

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

MASIMO CORPORATION,)
 Petitioner,)
 v.) Case IPR 2023-00664
) U.S. Patent 11.106,352
APPLE INC.,)
 Patent Owner.)
_____)

DEPOSITION OF CRAIG ROSENBERG, PH.D.

June 10, 2024

9:02 a.m. Pacific Daylight Time

Reported by: Lori J. Goodin, RPR, CRR, RSA,
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20

21

22

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1 MONDAY, JUNE 10, 2024, 9:02 p.m. PST

2 PROCEEDINGS

3 * * *

4 Whereupon,

5 CRAIG ROSENBERG, PH.D.,

6 a witness called for examination, having been
7 first duly sworn, was examined and testified as
8 follows:

9 * * *

10 EXAMINATION

11 BY MS. LEUNG:

12 Q. Dr. Rosenberg, thank you for being
13 here today. So, to start, I would like to
14 recognize that our conversation today is being
15 transcribed by the court reporter.

16 And to make her job easier and
17 ensure that we can obtain an accurate record of
18 the deposition, it is important that we strive
19 not to talk over one another.

20 Now, I will ask a question and then
21 provide you with an opportunity to respond.

22 If the question is unclear, please

1 just ask me to clarify and I will restate or
2 rephrase the question.

3 I will try to take a break about
4 every hour. But, if you need a break at any
5 time, just let me know.

6 Do you understand?

7 A. I do, yes.

8 Q. Please state your full name for the
9 record.

10 A. Craig Stuart Rosenberg.

11 Q. Do you understand that you are under
12 oath?

13 A. I do, yes.

14 Q. Is there any reason that you can't
15 give truthful and accurate testimony today?

16 A. No.

17 Q. Do you have any documents in front
18 of you?

19 A. I do. I have a printout of my
20 fourth declaration. And I have a digital copy of
21 my fourth declaration and the prior art that is
22 referenced in it, inside of it, as well as the

1 Motion to Amend, and my CV.

2 Q. And are those unmarked copies of
3 everything that you have in front of you?

4 A. They are, yes.

5 Q. Do you have, also have access to the
6 download link, just in case there is anything
7 that we need to discuss that you don't have in
8 front of you?

9 A. I do. I have the url here.

10 Q. Okay. So, let's turn to your fourth
11 declaration, which is Exhibit 1064 in this
12 proceeding.

13 (Exhibit 1064 marked for
14 identification.)

15 BY MS. LEUNG:

16 Q. Excuse me.

17 So, your fourth declaration here is
18 for Case Number IPR 2023-00664.

19 Correct?

20 A. That is correct, yes.

21 Q. And, this case is concerning Patent
22 Number 11,106,352. Is that correct?

1 A. That is also correct.

2 Q. So, in your fourth declaration,
3 Exhibit 1064, can you turn to Paragraph 44,
4 please.

5 A. Sure.

6 Q. Let me know when you are there.

7 A. I see 44. I am looking at it on my
8 screen.

9 Q. Okay. In Paragraph 44, the last
10 sentence you say, "A POSITA would have understood
11 that activating the display would necessarily
12 require transitioning the computer system from a
13 screen off state to a screen on state."

14 Now, would a POSITA also have
15 understood that not activating and activating the
16 display requires controlling power supply to the
17 display?

18 A. Not necessarily. I don't think so.
19 I think that a POSITA would understand that there
20 are multiple ways to turn a screen on or off,
21 from a screen off state to a screen on state.

22 It is not even turning the display

1 on or off which would imply power.

2 But making the screen visible versus
3 making the screen invisible.

4 So, you could paint the screen with
5 black pixels. The display could have power the
6 entire time, and it could be either painted with
7 a wake screen or a home screen, et cetera. Or it
8 could be painted with black pixels or any other
9 color pixels.

10 And that could -- that would be
11 understood as being a screen off state. That
12 could be a form of a screen off state.

13 But a lower power state -- that
14 would probably be a lower power state, too.

15 But, another way is actually turning
16 off the display which would, which would consume
17 lower power as well.

18 So, I have just -- I am just saying
19 that there are options there. There is multiple
20 ways to reduce the power of it by painting black
21 pixels versus white pixels which could consume
22 less energy or turning off the display entirely.

1 Q. And turning off the display entirely
2 would involve controlling power supply to the
3 display, right?

4 A. I'm not sure if I would -- I think
5 yes, that is one way to do it.

6 But there may be other ways that,
7 that a hardware engineer would be able to send a
8 signal to the display so it wouldn't have to
9 completely shut down power entirely but could
10 move it to a lower power state.

11 So, I think that is my best answer.

12 Your question implies that there is
13 only one way to do it. And, I'm suggesting that
14 there may be more than one way to do it.

15 Q. Okay. So, let's explore your -- the
16 way that you described earlier about painting all
17 of the pixels black.

18 So, to keep the display in a screen
19 off state, the computer system or the controller
20 would need to continuously send signals to each
21 pixel to keep it black in the screen off state?

22 A. I don't think so, no. That is not

1 my understanding of how hardware works. You send
2 a signal when you want to change the color.

3 Q. So, you would send the signal once
4 to transition it to a screen off state?

5 A. Again, this could just depend on the
6 display technology.

7 Where different kinds of display
8 technologies might require different kinds of
9 control signals as far as -- I wouldn't want to
10 say that, just a blanket statement that in all
11 display technologies with all frame buffers in
12 all kinds of display controllers, you only send
13 the signal once.

