relates to this,
18 because these are narrower claims.

19 Q. Mr. Kiani, the record will speak for itself, but
20 you do not contest my suggestion that 383 of the 384
21 reviewed claims in this family have been invalidated by the
22 Patent Office, correct?

23 A. Well, I never knew the numbers, sir, but I also
24 know it's on appeal with the Federal Circuit Court of
25 Appeals. So I don't think it's complete. Besides, that

1 prior art on those patents that were broader have been given
2 to the Patent Office when they issued these with narrower
3 claims.

4 Q. Again, the record will speak for itself.

5 You would agree with me, Mr. Kiani, that there
6 are no IPR proceedings yet involving the three patents in
7 this family in this investigation, correct?

8 A. Yes. I don't get to ask the questions, but I
9 don't know why Apple didn't file them.

10 Q. Well, sir, you understand Her Honor will be the
11 first to assess the invalidity of those claims, right?

12 A. I am happy that she will.

13 Q. And I understand that you will be appealing the
14 earlier decisions, but you are not contesting my recitation
15 of the fact that 383 of the 384 claims have been invalidated
16 to date, correct?

17 A. I don't know, sir, but I will take your word for
18 it.

19 Q. Okay. Now, the '501, '502, and '648 patents are
20 not directed to, for example, a method for transmitting
21 email from a user-worn device, correct?

22 A. Correct.

23 Q. They are not for text messaging, credit?

24 A. Correct.

25 Q. They are not for sending or receiving text

1 messages or emails from a wrist-worn device, correct?

2 A. Correct.

3 Q. They are not for electronic payments?

4 A. No, they are not.

5 Q. Not for GPS?

6 A. No.

7 Q. Not for music or podcasts?

8 A. No.

9 Q. Not for an altimeter?

10 A. No.

11 Q. Not for a compass?

12 A. No.

13 Q. Not for magnetic charging, sir?

14 A. No.

15 Q. Not for microphones or speakers?

16 A. No.

17 Q. Not for Wi-Fi -- I'm sorry.

18 A. The product does have speakers and I think a
19 microphone, but, no, no, the patents are not about that.

20 Q. And the patents are not for Wi-Fi or cellular
21 conductivity, correct, sir?

22 A. Not the claims in this case, no.

23 Q. Now these three patents, the '501, '502, and '648,
24 are also not directed at an industrial design for a watch,
25 correct?

1 A. That's correct.

2 Q. And you understand what an industrial design is,
3 right?

4 A. Yes.

5 Q. And you understand that for consumer products
6 industrial design can create significant engineering
7 challenges, fair?

8 A. Fair.

9 Q. And this patent does not teach ways to overcome
10 the industrial design related engineering challenges in a
11 watch, correct?

12 A. Not -- not the look of the product, no.

13 Q. Now the Masimo Watch, we're going to talk about
14 some of the confidential information about that product
15 shortly, but your position is the Masimo Watch is now ready
16 for at least a limited release; is that right, sir?

17 A. It is in limited release, yes.

18 Q. Well, to be clear, you can't buy it in a store
19 yet, correct?

20 A. That's the definition of a limited market
21 release, yes.

22 Q. Just so the record is clear, you cannot buy it in
23 the store yet, right?

24 A. Oh. No, you can't. You can get on our website
25 and order one provided you agree to give us feedback on the

1 product, and if we make any substantial changes that you'll
2 let us take it back if we want to give you a new one.
3 That's the agreement.

4 Q. Now you just held up what I believe you're
5 contending is one of those watches; is that right, sir?

6 A. That is correct.

7 Q. Now I took your deposition a while back. Is that
8 the same watch you were wearing that day?

9 A. Yes, it is.

10 Q. All right. And you would agree with me that that
11 watch looks an awful lot like the Apple Watch.

12 A. It looks similar. It's got that same ugly Casio
13 square shape, but it is what it is.

14 Q. It looks a lot like the industrial design of the
15 Apple Watch, correct?

16 A. Correct, from afar.

17 Q. Now that watch, the Masimo Watch watch that
18 you're wearing, even this limited release that you just
19 described -- we're going to come back to that -- has only
20 occurred very recently, right?

21 A. What has occurred very recently?

22 Q. This limited release that you just described.

23 A. Yes, May 2nd is when we did it, yes.

24 Q. May 2nd, do I have that right?

25 A. Yes, sir.

1 Q. So that's a little over a month ago.

2 A. That's correct.

3 Q. Now, the Apple Watch, the original Apple Watch,
4 was released in 2015, correct?

5 A. Yes. You're welcome to sell all you want of
6 that.

7 Q. And the Series 6 and the Series 7 for which
8 you're seeking an import ban were released in 2020 and 2021,
9 right?

10 A. Yes, that's correct. I think September of each
11 year.

12 Q. And, of course, those dates are before the May
13 limited release date that you just gave us, correct?

14 A. Yes.

15 Q. And we can agree on this, sir. Apple could not
16 have copied the look of the Masimo Watch, because when Apple
17 created the Apple Watch models at issue in this case the
18 watch didn't exist, correct?

19 A. Correct.

20 MR. MUELLER: At this point, Your Honor, I'm
21 going to ask to go on the Masimo confidential record.

22 (Whereupon, the hearing proceeded in confidential
23 session.)