14 You know, with old style TVs with
15 cathode ray tubes, which aren't used in these
16 devices, you are essentially continuously
17 painting the pixels in either an interlaced or
18 non-interlaced fashion.

19 But LCD versus OLED versus plasma
20 displays, I mean there are many kinds of display
21 technology. And you are asking me questions
22 about the specifics of hardware controllers for

1 particular frame buffers and displays.

2 And I'm just -- I don't think it
3 would be proper for a human factors engineer and
4 a user interface designer to say just a blanket
5 statement that in all cases that you only send
6 the signal once or in all cases you have to
7 continuously send the signal.

8 I think it would depend on the
9 hardware that is being implemented and the kind
10 of display and the kind of controller and the
11 kind of frame buffer that is all being used.

12 Q. Well, as a human factors engineer
13 and a user interface designer, would you know
14 how, for each type of display technology, it
15 would work to keep it, a device in a screen off
16 state?

17 A. Well, I could tell you that you
18 could certainly cut power to the display. That
19 is one way to do it, like you suggested at the
20 beginning.

21 But, I think, your question maybe at
22 the beginning was, is that the only way to do it.

1 So, that would certainly work, and
2 as a human factors engineer, I would know that
3 that would work.

4 Q. Okay. And you said there are other
5 ways to do it.

6 And so I am asking whether you would
7 know, as a human factors engineer, the other way
8 that you described painting the screen black or
9 the pixels black.

10 Would you know for the different
11 display technologies how that would work?

12 A. Well, I know that all of the display
13 technologies that I mentioned have the capability
14 of painting the screen black.

15 And human factors engineers and
16 software engineers, of which I am both, would
17 know how to use the interface of the various
18 display controllers in the frame buffer to paint
19 the pixels black, yes. And that would work as
20 well.

21 That would be a second method that
22 would not only blank the screen, but it would

1 send a screen into a lower power state.

2 Q. Okay. Let's move on to your
3 Paragraph 50 in your fourth declaration, which is
4 Exhibit 1064.

5 A. All right. I am looking at
6 Paragraph 50.

7 Q. In Paragraph 50, you say that, "A
8 POSITA would not have understood with reasonable
9 certainty whether a specific orientation of the
10 device is substantially horizontal or vertical
11 within the context of these claims."

12 So, how are you able to map the
13 prior art to the claim language, if you don't
14 understand whether a specific orientation of the
15 device is substantially horizontal or vertical?

16 A. Well, I do believe that it is
17 indefinite. And I believe that it also lacks
18 written description.

19 But, should the Board construe this
20 claim, I am able to show in both the Tu and
21 Le Grand no matter what the reasonable
22 construction, it, you know, for any given

1 reasonable construction that both Tu and Le Grand
2 disclose this.

3 And I am happy to talk about that.

4 Q. So, what reasonable constructions
5 are you construing the claims in the prior art
6 under here?

7 A. Well, should -- you know, like I
8 said I believe that it is indefinite and lacks
9 written description both, and I have sections of
10 that in my report that we can go over.

11 But should the Board construe this,
12 I think that under a broad, a wide range of
13 angles, if you will, tilt angles, Tu definitely
14 discloses that, and I can go through the
15 disclosures in Tu.

16 I think Tu also discloses it under a
17 very narrow construction where it needs to be
18 very close to, to vertical or very close, if
19 not -- you know, I don't want to say identical,
20 but extremely close.

21 Horizontal, vertical or extremely
22 close to, I guess is how I will put it.

1 And then I think Le Grand discloses
2 being also vertical or horizontal or extremely
3 close.

4 And if you would like to go through
5 that disclosure in my analysis, I would be happy
6 to do so.

7 Q. So, are you saying that a reasonable
8 construction that the Board might take might be
9 that substantially vertical means very close to
10 vertical?

11 A. Not quite. I'm not saying that.
12 I'm saying that I don't believe the
13 Board -- I don't believe a POSITA would -- I
14 think there is lack of written description, the
15 spec doesn't -- it doesn't give the reader
16 guidance as to what it, what it means.

17 And it is indefinite. You can't
18 discern whether one would infringe the claim or
19 not.

20 But, if the board does choose to
21 come up with a construction, with Tu and Le
22 Grand, both Tu and Le Grand, Tu showing I think a

1 broad, you know, anywhere between 45 degrees
2 and -- let's call it 135 degrees, so, 90 degrees
3 plus or minus 45 degrees is, is disclosed in Tu.

4 So, sort of a broader construction
5 of what it means to be substantially vertical.
6 Vertical would be 90 degrees. You can go plus or
7 minus. I think that is well disclosed.

8 Also I think there is disclosure in
9 Tu for it needing to be very close.

10 And certainly in Le Grand there is
11 disclosure that it needs to be exactly vertical
12 or very close.

13 And I'm using the examples here for
14 substantially vertical, but the same applies for
15 substantially horizontal.

16 Q. Okay. So, are you saying that a
17 broader construction of substantially vertical or
18 substantially horizontal could be, like you said,
19 anywhere from 45 to 135 degrees?

20 A. For substantially vertical, I would
21 say it would need to be -- if the Board chose a
22 construction, which I wouldn't agree with,

1 because I believe that the term is indefinite,
2 and I believe that there is lack of written
3 description, as I describe later in my
4 declaration.

5 But, should the Board determine that
6 construction is substantially vertical means
7 greater than 45 degrees and less than
8 135 degrees, I would just point the Board to
9 disclosures in Tu that render that obvious.

10 I guess that is what I'm trying to
11 convey. And I think the Board should consider
12 that.

13 Q. And are you getting this 45 to
14 135 degrees from Figures 1C and 1D of Tu?

15 Or is there something in Tu's
16 description that actually says 45 degrees
17 to 135 degrees?

18 A. Let me, let me look for a moment. I
19 am primarily getting it from the Figures 1C and
20 1D themselves.

21 Q. So, Tu doesn't mention in the
22 written description any specific number of

1 degrees that corresponds to Figures 1C and 1D; is
2 that right?

3 A. Not a specific angle degree, no.
4 But there are -- the Figure 1C and 1D, or one
5 moment -- let me see something else.

6 I think your pending question is
7 does Tu have, talk about a specific number of
8 degrees associated with the threshold I assume.

9 And, no. Tu doesn't describe it in
10 that way. It doesn't describe a specific number
11 of degree to be substantially horizontal or
12 substantially vertical.

13 But, Tu does show bringing the
14 device into the line of sight, and that is
15 described in 1C how it is not in the line of
16 sight, and in 1D it is.

17 And one can see in 1D that not only
18 is the device tilted just more than 45 degrees,
19 but that the viewing factor between the head and
20 the device is orthogonal to, or perpendicular, if
21 you will, orthogonal to the face of the device
22 which is how one would typically choose to view a

1 display.

2 Q. So, in Paragraph 57, you point to
3 Tu, Exhibit 1065 in this proceeding,
4 Paragraph 192.

5 (Exhibit 1065 marked for
6 identification.)

7 BY MS. LEUNG:

8 Q. Can you turn to that Paragraph 192
9 in Tu, and let me know when you are there.

10 A. Sure. Let me look for it, please.
11 I am reading 192 now.

12 All right. Go ahead with your
13 question, please.

14 Q. So, in Paragraph 192, Tu says,
15 "Those skilled in the art will appreciate that
16 most users cannot hold their arms perfectly still
17 and that these terms, referring to approximately
18 and substantially, are used to indicate that
19 allowances may be made for the effects of natural
20 user instability, as well as inherent accuracy of
21 the various motion sensors."

22 Do you agree with that sentence?

1 A. Yes. I agree that motion sensors,
2 that all sensors will have tolerance, will have
3 specifications that correspond to how stable the
4 output data is.

5 So, even if it were held in a vice
6 without movement, that there may be some variance
7 associated with the output.

8 And, I also agree that people aren't
9 able to hold their limbs in exactly the same
10 position and that there will be some natural
11 movement of that limb relative to their eye gaze.

12 So, I agree with those.

13 Q. So, in those situations would the
14 term "approximately and substantial" be
15 appropriate?

16 MR. CANNON: Objection to form.

17 THE WITNESS: I think -- all they
18 are saying is that it doesn't need to be
19 compared to an exact value.

20 Like, if, if the computer code that
21 was, that was processing the system of Tu
22 said if the angle AY, in the language of Tu,

1 which is the tilt angle of the watch face on
2 the rotation of the forearm, if that equals
3 45.0000 degrees, then do something.

4 But I'm saying that the programmers
5 and the designers of the system of Tu would
6 realize that that wouldn't be appropriate,
7 given the variance of data associated with
8 perhaps the sensor itself or the ability to
9 hold one's arm.

10 So, when describing the algorithm,
11 if you will, or the system that, of Tu, they
12 used the words "approximately" or
13 "substantially." They are essentially close
14 to, but it doesn't need to be perfection.

15 This is the same claim language in
16 the proposed substitute claims, too,
17 substantially horizontal, substantially
18 vertical.

19 And Tu is also using this in prior
20 art.

21 BY MS. LEUNG:

22 Q. So, would a POSITA have understood

1 that when the words "approximately" or
2 "substantially" are used, they are essentially
3 indicating close but -- close, but that physical
4 perfection is unnecessary?

5 A. I wouldn't characterize it that way.

6 I would say potentially, yes, that
7 might satisfy it.

8 But also 46 degrees -- if 90 is
9 actually vertical, true vertical, 90 degrees.

10 If you are at 46 degrees, so you are
11 more vertical than horizontal, right. If you
12 were at 44 degrees, you would be at more
13 horizontal than vertical. But you are one degree
14 past 45, so you are at 46 degrees.

15 Perhaps to a POSITA that could mean
16 that you are substantially vertical, too.

17 You are not really super close to
18 90 degrees, but you are closer to vertical than
19 you are to horizontal.

20 And that is, that is why I think
21 that the term is indefinite, and that the Board
22 should, should come to that conclusion.

1 But your question implied that it
2 only means that it is very close. That, you
3 know, that it is extremely close, very close.
4 Depends on how you want to characterize it.

5 But I would say that a POSITA might
6 think that it is anywhere between 45.1 to 134.9.
7 So closer to vertical than horizontal, but, but
8 you are not really that close.

9 So, that is why I think it is
10 indefinite. And there is, there is not good
11 description in the '352, lack of written
12 description about exactly what this means.

13 But, that said, that I think that Tu
14 is disclosing the, in a broad sense, that it
15 comes into focus. It does have line of sight.