24

25

1 O P E N S E S S I O N

2

3 MR. RE: Thank you, Your Honor.

4 BY MR. RE:

5 Q. Mr. Mueller showed you where the Radius PPG was
6 connected or next to Root. Do you remember that discussion?

7 A. Yes, I do.

8 Q. And then you directed him to the next page where
9 there was a woman sitting at home with the Radius PPG on it,
10 right?

11 A. Yes.

12 Q. Now can you explain what I think you were trying
13 to explain during your cross-examination on whether the
14 Root, is that a home device or is that for the hospital?

15 A. The Root is for the hospital. At home you use a
16 phone, a smartphone to see the information.

17 Q. So the consumer doesn't buy that larger item
18 shown on page 2.

19 A. No, I don't believe they would. That's overkill
20 for them.

21 Q. Right. And so in the picture with the person at
22 home, they could use Radius PPG with the iPhone?

23 A. That's correct.

24 MR. MUELLER: I'm going to object to the leading,
25 Your Honor.

1 BY MR. RE:

2 Q. Okay. Does the Radius PPG require Root?

3 A. No, it does not. It can work with any Bluetooth
4 device.

5 Q. And what are Bluetooth devices that work with
6 Radius PPG?

7 A. Well, a whole host of them, from the iOS phones,
8 to the Android phones, to the tablets that you can buy. So,
9 yeah, any of them.

10 Q. Okay. One other thing. You had early in your
11 testimony, I think it might have been before the lunch
12 break, you and Mr. Mueller were having a debate about
13 evidence of whether, you know, Apple could have gotten ideas
14 from Masimo. Do you remember that?

15 A. I do.

16 Q. And you kept saying I don't have any direct
17 evidence, it's only circumstantial, right?

18 A. Yes.

19 Q. What did you mean by that?

20 A. Well, no other company except the one that took
21 30 of our engineers, including our CTO, who was an inventor
22 of the three patents in this case came up with a
23 convex-shaped sensor for monitoring pulse ox.

24 So that's one of the evidence as I think leads me
25 to believe that they took it from us. And also other

1 companies that do copy Apple, of course they are going to
2 copy Apple, and we're going to have more people with these
3 convex-based sensors. Before then, nobody else had it.

4 Q. And Mr. Mueller also asked you about that meeting
5 that occurred in May 3rd, 2013. Do you remember that?

6 A. Yes.

7 Q. And --

8 MR. MUELLER: I'm sorry to interrupt. If we're
9 going to get into that, if we could go on the Apple-Masimo
10 confidential record.

11 MR. RE: I won't get into the content of the
12 meeting. I didn't intend to. I just want to ask one
13 question.

14 Q. Was there any agreement signed prior to the
15 meeting at Apple in May of 2013?

16 A. Yes. Apple asked us to tell them confidential
17 information, a product roadmap, how and why it worked, so we
18 insisted on an NDA, and we had a nondisclosure agreement
19 between us for that meeting.

20 Q. And was confidential information exchanged
21 pursuant to that signed NDA?

22 A. Yes.

23 MR. RE: I have no further questions, Your Honor.

24 MR. MUELLER: Just briefly, Your Honor.

25 MR. RE: Oh, is there two rounds for every

1 witness?

2 JUDGE BHATTACHARYYA: If you brought up something
3 in redirect that Mr. Mueller wants to respond to, then
4 that's acceptable.

5 MR. RE: Okay. Thank you.

6 RECROSS-EXAMINATION

7 BY MR. MUELLER:

8 Q. I'll keep this brief.

9 Mr. Kiani, you just heard a reference to this
10 meeting you had with Apple, correct?

11 A. Correct.

12 Q. And some information that was provided, right?

13 A. Yes.

14 Q. Now you were at that meeting, correct?

15 A. I was.

16 Q. And, sir, as you said earlier, you have no direct
17 evidence whatsoever of copying by Apple of the features at
18 issue in this case, correct?

19 A. Correct.

20 Q. Now you were at the meeting, so, presumably, if
21 there had been such information at the meeting, you would
22 have told us about it earlier, correct?

23 A. No one has asked what we discussed at the
24 meeting. I'm happy to answer your questions on that.

25 Q. My question is simply, you have no direct

1 evidence whatsoever of any copying of the features at issue
2 in this case, correct?

3 A. That's correct.

4 Q. Now last question. You mentioned this convex or
5 a convex sensor was an indication of something improper by
6 you, right, or by Apple?

7 A. By Apple, yeah.

8 Q. Do you understand, sir --

9 A. If I may say, I wasn't getting into the
10 legalities of it. You asked about circumstantial. I guess
11 Mr. Re asked about what's circumstantial on copying, and the
12 convex was one of them.

13 Q. Sir, you understand the convex shape on the back
14 of the watch was in the Series 0 in 2015. Do you understand
15 that?

16 A. Marcelo started January 2014 at Apple.

17 Q. Sir, you understand the Series 0 is not accused
18 of infringement in this case, correct?

19 A. Correct.

20 Q. You understand there's no contention by Masimo,
21 not one, that the Series 0 infringes any of the five patents
22 in this case, correct?

23 A. Correct, nothing until Series 6 and 7 in this
24 case.

25 Q. And the Series 0 had a curved rear of the watch,

1 correct?

2 A. Not exactly like Series 6 and 7, but yes.

3 Q. And it had sensor technology within it, correct?

4 A. Not for pulse oximetry.

5 Q. It had curved sensor, a curved back surface and
6 sensors within it in the Series 0, correct?

7 A. It is different, and that's why we're not
8 alleging those including Series 4 and 5 in this particular
9 case.

10 Q. Sir, please --

11 A. I'm agreeing with you, but I'm just clarifying
12 that they're different. Sorry.

13 Q. Please, sir, stay with my question. The rear of
14 the Series 0 was a domed back crystal, correct?

15 A. Yes.

16 Q. And there were physiological sensors in that
17 device, correct?

18 A. Not -- yes, but not pulse oximetry, yes.

19 Q. And it's not accused of infringement in this
20 case, right?

21 MR. MUELLER: Thank you, sir. No further
22 questions.

23 (Clarification by reporter.)

24 THE WITNESS: I believe I said they're not in
25 this case, ma'am.

1 THE REPORTER: Thank you.

2 JUDGE BHATTACHARYYA: Mr. Kiani, thank you so
3 much for your testimony.

4 THE WITNESS: Thank you, Your Honor. Thank you
5 for your time.

6 MR. RE: Thank you, Your Honor.

7 MR. MUELLER: Your Honor, while we're switching
8 to the next witness, Mr. Selwyn will do the
9 cross-examination of the next witness.

10 JUDGE BHATTACHARYYA: Thank you.

11 MS. SWAROOP: Your Honor, I think during the
12 course of the morning session we did send Your Honor a list
13 of the exhibits that we would like to have moved in without
14 a sponsoring witness. We're happy to do that now or to move
15 to our next witness.

16 JUDGE BHATTACHARYYA: If it's all right with you,
17 why don't we move to our next witness and do that at the end
18 of the day. Is that all right?

19 MS. SWAROOP: That's fine, Your Honor.

20 For our next witness, Complainants call Mohamed
21 Diab, and Mr. Lateef will be conducting the examination of
22 Mr. Diab.

23 MR. LATEEF: Just waiting for the witness,
24 Your Honor, to get to the witness room.

25 JUDGE BHATTACHARYYA: Mr. Diab, are you ready to

1 proceed?

2 THE WITNESS: I am. Sorry. I had to take off my
3 jacket.

4 JUDGE BHATTACHARYYA: Do you understand that you
5 have an obligation to tell the truth here today?

6 THE WITNESS: I do.

7 MOHAMED DIAB,

8 having been first duly sworn and/or affirmed
9 on his oath, was thereafter examined and testified as
10 follows:

11 JUDGE BHATTACHARYYA: You may proceed.

12 DIRECT EXAMINATION

13 BY MR. LATEEF:

14 Q. What do you do, Mr. Diab?

15 A. I am an engineer at Masimo.

16 Q. And what is your current position at Masimo?

17 A. I'm a fellow scientist.

18 Q. What year did you start working at Masimo?

19 A. 1989.

20 Q. And how long have you been working at Masimo?

21 A. Ever since.

22 Q. Okay. Where did you attend college?

23 A. Cal State Fullerton.

24 Q. And what degree did you earn there?

25 A. Bachelor in electrical engineering with emphasis

1 on computer engineering.

2 Q. What year did you graduate?

3 A. 1986.

4 Q. Briefly could you tell us the kind of work that
5 you did at Masimo in the 1990s?

6 A. Sure. At that time we were working on our first
7 pulse oximeter, and I was involved in the hardware design,
8 the sensor designs and the algorithm designs. The algorithm
9 is what takes the signal from the sensor, calculates pulse
10 rate, saturation and other parameters.

11 Q. Great. Did you work on measuring
12 carboxyhemoglobin when you were at Masimo?

13 A. Yes. We have started a project at Masimo to work
14 on the carboxyhemoglobin and other parameters that are
15 considered, they call them hemoglobin species, oxygen is one
16 of them, carboxy is another when it binds with hemoglobin,
17 methemoglobin, and total hemoglobin as well.

18 Q. Can you explain the importance of measuring
19 carboxyhemoglobin --

20 A. Yes.

21 Q. -- noninvasively?

22 A. Carboxyhemoglobin, carbon monoxide, when it binds
23 with oxygen, with hemoglobin, it has the affinity of 200
24 times what oxygen does. In other words, it displaces the
25 oxygen. It won't let the oxygen bind with the hemoglobin.

1 So it turns the hemoglobin into a dysfunctional
2 hemoglobin, and, hence, the carbon monoxide poisoning that
3 we hear. And it's very hard to diagnose because it looks
4 like a flu. People with a high carbon monoxide poisoning,
5 they go to the hospital, they look bright red and they look
6 like they have a flu.

7 Firefighters suffer because of that. And many
8 times when you have to buy appliances, like you buy a
9 furnace that doesn't have good combustion, people get carbon
10 monoxide poisoning.

11 Q. What research did you do with respect to
12 carboxyhemoglobin?

13 A. We looked into, first of all, how it interacts
14 with tissue, and I spent quite a bit of time looking into
15 the theory behind it. Then we moved into a computer
16 simulation trying to understand can we build a device that
17 will measure carboxy noninvasively, carboxyhemoglobin in the
18 tissue noninvasively, with reasonable accuracy that is
19 relevant to the field.

20 And the result of those simulations, which took
21 about a year, is that, yes, we could, and we also figured
22 out that we can measure the other parameters, the
23 methemoglobin and total hemoglobin as well.