16 The display is turned on, in
17 Figure 1D I'm talking about, when it is, when it
18 is relatively far from vertical.

19 So, should the Board come up with
20 choose to construe this as being more --

21 If they choose to construe that
22 substantially vertical means more vertical than

1 horizontal, then I think Figure 1D discloses
2 that, as well as the text of how it is turning on
3 the display when, when the angle -- it comes into
4 line of sight and that watch face is tilted to
5 the degree that it is which is slightly more
6 vertical than horizontal.

7 Q. How can you tell from looking at
8 Figure 1D that that is slightly more vertical
9 than horizontal?

10 A. Let me go to the figure.

11 To me that is how it looks. That is
12 just how it looks to me.

13 It looks like it is, it is somewhere
14 between 45 and 50 degrees, is how it looks to me.

15 But, also, I know from looking at 1D
16 and from reading the specification, that the
17 system of Tu would work should the user 100
18 continue to lift their arm in front of their face
19 so that their gaze is horizontal.

20 And in that case, the system of Tu
21 would have the watch face either exactly vertical
22 or very close to vertical.

1 So, just one drawing was done in 1D
2 for the illustrator for one specific angle.

3 But, but there could be many
4 different angles from the current angle all of
5 the way to what I described where the user is
6 looking straight ahead in a gaze that is
7 horizontal to the ground or the table.

8 Q. Can you point me to specific
9 portions of Tu that describe what you just
10 explained?

11 A. Okay. Just another moment. In
12 Paragraph 67 of Tu, Tu is talking about how when
13 the device comes to rest in an orientation with
14 its display being in the user's line of sight.

15 And basically -- and it goes on to
16 say accordingly, Block 410 can include estimating
17 an ending pose for the device, based on the
18 newest samples which correspond to an end at the
19 interval.

20 "The ending pose can be compared to
21 a range of poses consistent with the display
22 being in the user's line of sight, a range of

1 tilt angles in the Y or X direction."

2 So, they are talking about a range
3 of tilt angles and they are talking about being
4 in the user's line of sight. And if you look at
5 1D --

6 Well, let's start with 1C. So, 1C,
7 it is described as not being in the user's line
8 of sight, and then in 1D it is.

9 So, this would be, you know, near
10 the beginning at the 45, 46, 47, somewhere in
11 there, degree range which it comes -- it is
12 described as being in the user's line of sight.

13 And then in 67, they talk about
14 there can be a range of tilt angles.

15 So, the user isn't always -- the
16 system of Tu needs to, needs to work for more
17 than just this one angle where the user's wrist
18 is down low. It also needs to work when it is up
19 high, too.

20 So, 67 is disclosing a range of tilt
21 angles in which that vector, that viewing -- you
22 know, the watch face, the device itself can be in

1 view. It can be in line of sight.

2 And it is a -- a POSITA would
3 understand that as that raise gesture gets
4 further and further and becomes more toward eye
5 level, that the user is going to continue to
6 rotate about the X-axis of Tu or the tilt of Y,
7 which is AY, so that it becomes vertical or
8 substantially vertical.

9 So, I think between 67 and I think
10 it was, was it 192 that describes this -- one
11 moment. Let me get that paragraph on the record.
12 192. Yes.

13 So, between 67 and 192, in Figure 1D
14 that -- and POSITA knowledge that Tu needs to
15 work for more than just this one very specific
16 orientation. It is disclosed that the -- if the
17 raise gesture continues, the device face gets
18 more and more vertical.

19 THE WITNESS: I think you might be
20 on mute there.

21 MS. LEUNG: Oh, sorry. Yes, I am on
22 mute. Sorry.

1 BY MS. LEUNG:

2 Q. So, Paragraph 67 doesn't mention
3 anything about it being substantially vertical --
4 or it doesn't say substantially vertical in
5 Paragraph 67; is that right?

6 A. It doesn't use the word
7 "substantially vertical," but it does talk about
8 that it is expected that if a raise gesture is
9 performed, upon completion of the gesture the
10 device will come to rest in an orientation
11 consistent with the display being in the user's
12 line of sight, which is 1D.

13 And, and more importantly it goes on
14 to say that the ending pose can be compared to a
15 range of poses consistent with the display being
16 in the user's line of sight, i.e. a range of tilt
17 angles with possible raise gestures being
18 detected if the ending pose is within that range.

19 So again, that is telling a POSITA
20 that it is more than just the one very specific
21 orientation that the artist -- the illustrator
22 drew in 1D that will satisfy, that will satisfy

1 turning the display on, initiating the wake
2 control logic.

3 There is a range that works. And a
4 POSITA would understand, and even lay people
5 without training, would understand that when you
6 are viewing a display, one doesn't want to look
7 at it parallel to the plane of the display.

8 One wants to look at it
9 perpendicular or orthogonal, the viewing vector
10 is, should be orthogonal or close to orthogonal
11 to the display itself, so you can see the display
12 clearly and as -- it is just the geometry of the
13 situation.

14 As that raise gesture gets greater
15 and greater, and 67 is disclosing a range of
16 poses -- a range of range gestures, that that
17 angle AY will continue to increase so that the
18 face of the device is -- remains relatively
19 orthogonal to the viewing vector.

20 Q. So, in Paragraph 192, Tu says that
21 it uses substantially horizontal or substantially
22 vertical to indicate that physical perfection is

1 unnecessary.

2 And you quoted that in your
3 declaration in Paragraph 57.

4 But Tu's Paragraph 67 doesn't say
5 anything about the threshold being substantially
6 vertical, does it?

7 A. No. I think that was your previous
8 question.

9 It doesn't use the word
10 "substantially vertical" or "substantially
11 horizontal."

12 But, it does talk about a range, the
13 range of motions that are associated with the
14 range of tilt -- of a lift, a range -- what is
15 the term here? One moment. The -- I just want
16 to try to use the same terminology if possible.

17 Raise gesture, not lift gesture.

18 So, there is a range of angles, if
19 you will, or a range of tilts associated with a
20 range of raised gestures.

21 And 67 is talking about that.

22 But, I think you asked twice, are

1 the words "substantially vertical" or
2 "substantially horizontal" in Paragraph 67, and
3 the answer to that would be no.

4 Q. Can we turn to Paragraph 84 of your
5 fourth declaration.

6 A. Certainly. Okay. I am looking
7 at 84.

8 Q. So, in Paragraph 84 you say, "Apple
9 cites to Paragraph 160 to 163 in Figures 5A1 to
10 5A4."

11 And on the next page, Page 47 you
12 have Figures 5A1 to 5A4 in your declaration.

13 MS. LEUNG: Can we turn to Apple
14 2007 or Exhibit 2007, Paragraph 162, that you
15 have reproduced here in your declaration.

16 (Whereupon, previously marked
17 Exhibit 2007,
18 first referral.)

19 THE WITNESS: Is this the Motion to
20 Amend from Apple, is that what you are --

21 BY MS. LEUNG:

22 Q. This is the patent application that

1 issued as the '352 patent.

2 A. Oh, okay.

3 Q. So, it is 2007?

4 A. Well, the digital copy that I have
5 in front of me is the '352 patent itself.

6 So, the '352 patent itself that
7 issued in August 31st, 2021.

8 Q. Okay. Do you have access to
9 Exhibit 2007?

10 A. I may. Do you want -- you can put
11 it in the link or I can, I can look for it.

12 Q. Yes, I think it should be already in
13 the download link. If you go to the download
14 link and see if you can find it there.

15 A. Okay. I'm going there now.

16 And the exhibit number again,
17 please?

18 Q. 2007. 2-0-0-7.

19 A. I see all -- oh, okay. Here we go.
20 2005, 2007. All right. I'm looking at
21 Exhibit 2007.

22 Does this end in 971 dot PDF, as the

1 file name of it?

2 Q. Let me look.

3 A. I'm sure it is the right one. It
4 says Apple-2007 US16915971 dot PDF.

5 Q. Yeah, that should be the right one.

6 A. All right. And which page would you
7 like me to look at?

8 Q. Paragraph 162. And that is Page 51
9 to 52 of the PDF document.

10 A. It is interesting. This doesn't
11 have any figures on those -- unless you are just
12 having me look at text.

13 Q. Right. So, I want you to look at
14 the text.

15 A. Okay.

16 Q. The Paragraph 162.

17 A. Okay. I have 162 on my screen.

18 Q. So, on Page 52 -- if you go to
19 Page 52. It says Paragraph 162 spans Pages 51
20 and 52. So, let's go to Page 52.

21 A. All right.

22 Q. And looking at the figures in your

1 declaration on Page 47 that you have there.
2 Paragraph 162, about six sentences down on
3 Page 52 it says, "In Figure 5A1, the device is in
4 a off screen [sic] state while it is held flat in
5 a user's hand 502, such that the device display
6 is substantially horizontal."

7 A. I see that.

8 Q. So, 5A1 represents when the device
9 is substantially horizontal; is that right?

10 A. That is what they are describing is
11 Figure 5A1, yes.

12 Q. And a POSITA would know how to hold
13 the device in their hand so that it looks like
14 Figure 5A1?

15 A. I would say so, yes.

16 Q. And then the very last sentence of
17 that paragraph, Paragraph 162, it says, "In
18 Figure 5A4, the display 112 is substantially
19 vertical."

20 And looking at Figure 5A4, in your
21 declaration, that you have there, that is what
22 Paragraph 162 refers to as substantially

1 vertical; is that right?

2 A. Yes. The issue, though, is it
3 transitions to a display on state before it is
4 substantially vertical.

5 I mean, that is my, my commentary in
6 these sections of the, of my declaration, is that
7 this threshold to turn it from display off to
8 display on is not associated with substantially
9 vertical.

10 It is -- we see in 5A3 that the
11 display is on before it is being described as
12 substantially vertical.

13 Q. So, you would agree that Figure 5A4
14 is described as substantially vertical, right?

15 A. For 5A4.

16 But it doesn't map the substitute
17 claim -- it doesn't map to the substitute claims
18 where you are turning on the display when it is
19 substantially vertical.

20 So, yes, yes, I agree with
21 substantially vertical, but the display is on.

22 Also, it is on in 5A3 before it is

1 substantially vertical.

2 That is my criticism here.

3 Q. Okay. So that wasn't really my
4 question.

5 But my question was just whether 5A4
6 is substantially vertical and you answered that
7 yes.

8 So, would a POSITA know how to hold
9 a device so that it looks like what is depicted
10 in Figure 5A4?

11 A. I would think so, yes. I agree with
12 that.

13 MS. LEUNG: We are at 55 minutes.

14 Did you need a break, Dr. Rosenberg,
15 before we continue?

16 THE WITNESS: Either way. I'm happy
17 to take five or I'm happy to continue on. I
18 am comfortable.

19 MS. LEUNG: Okay. I guess we can
20 just continue on, but let me know if you need
21 a break at any time?

22 THE WITNESS: I certainly will.

1 BY MS. LEUNG:

2 Q. Okay. So, let's look at
3 Paragraph 64 of your fourth declaration which is
4 Exhibit 1064.

5 And let me know when you are there.

6 A. Paragraph 64. I see that.

7 Q. Okay. And in Paragraph 64, you
8 discuss Figure 6A of Dascola. And you also have
9 a screenshot, or you have reproduced Figure 6A of
10 Dascola here in your declaration.