24 Q. With respect to carboxyhemoglobin, who else
25 worked with you on developing that technology?

1 A. We hired Mr. Marcelo Lamego after two years of my
2 work on that one, and after that eventually we created a
3 team, we called it the rainbow« team, and the name rainbow«
4 came from the number of wavelengths or number of LEDs that
5 were needed in the sensor.

6 Typically, if you look at our oxygen sensor, it
7 has two of them, it looks red, this one has many of them, so
8 we called it rainbow«.

9 Q. We're going to start a section that discusses
10 Masimo CBI.

11 Could we please go on the Masimo CBI record?

12 (Whereupon, the hearing proceeded in confidential
13 session.)

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3 JUDGE BHATTACHARYYA: Moving back to the public
4 record.

5 BY MR. LATEEF:

6 Q. Okay. Could you take a look at Joint Exhibit
7 007?

8 A. Okay.

9 Q. Can you tell me what this is?

10 A. Yeah. So this is a United States Patent No.
11 7,761,127. I am an inventor on this patent.

12 Q. Okay. And who owns this patent?

13 A. I believe initially it was Masimo Laboratories.
14 That's the company we spun off in 1988. But today's
15 Cercacor, it was renamed to Cercacor.

16 Q. Okay. And does this patent relate to your work
17 on measuring carboxyhemoglobin?

18 A. Yes.

19 Q. Okay. Can you explain at a very high level how?

20 A. Okay. So this is a patent that describes a
21 sensor that can take 16 LEDs with many novel features, and
22 the part that I just explained about how we can predict the
23 wavelengths using the thermistor and the thermal mass is
24 described in this patent.

25 Q. Okay. Let's take a look at Fig. 2A. And can you

1 describe what is shown here?

2 A. This is something you may have seen in a
3 hospital. It's called a clip sensor. This is a sensor that
4 goes and clips on the digit, and it has LEDs in it. It may
5 be a measure -- oxygen saturation or other parameters for
6 rainbow«.

7 Q. Let's move to Fig. 4. Can you explain what we're
8 looking at here?

9 A. So this is an expanded view of that particular
10 sensor. So if you were to break it up and open it up and
11 look inside of it, this is what you're going to see. On the
12 left there is a cable. On the top and the bottom there are
13 those shelves, the top and the bottom shelves. Then in the
14 middle there is -- there are a couple of pads, very flexible
15 pad.

16 And if you look at 600, that's where the assembly
17 is, and this is what we were talking about before.

18 Q. Okay. And 600 is now on the screen. Do you see
19 that?

20 A. Yeah. This is like a 4x8 millimeter. This is
21 our first revision of it, just to give you have a sense of
22 the size, 4x8 millimeter.

23 Q. Let's go to Fig. 6. And can you explain what
24 we're looking at here?

25 A. So this is the same sensor assembly but zoomed

1 in. And what you see on the right side, you see the LEDs.
2 Those are little, look like sugar cubes. Those are the
3 LEDs. Our sensor design can accommodate 16 of them.

4 Q. Okay. Let's go to Fig. 12. Could you explain
5 this figure to us?

6 A. Sure. This is a block diagram of that
7 thermistor. So you see -- not thermistor -- of the
8 assembly. This is the block diagram, top-level block
9 diagram.

10 You see the LED on the left, the light emitter.
11 In the middle you have the thermal mass, which is really the
12 substrate, described here as a substrate. The emitters pump
13 the heat into the thermal mass, and when we described that
14 energy right here with two arrows. And on the right side
15 you have this temperature sensor, which in our case, as an
16 example of one embodiment, was a thermistor, and it is
17 attached to the other side of the substrate.

18 Q. Can you explain what a thermistor is?

19 A. A thermistor is a device that it changed its
20 resistance with temperature. So if you measure the
21 resistance, you can look up what the temperature is, and
22 it's really accurate.

23 Q. Thank you. Can we turn to Fig. 14 in the patent?

24 Can you explain what we're looking at here on
25 Fig. 14?

1 A. Sure. So this is really a cross-section across
2 that emitter assembly, and it shows the composition of the
3 board itself.

4 So the board typically is made of material called
5 FR-4. It's some kind of a material that is used in all of
6 the computer boards. If you have a computer at home and you
7 look and you open it up and you look at the board, it will
8 be probably an FR-4 board. It's used widely in the computer
9 industry in electronics.

10 You could see sandwiched in between -- first of
11 all, the top layer, we call it the component layer, that's
12 where the LED goes, and this is a metallized layer,
13 conductive, probably copper.

14 Then there are layers 2, 3, 4, and 5. These are
15 inner layers. Also they are made out of, typically, copper.
16 They are metallized layers. And there is a bottom layer
17 where we attach the thermistor.

18 Q. Okay. And are these layers connected in any way?

19 A. Absolutely. You have to connect them; otherwise,
20 the heat will not flow because the FR-4 is a very good
21 insulator. It is made out of fiberglass.

22 So we have via, we call via or through holes that
23 connect each one of those layers to the next. So the heat
24 will be generated on the top where the LEDs are, and it
25 flows down through all of the layers.