11 A. That's correct.

12 Q. And, you say that the screen shown
13 in Figure 6A is the wake screen. Right?

14 A. Yes, I do.

15 Q. And this wake screen displays a time
16 on it, the time 3:48; is that right?

17 A. I -- yes, it is displaying a time on
18 it, 3:48.

19 Q. And then on Page 35 of your
20 declaration, you have Figure 6B of Dascola shown
21 here.

22 Do you see that?

1 A. I do, yes.

2 Q. So, looking at Figure 6A and looking
3 at Figure 6B, has the time 3:48, has that changed
4 in its position on the wake screen?

5 A. No, it has not.

6 Q. So, that time there is, I guess,
7 fixed in its position, right? It hasn't moved at
8 all?

9 A. The time hasn't moved. But, the
10 bottom edge of the, of the lock screen/wake
11 screen has been, is sliding north as one's finger
12 is sliding north, this vector 604 that is in 6A.

13 So, you are sliding the bottom edge
14 upwards to reveal what is below, which is a
15 control panel screen.

16 And in much the same way that a
17 retractible shade, you would slide the bottom
18 edge up to reveal what is behind.

19 Q. And does Dascola describe anywhere
20 that that is what it is doing?

21 A. One moment.

22 Q. In Paragraph 400 of Dascola, which

1 is on Page 36, it says, "In some embodiments a
2 control user interface 608 is gradually
3 revealed."

4 So, it is, it is like opening a
5 curtain and revealing what is behind it. So, it
6 is showing that the control user interface is
7 behind and it is gradually revealed. The
8 gradually revealed is disclosing an animation
9 that is happening, as the contact moves along the
10 path indicated by arrow 604.

11 So, the user sliding their finger
12 from the bottom to the top. And that the bottom
13 edge of the box screen/wake screen is also
14 sliding up with the finger. And it is gradually
15 revealing what is behind it, which is the control
16 user interface 608.

17 So, yes, Dascola is describing it.

18 THE WITNESS: I think you are on
19 mute again, Kim.

20 MS. LEUNG: Sorry. Thank you.

21 THE WITNESS: No problem.

22 MS. LEUNG: There is a lot going on

1 around me, so I want to make sure that it is
2 quiet when you speak.

3 BY MS. LEUNG:

4 Q. So, does Paragraph 400 of Dascola
5 actually say that the control user interface is
6 under, under the wake screen?

7 A. I think that it is disclosed by the
8 word "revealed." You don't move something to
9 reveal something that is in front. Like, if I
10 slide something out of the way, something in
11 front of it is not revealed. Only something
12 behind it is revealed.

13 So, the use of the word "revealed"
14 discloses that that control panel screen is
15 behind.

16 And, so, I think that, that is my
17 answer there. But I have also pointed to
18 Le Grand, too, that also explicitly discloses
19 sliding an upper screen to -- an upper lock
20 screen, or I think they call it a protection
21 layer to reveal what is below.

22 Q. So, you are just interpreting the

1 term "revealed" to mean that the control user
2 interface is behind or covered by the wake
3 screen?

4 A. Yes, as I described it, I can't
5 imagine, I don't -- a POSITA wouldn't understand
6 sliding something away to reveal something that
7 is in front. That is just what makes sense,
8 something that is in front would already be
9 visible.

10 But here in these, in these figures,
11 and they're Figure 6A and specifically 6B, the
12 sliding motion is depicted in 6A, but in 6B that
13 is described as the control user interface is
14 gradually revealed as the contact moves along the
15 path.

16 So, I think by use of the language
17 in this application that we are looking at, that
18 later issued as the '352 patent, it tells a
19 POSITA that the wake screen was on top and that
20 the control panel interface was behind, because
21 they are talking about it being -- the control
22 panel interface being gradually revealed.

1 And one can also look to Le Grand
2 to, for, you know, a different disclosure that is
3 just as specific, if not more.

4 Q. Let's say you have a television
5 inside a box in front of a wall.

6 And you, that television, the box,
7 the television, the television --

8 A. Can you -- you cut out a few times,
9 so I want to -- if you could repeat it so I can
10 hear the whole question, please.

11 Q. Sure. So, let's say you have a
12 television inside a box, say this hand represents
13 the box, the hand in front.

14 And then the hand behind the front
15 hand is the television. And you have the
16 television slowly move up out of the box.

17 Would that be revealed -- would the
18 television be revealed when it slowly moves up
19 out of the box?

20 MR. CANNON: Objection, form.

21 THE WITNESS: So, in your
22 hypothetical you are saying maybe the box

1 like has a slit on the top or something like
2 that and the television can rise up through
3 the slit in the box, is that --

4 Q. Right.

5 A. Is that how you describe what you
6 are describing?

7 I guess, in your hypothetical the
8 television would be revealed.

9 But the way that the user interface
10 works is that the, when designing user interfaces
11 one of the principal tenets is the match between
12 the system and the real world.

13 It is one of Nielsen's ten usability
14 heuristics. It is almost like the ten
15 commandments of the user interface design.

16 So, it is a match between how the
17 system works or that UI works and what people are
18 familiar with in the real world.

19 So, you are sliding a vector. You
20 have a swipe gesture on the screen and you are
21 sliding that to the north.

22 So, it would be impossible -- in

1 your situation, the front of your box in your
2 hypothetical is a solid wood or metal box.

3 And so, you are not -- you have sort
4 of taken out this swipe gesture from your
5 hypothetical and you just say that the TV just
6 sort of rises on its own through that slot and
7 then it is revealed.

8 But, in this situation, it is, it is
9 different. It is, the user is using direct
10 manipulation. And they want to, they want to
11 have the system -- the system would be designed
12 to map to the real world, so people can use their
13 experiences in the real world and help in
14 navigating these user interfaces.

15 So, your example didn't have this
16 swipe gesture. And when you are swiping, you are
17 swiping and you are interacting with what you can
18 touch, what is in front.

19 If I have a stack of four papers and
20 I slide the top paper, there is no way for me to
21 put my hand on the stack of papers and slide
22 papers two, three, or four that are below.

1 So, so, by use of the word
2 "revealed" in Dascola, by the disclosures in
3 Le Grand that we haven't yet talked about, by the
4 understanding in the disclosure that there is a
5 swipe gesture, and that necessarily, at least in
6 the real world, you are interacting with what
7 your finger is touching, it all discloses that
8 that -- that there is a sliding of the wake
9 screen, specifically the bottom edge of the wake
10 screen, in order to reveal, which is the word
11 that Dascola uses, the underlying control user
12 interface.

13 Q. Can Dascola use the word "reveal" to
14 also just mean that the user interface was
15 previously on screen, but then you drag it up to
16 have it come on screen without affecting the wake
17 screen at all, so the, so the control user
18 interface is actually covering the wake screen
19 when it is dragged up to be revealed?

20 A. I just -- I really don't think it
21 would be interpreted that way for use of how
22 revealed is normally used.

1 Like I say, you open a curtain to
2 reveal what is behind it. You, you open a box.
3 I'm not thinking of your specific TV magically
4 sliding out of a box, but you open a box to
5 reveal what is inside.

6 The box is closer to the eye. What
7 is inside is further to the eye.

8 You have opened the box to reveal it
9 or you have opened the curtain to reveal what is
10 behind the curtain, or you have opened the shade
11 to reveal the window and the scene that is beyond
12 the window.

13 And so, that in combination of, with
14 direct manipulation and the sliding gesture, the
15 mental model should map to the real world which
16 is, like I said the system maps to the real
17 world.

18 So, when you put your finger on the
19 display and you start to slide, users would
20 understand you are not reaching through something
21 to interact with something that is behind.

22 Like, what is in front is the lock

1 screen. We know that from 6A.

2 And, the slide gesture happens when
3 that lock screen is in front. And you are
4 suggesting that, well, couldn't it be equally the
5 case or isn't it more likely the case that as
6 they are touching that lock screen and sliding
7 up, they are actually going through that lock
8 screen and moving what is behind it.

9 It is, it is obvious there is, there
10 is no control panel screen in 6A.

11 So, what your suggestion is that the
12 user would understand they are reaching through
13 that lock screen and they are actually
14 interacting and doing direct manipulation with
15 the screen behind.

16 So, that doesn't map to the real
17 world. So, for all of those reasons, I believe
18 that Dascola is disclosing sliding the wake
19 screen in order to reveal the underlying control
20 user interface that is described in Figure 400 --
21 I'm sorry, Paragraph 400 and Figure 6A and 6B.

22 Q. In Paragraph 400, it says an

1 affordance 603.

2 Do you see what I am referring to
3 there?

4 A. I am looking at Paragraph 400.

5 Q. Towards the middle of the paragraph,
6 it says an affordance?

7 A. Oh, yes, yes. I am familiar with
8 affordances. Go ahead with your question.

9 Q. Okay. So, it says, "An affordance
10 603 is displayed at or near the edge of the
11 display 100 to provide a cue indicating that
12 input received at or near the edge of the display
13 100 will reveal a control user interface 608."

14 A. Yes.

15 Q. So, would that be like an indication
16 of where you would touch to pull it out of the
17 box -- pull it out from where it is hidden from
18 view?

19 A. That essentially becomes a graphical
20 indication of the handle, if you will, to slide
21 the wake screen. Much like the bottom of a
22 roll-up window shade might have a handle or just

1 a thicker edge that you can grab onto when
2 rolling that shade up to the north.

3 The affordance is not on the control
4 panel screen. The affordance is on the wake
5 screen itself.

6 So, you see that, I'm sure. The
7 affordance is not -- in your example or in your
8 interpretation, potential interpretation, you are
9 implying that that affordance is on the control
10 panel screen, so you are grabbing that handle,
11 which is the affordance, which is attached to the
12 control panel and you are actually moving it.

13 But that is not the case. The
14 affordance is on, if you look at 6A, we see the
15 affordance, which is 603, is on the wake screen.
16 The handle is on the wake screen.

17 Q. But the handle could equally be a
18 handle for the control panel user interface to
19 pull it up above the wake screen, couldn't it?

20 A. No. That is not my interpretation.
21 I mean, think of the physical geometry.

22 So, if you have something covering

1 something else, are you saying that there is a
2 handle that is poking through?

3 It is actually attached to -- you
4 are suggesting it is actually attached to the
5 layer below which is the control panel user
6 interface.