1 Q. Is --

2 A. Through those conductive holes.

3 Q. Yes. Does this structure keep the temperature of
4 this thermal mass constant?

5 A. No. No. As actually you've seen it before in
6 the simulation, the temperature is not constant. It
7 actually follows the temperature of the LED in sync, and
8 that actually is the main trick.

9 Q. And maybe you can explain again how, despite the
10 changes in the temperature, the thermistor is related to the
11 wavelength of the LEDs.

12 A. Well, what happened right here is that, I'm going
13 to use an example to help us analogy -- to help us in this,
14 we have attached those LEDs thermally to the thermal mass.

15 And I'm going to use an example of people in an
16 elevator and you want to know the height of the people.
17 Actually what you want to do is how high their hair or their
18 head, their scalp, from the base floor.

19 So how do you do it? We first ask them to take
20 off their shoes, stand, normalize them, have them stand
21 barefoot on the elevator. And then we find out what is the
22 level of the elevator, the tenth floor. So the floor of the
23 elevator is akin to the thermistor in a thermal mass
24 temperature. That's where things are standing.

25 And then every person has their own different

1 height, just like those LEDs, each one has its own junction
2 temperature. But once you do that, you calculate the height
3 of each one of those, and you can say, okay, well, the
4 height of this person from the first floor is their height
5 from the floor of the elevator plus where the elevator is.

6 So that's pretty much what we do with our
7 invention. We find out that we can measure the temperature
8 of the thermal mass and then calibrate each LED
9 independently to figure out what is the wavelength of each
10 one of them, and we validated our results two ways, one,
11 with a spectrophotometer, and two, with the results of the
12 studies that we have done.

13 Q. Thank you. Let's now talk about the Masimo
14 products. Are there Masimo products that use this
15 wavelength correction?

16 A. Yes. All of rainbow« sensors use wavelength
17 correction except for a couple of them. One is an acoustic
18 sensor, and the other one, it's called Light Set 1, but the
19 rest of them all use temperature correction.

20 Q. Okay. Let's talk about the rest of them. These
21 rainbow« sensors, what kind of products do they connect to?

22 A. They connect to the board, rainbow« device
23 essentially, and those they have what we call MX board, and
24 there are many revisions of those MX boards, 1, 3, 5. I
25 don't know where we are right now, but the temperature of

1 each one of them as well as the wavelength as well as the
2 signal coming from each LED is taken inside the board,
3 processed, corrected, based on what the wavelength is, and
4 then some kind of a calculation is done to come up with
5 saturation, carboxyhemoglobin, methemoglobin, pulse rate, or
6 what other parameter we have.

7 Q. Okay. Can you tell me the name of some of the
8 rainbow« products?

9 A. Well, the very first one that we have released is
10 RAD-57. I'm very proud of that one. That was the very
11 first device that were able to measure noninvasively
12 carboxyhemoglobin in the human body.

13 Q. Okay. Going back to the sensors, do all rainbow«
14 sensors besides the two that you mentioned have some common
15 features?

16 A. Yes.

17 Q. Okay. Let's talk about those common features.
18 Let's talk about the LEDs. Do all rainbow« sensors have --

19 A. Yeah, they all have LEDs. That's really common.
20 Typically pulse oximeter sensor that you see in the
21 hospital, the one with the red color, they have two, one
22 red, that you see. These all have more than two. Typically
23 eight or more.

24 Q. Okay. And do these sensors all have thermistors?

25 A. Yes, they all do have thermistors with a thermal

1 mass.

2 Q. And do all of these have detectors as well?

3 A. Yes, they have at least one or more detector.

4 Q. Okay. And what do the devices like the RAD-57 do
5 with the signals from the sensor?

6 A. Could you repeat? I'm sorry. I couldn't hear
7 you.

8 Q. Oh, I'm sorry. What do the rainbow« devices such
9 as the RAD-57 do with the signals from these rainbow«
10 sensors?

11 A. Okay. So, basically, we isolate what we call a
12 photoplethysmograph signal. It's really the heart -- that's
13 how we can isolate it from the rest of the signals.

14 We isolate that, and it's really not trivial to
15 get a reliable one. We have -- let's say you have an LED.
16 You're going to have eight of those signals. We have a
17 temperature coming in. We do the correction for the
18 wavelengths, and these get adjusted. And at the end we have
19 a calculation that is done based on that. And then there is
20 a display that shows up.

21 Q. You mentioned some calculations that are done.
22 Did you write any code for this wavelength correction?

23 A. I wrote actually the original code for all of
24 rainbow« including the wavelength correction.

25 Q. Okay. And is there code in the production

1 releases of the Masimo devices?

2 A. Well, the software folks took my code and
3 obviously they said, okay, we need to modify, restructure
4 it. And so my code on its own is not there, it's the
5 modified version of it is there, and obviously there were
6 more additions over the years.

7 Q. And does the --

8 JUDGE BHATTACHARYYA: I'm sorry to interrupt.
9 It's time -- it's about time for our afternoon break. If
10 you just have a few more questions for the witness, then we
11 can finish that first, but, otherwise, we should take the
12 break now.

13 MR. LATEEF: We can take the break now.

14 JUDGE BHATTACHARYYA: All right. Then we're in
15 recess for 15 minutes.

16 (Whereupon, the proceedings recessed at 3:21
17 p.m.)

18 (In session at 3:35 p.m.)