7 And, maybe there is a slightly
8 bigger slot that that handle is poking through.

9 Is that what you are suggesting?

10 The handle is -- I say handle. It
11 says affordance, so I'm using that
12 interchangeably.

13 The affordance is taking the form of
14 a handle and it is drawn on the, on the wake
15 screen.

16 And when you slide it north, you are
17 revealing -- and those are Dascola's words, not
18 mine -- you are revealing the control user
19 interface which happens to be below it.

20 I think your question implied that
21 that handle is somehow attached to what is below
22 it which would, I think that would -- it just

1 doesn't comport to, to I think a POSITA's
2 understanding of how this system would work.

3 Too many leaps of faith that would
4 have to happen to, to make that, to -- for it to
5 be understood in that way.

6 Q. So, would you understand the word
7 "reveal" to mean to bring something into view
8 that is hidden?

9 A. I think that is a very common
10 definition of "to reveal," yes.

11 Q. Could reveal also mean to bring
12 something into view that is not in view?

13 A. Well, when you say hidden, in your
14 first statement it was to bring something in view
15 that was hidden. And the second one is to bring
16 something into view that was not in view.

17 I guess I would want to ask you, how
18 are you describing not in view versus hidden?

19 I was thinking of those very
20 similarly. If it is not in view, it is hidden
21 from view.

22 Q. So, let's say, looking at your

1 computer screen right now, and you drag one of
2 your windows so that it is, you know, mostly out
3 of view except for maybe a little bit of the top,
4 the top bar where you can still drag it back into
5 view.

6 So, let's say you drag one of your
7 PDF documents all of the way off the screen
8 except for a tiny sliver off the top.

9 Would that be out of -- that would
10 be out of view, right? Or, you know, except for
11 this little handle, this little affordance here.
12 That is -- --

13 A. You are sliding the top layer, which
14 is the window that has your PDF browser. So, you
15 are always interacting with that top layer which
16 is what I describe.

17 And one can slide it all over the
18 screen. And so now I'm moving my PDF viewer all
19 of the way down so that just the top 2 or
20 3 percent of that window is displayed.

21 And now the majority, let's call it
22 97 percent of my PDF viewer, is off, off my

1 display down below.

2 And, as I slide the -- as I grab
3 hold of the very top bar that was visible, and I
4 slide it north, I am revealing what was hidden
5 before, what was hidden behind the bezel or off
6 the display.

7 That, if I have two windows and I
8 slide my PDF window over the -- I have a Chrome
9 browser, where I am looking at this document you
10 pointed me to, the Exhibit 2007. And as I slide
11 my PDF viewer on the top, because I am
12 interacting with the top layer, I am revealing
13 more of my Chrome browser that is beneath it.

14 Q. Okay. So before you said you also
15 pointed to Le Grand in addition to Dascola for
16 the, revealing the underlying user interface.

17 A. Oh, I'm sorry. You know I misspoke
18 there. It is Brinda, not Le Grand.

19 That is, that is in Paragraph 67,
20 Figure 3 of Brinda.

21 I was misspeaking when I said
22 Le Grand a few times earlier. I'm sorry.

1 Q. Okay. So, Paragraph 67.

2 A. Uh-huh.

3 Q. So, pointing to Brinda then.

4 A. Yes.

5 Q. On Page 37 of your declaration, you
6 have Figure 3 of Brinda here.

7 A. I do.

8 Q. So, in Figure 3 here, you have
9 quoted from Brinda, "Figure 3A illustrates a
10 screen image of the electronic device while the
11 touch screen is in the screen-locked state,
12 wherein a protection layer 310 covers an original
13 layer 320."

14 And then you say that, "Figure 3 of
15 Brinda illustrates that in response to a
16 longitudinal (top to bottom) input, sliding the
17 wake screen in the longitudinal direction and
18 displaying an underlying user interface (original
19 layer 320) that was covered by the wake screen."

20 So, in Figure 3 of Brinda, the
21 protection layer 310 slides down to the lower
22 edge to, I guess, uncover the original layer 320.

1 Is that right?

2 A. Yes. The protection layer is slid
3 away. In this example it is, it is slid down to
4 reveal the layer below it which looks like a home
5 screen as seen in Figure 3E.

6 There is very specific disclosures
7 in Brinda that show that the protection layer is
8 on top and that the, the screen below the
9 original layer 320 is below. And I can point you
10 to those if you would like.

11 But to the extent that you are
12 talking about in Brinda this is sliding from the
13 top to the bottom versus sliding from the bottom
14 to the top, those are very obvious substitutions,
15 if you will.

16 I mean, there is -- there are very
17 few alternatives that a POSITA -- you know, they
18 are just design choices.

19 So, to the extent that it would not
20 be obvious that you could equally well slide that
21 protection layer off the screen in Brinda, going
22 from the bottom to the top versus the top to the

1 bottom, it is just -- there are very few design
2 choices, and they are all essentially equivalent.

3 MS. LEUNG: Okay. I have no further
4 questions.

5 MR. CANNON: Thank you.

6 I have no questions, Dr. Rosenberg.
7 Thank you for your time today.

8 MS. LEUNG: Yes, thank you,
9 Dr. Rosenberg.

10 THE WITNESS: Thank you both. Thank
11 you everyone.

12 (Whereupon, signature not having been waived,
13 the deposition suspended at 10:24 a.m.)

14 * * *

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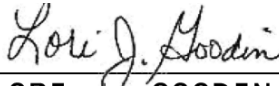
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