19 JUDGE BHATTACHARYYA: We are on the public
20 record.

21 Mr. Lateef, you may continue.

22 BY MR. LATEEF:

23 Q. Okay. Mr. Diab, you have a binder in front of
24 you, and I'd like you to take a look at what should be in
25 your first tab, CPX-125. Sorry. 152.

1 A. Okay.

2 Q. Do you recognize this?

3 A. This is part of the software that does the
4 wavelength correction in the rainbow« product.

5 Q. Okay. You can put that away.

6 Could you next take a look at CX-678? It's also
7 on the screen in front of you.

8 A. 678, okay.

9 Q. Yes, it's also on the screen. Okay.

10 Do you recognize what this is?

11 A. Yes. This is the RAD-57 Operator Manual, that's
12 the device we introduced in 2005.

13 Q. And do you know the date of this Operator's
14 Manual?

15 A. Probably a later date than 2005. It should be
16 very similar.

17 Q. If we can move forward a couple pages.

18 A. I think 2018, something like that. But the
19 original one was very similar to this.

20 Q. Okay. And let's go back to talking about the
21 sensors again, the rainbow« sensors that we were discussing.

22 Where are the emitters placed in a rainbow«
23 sensor?

24 A. Well, the emitters are placed on what we call an
25 emitter assembly, which we discussed this a little while

1 ago. Those are -- have been placed on a flex circuit, which
2 then in this case has the emitter assemblies as well as the
3 photodiode.

4 And in the picture, the expanded picture that we
5 have shown originally -- or not originally -- earlier of
6 that clip sensor, you could see that flex circuit, and then
7 the hierarchy will go higher and higher and higher until you
8 have the whole sensor.

9 MR. LATEEF: We're now going to go back on some
10 Masimo CBI information. Could we go back on the Masimo CBI?

11 (Whereupon, the hearing proceeded in confidential
12 session.)

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3 JUDGE BHATTACHARYYA: Let's move to the public
4 record.

5 CROSS-EXAMINATION

6 BY MR. SELWYN:

7 Q. Good afternoon, Mr. Diab.

8 A. Good afternoon.

9 Q. You are one of the cofounders of Masimo, correct?

10 A. Correct.

11 Q. And at Masimo you've been chief technology
12 officer, chief scientist, and fellow scientist, correct?

13 A. Correct.

14 Q. You're not aware of any evidence that Apple ever
15 copied the '127 patent, correct?

16 A. I have not looked at any evidence myself.

17 Q. You're not aware of a shred of evidence that
18 Apple copied the '127 patent, correct?

19 A. I said I did not look into that, so I cannot form
20 an opinion about it.

21 Q. You're a named inventor of the '127 patent,
22 correct?

23 A. Correct.

24 Q. But you're not here to suggest that Apple Watch
25 uses or practices the '127 patent, correct?

1 A. I have not looked at any piece that has to do
2 with the Apple Watch to make or form any opinion.

3 Q. So you have not compared the claims of the '127
4 patent on the one hand with any Apple product on the other,
5 correct?

6 A. No, I have not.

7 Q. And you're also not here to suggest that Masimo
8 practices or uses the '127 patent, correct?

9 A. I'm sorry. Could you repeat that question?

10 Q. Sure. You're not here to suggest that Masimo is
11 using or practicing the '127 patent, correct?

12 A. That is incorrect. We are using and practicing
13 the '127 patent in all of our rainbow« sensors.

14 Q. Well, sir, you have not compared the claims of
15 the '127 patent to any Masimo product; isn't that true?

16 A. I think I did. I think Masimo uses all of those
17 in the patent. Actually all the aspects that we described,
18 all the embodiments, nearly all of them that we described in
19 the patent uses them. So how could we not practicing the
20 patent?

21 Q. Mr. Diab, do you remember giving a deposition in
22 this case?

23 A. Yes.

24 Q. Can we have on the screen, please, Mr. Diab's
25 deposition at page 77, lines 9-14?

1 MR. LATEEF: Should we now open the cross binder
2 or materials that you gave him?

3 MR. SELWYN: Certainly. Feel free.

4 MR. LATEEF: Mr. Diab, there should be an
5 envelope near you with the materials.

6 Q. Mr. Diab, if you open the binder, tab 11, your
7 deposition, and I'd like to direct your attention to page
8 77, lines 9-14, which are on the screen.

9 We asked this question and did you give this
10 answer:

11 Question. Have you ever compared any Masimo
12 product against any claim in the '127 patent to see if that
13 product practices each element of the claim?

14 Answer. No, I did not.

15 Were you asked that question and did you give
16 that answer?

17 A. I think I did, but that's for the claims. I was
18 talking about the patent. The patent itself, the text of
19 the patent, which I helped wrote, and I know that we have
20 worked on all of those, do practice the patent. I don't
21 think I looked at the claim in details. But for the
22 patents, absolutely.

23 Q. Mr. Diab, you testified today about some
24 mechanical aspects of Masimo's products, like adhesives,
25 correct?

1 A. Yes.

2 Q. You're not familiar with the mechanical aspects
3 of the '127 patent, correct?

4 A. No. My work was more on to related to the
5 wavelength correction and light piping issue, the mechanical
6 aspect of it. I understand how the adhesive works. I
7 understand how the die attached work. I understand that
8 there is a cure that they use in the oven. I understood all
9 of that obviously because of my interaction, but I'm not an
10 expert or somebody who is, you know, really familiar with
11 the process itself.

12 Q. Sir, the first time that you read the '127 patent
13 since it issued was the week before your deposition in this
14 case, correct?

15 A. Since it was issued, yes.

16 Q. And you did not review any prior art patents or
17 publications before you applied for the '127 patent,
18 correct?

19 A. I myself did not review, no. I wrote a
20 disclosure, and we sent it to our lawyers.

21 Q. You're not aware of anyone at Masimo
22 investigating whether there were any products on the market
23 already that could estimate wavelength shifts before you
24 applied for the '127 patent; isn't that true?

25 A. I don't know if -- you're asking me about if

1 somebody at Masimo was aware 15, 17 years ago? I do not
2 remember that. I have no idea to remember it.

3 Q. But you do know that the concept of wavelength
4 shift was well-established before the '127 patent, correct?

5 A. Yes.

6 MR. SELWYN: Your Honor, I think at this point we
7 need to go on to the confidential Masimo business record.

8 JUDGE BHATTACHARYYA: Moving on to the Masimo
9 confidential record.

10 (Whereupon, the hearing proceeded in confidential
11 session.)

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3 JUDGE BHATTACHARYYA: We're moving back to the
4 public record.

5 REDIRECT EXAMINATION

6 BY MR. LATEEF:

7 Q. Mr. Diab, did you ever investigate whether a
8 board with one metallic layer could provide a thermal mass?

9 A. Yes.

10 MR. SELWYN: Objection, Your Honor.

11 JUDGE BHATTACHARYYA: I'm sorry. I didn't hear
12 the objection.

13 MR. SELWYN: It's beyond the scope.

14 JUDGE BHATTACHARYYA: Mr. Lateef, can you
15 respond?

16 MR. LATEEF: He asked the witness about the
17 number of layers that are in the Masimo sensor and about the
18 dimensions of that regarding a thermal mass, implying that a
19 smaller thermal mass would not provide the benefit of the
20 '127 patent. I'm merely responding to that.

21 JUDGE BHATTACHARYYA: Mr. Selwyn, anything
22 further?

23 MR. SELWYN: I asked no question to which that
24 question that was just posed would be relevant to.

25 JUDGE BHATTACHARYYA: I agree. The question is

1 outside the scope of the cross. So that portion of the
2 testimony is stricken.

3 BY MR. LATEEF:

4 Q. Mr. Diab, you mentioned test stations earlier.
5 Do you remember that?

6 A. Yes.

7 Q. Are there test stations that check the
8 characterization of the current Masimo sensors?

9 A. Yes. We have that on every single sensor. It's
10 tested before it's shipped. The -- and it's the same
11 technique that was used on the old version of the sensor and
12 the new version of the sensor. There is no sensor that
13 leaves Masimo production without being characterized, and
14 the characterization validates whether the equation is
15 working or not. If it doesn't, it gets thrown out.

16 So that is our validation of whether it's ceramic
17 or not. Every single sensor gets characterized and
18 validated that the wavelengths that comes out correspond to
19 the equation that we put inside the sensor.

20 MR. LATEEF: I have no further questions,
21 Your Honor.

22 MR. SELWYN: No questions, Your Honor.

23 JUDGE BHATTACHARYYA: Thank you. Mr. Diab, thank
24 you so much for being with us.

25 THE WITNESS: Thank you, Your Honor.

1 MS. SWAROOP: Your Honor, Complainants' next
2 witness will be Mr. Ammar Al-Ali, and Mr. Jensen will be
3 conducting that examination.

4 MR. MUELLER: Your Honor, Sarah Frazier will be
5 conducting the cross-examination.

6 JUDGE BHATTACHARYYA: Thank you.

7 MR. JENSEN: Good afternoon, Your Honor. This is
8 Steve Jensen.

9 Mr. Al-Ali, are you comfortable and do you have
10 your book?

11 THE WITNESS: Yes. Good afternoon.

12 MR. JENSEN: May we begin, Your Honor?

13 JUDGE BHATTACHARYYA: I'll swear in the witness
14 first before we proceed further.

15 Mr. Al-Ali, did I pronounce it right?

16 THE WITNESS: That's correct.

17 JUDGE BHATTACHARYYA: Welcome. Thank you for
18 coming. Do you understand you're under an obligation to
19 tell the truth here today?

20 THE WITNESS: I do.

21 AMMAR AL-ALI,
22 having been first duly sworn and/or affirmed
23 on his oath, was thereafter examined and testified as
24 follows:

25 JUDGE BHATTACHARYYA: Thank you.

1 DIRECT EXAMINATION

2 BY MR. JENSEN:

3 Q. Mr. Al-Ali, could you please state and spell your
4 name for the record?

5 A. Ammar Al-Ali, A-M-M-A-R, A-L hyphen A-L-I.

6 Q. And who is your current employer?

7 A. Masimo Corporation.

8 Q. When did you start at Masimo?

9 A. I started April 1995.

10 Q. Could you just briefly explain your job history
11 at Masimo since you started?

12 A. Yes. I started at Masimo in '95 as a software
13 engineer, and then moved from that to manage the engineering
14 department. I worked in the early days of '95 to about 2000
15 on the Masimo saturation algorithm.

16 And then after that our RAD system, which is a
17 medical device, and then after that I worked on the rainbow«
18 system, and lately I've been working on wearable
19 technologies.

20 Q. And what are your current responsibilities at
21 Masimo?

22 A. Right now I oversee the technology development of
23 the company.

24 Q. Okay. And you mentioned wearables in your
25 previous answer. Did there come a point in time when from

1 your technology perspective the Masimo wrist pulse oximeter
2 project became more formal?

3 A. Yes. I started looking into measuring the wrist
4 somewhere around 2014, 2015. Did some feasibility work
5 there. And then started again in 2017 to 2018. And in 2019
6 we actually put a complete team to go after it, expanded the
7 team so we have enough support from all disciplines of the
8 engineering department.

9 Q. And did you file any patents back with that early
10 work that you did?

11 A. Yes. I did file a patent on 2015 based on that
12 initial work.

13 Q. And can you find in your book Complainants'
14 Exhibit 4? Or we'll also pull it up on the screen. And let
15 us know if you recognize that patent.

16 A. Yes, I do recognize that patent.

17 Q. And is this one of the patents that you were
18 referring to that stemmed from the work you mentioned in
19 2014 and 2015?

20 A. That's correct. This was from the 2015 time,
21 yes.

22 Q. And you're an inventor on this patent, right?

23 A. Yes, I am.

24 Q. What was your involvement in this patent?

25 A. I am the designer for the and the inventor for

1 the subject matter. I gave disclosure to the attorneys to
2 actually file the patent.

3 Q. Okay. And then you said that things started
4 from -- I think you said working more with a team happened a
5 little later.

6 What started happening then when you picked it
7 back up, I think you said?

8 A. Oh, in 2019 we put a complete team behind this
9 technology. We hired mechanical engineers, electronic
10 engineers, and software. So we actually started making the
11 sensor and trying to optimize its performance.

12 Q. And when did Masimo have its own wrist pulse
13 oximeter devices with sensing on the wrist?

14 A. This would be late 2019.

15 Q. And could you please on the -- it's on the stand
16 that's behind you -- or someone might have put it next to
17 you, please find Complainants' physical exhibit 22. It's
18 either there or it's on the cart.

19 A. Oh, it's on the cart.

20 Q. Number 22.

21 A. I found it.

22 Q. Okay. Do you recognize Complainants' Exhibit 22?

23 A. Yes. It's one of our early sensors.

24 Q. Can you show us just on your camera there, not on
25 the ELM0, but just on the camera what you're holding?

1 A. (Complying.)

2 Q. And do you recognize that sensor?

3 A. Yes, I do.

4 Q. And when was it made?

5 A. This sensor was made in October 2019.

6 Q. How can you tell when it was made?

7 A. I do remember that, but also it has the labels on
8 it.

9 Q. And maybe you could put it on the ELM0 so that we
10 can see that, what you're looking at. There we go.

11 So you were looking -- you were mentioning some
12 labels. Are those the labels down there?

13 A. Yes, these are the labels, and 10-23-19, this is
14 when it was actually used for a Desat study.

15 Q. When you say "Desat study," what do you mean by
16 that?

17 A. This is a study that we do to evaluate the
18 accuracy of the product. We bring in volunteers and we
19 attach the sensor to their wrist and make them breathe a
20 different mixture of oxygen and nitrogen to change the SpO2
21 in their blood. So typically that study we take a person
22 from about 100 percent, which is normal, down to about 70
23 percent.

24 Q. On the back of the sensor head of that watch, is
25 there a label?

1 MR. JENSEN: Actually, Your Honor, I should have
2 said earlier we were on the confidential record as soon as I
3 started pulling up these samples. I would like to be on the
4 confidential CBI for Masimo at this point.

5 (Whereupon, the hearing proceeded in confidential
6 session.)

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

2 TITLE: CERTAIN LIGHT-BASED PHYSIOLOGICAL MEASUREMENT DEVICES
3 AND COMPONENTS THEREOF

4 INVESTIGATION NO.: 337-TA-1276

5 HEARING DATE: June 6, 2022

6 LOCATION: Washington, D.C. - Remote

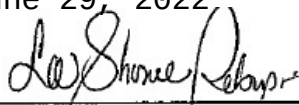
7 NATURE OF HEARING: Evidentiary Hearing

8 I hereby certify that the foregoing/attached
9 transcript is a true, correct and complete record of the
above-referenced proceedings of the U.S. International Trade
Commission.

10 Date: June 29, 2022

11 Signed:

ss//

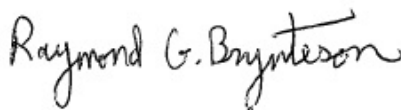


12 Signature of the Contractor or the Authorized Contractor's
13 Representative

14 I hereby certify that I am not the court reporter
and that I have proofread the above-referenced transcript of
15 the proceedings of the U.S. International Trade Commission
against the aforementioned court reporter's notes and
16 recordings for accuracy in transcription in the spelling,
hyphenation, punctuation and speaker identification and did
17 not make any changes of a substantive nature. The
foregoing/attached transcript is a true, correct and
complete transcription of the proceedings.

18 Signed:

19 ss//



20

21 I hereby certify that I reported the
above-referenced proceedings of the U.S. International Trade
Commission and caused to be prepared from my record media
22 and notes of the proceedings a true, correct and complete
verbatim recording of the proceedings.

23 Signed:

24 ss//



25