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

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APPLE INC.,

Petitioner,

v. IPR2024-01083

SMITH INTERFACE TECHNOLOGIES, LLC, Patent No. 10,642,413

Patent Owner.

_____

VIDEOTAPED DEPOSITION OF CRAIG ROSENBERG, PH.D.

July 10, 2025
8:00 a.m. Pacific Time

Reported by: Lori J. Goodin, RPR, CRR, RSA,
California CSR #13959

DIGITAL EVIDENCE GROUP
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VIDEOTAPED REMOTE DEPOSITION of

CRAIG ROSENBERG, PH.D.,

in the above-titled action, held on Thursday, July 10, 2025, commencing at approximately 8:00 a.m. before Lori J. Goodin, RPR, CRR, RSA, California CSR #13959, Registered Professional Reporter, Certified Realtime Reporter, Realtime Systems Administrator, and Certified Shorthand Reporter, and Notary Public of the State of Florida, State of California, State of Maryland, District of Columbia, and State of Delaware.

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CRAIG ROSENBERG, PH.D.

Apple Inc. v. Smith Interface Technologies LLC

Thursday, July 10, 2025

Lori J. Goodin, RPR, CRR, RSA,

California CSR #13959

PREVIOUSLY MARKED EXHIBITS

PRIOR MARKED EXHIBITS	FIRST REFERRAL
1004, Ahn reference	28

(Previously marked exhibits retained by counsel.)

THURSDAY, JULY 10, 2025, 8:00 a.m.

PROCEEDINGS

* * *

Whereupon,

CRAIG ROSENBERG, PH.D.,

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

THE REPORTER: Unless an objection is heard at this time, all parties to this deposition are appearing remotely and have agreed to the witness being sworn in remotely.

* * *

EXAMINATION

BY MR. HOLT:

Q. Hello, sir.

A. Good morning.

Q. How are you doing today?

A. I am doing well, too. How are you?

Q. Good. Can you state your full name

for the record, please.

A. Craig Stewart Rosenberg.

Q. Okay. And if I call you Dr. Rosenberg, that is okay?

A. Yes, it is.

Q. Awesome.

Have you been deposed before, Dr. Rosenberg?

A. Yes, I have.

Q. About how many times would you say?

A. Approximately 60 times.

Q. Okay. I think one of those cases may have been involving the parties, Apple and Neonode.

Do you remember that?

A. I do recall that, yes.

Q. I was in that deposition. So, I have sat with you in deposition before.

I'm sure you are familiar with the general outlines of the rules of the deposition, but I would like to run through a couple, if that is okay with you?

A. Of course.

Q. Just so that we have a clear record and to help the court reporter out, can we agree that you will let me finish asking a question before you answer, and I will try to do the same, let you finish answering before I ask a question?

A. Yes.

Q. All right. Do you have any notes or anything open on a computer around you?

A. I have a printout of an unmarked-up printout of my declaration. And I have a PDF browser that has a digital copy of my declaration.

And the '413 patent and the three primary references on Chaudri and Hinckley.

And, Dr. Trabean's declaration. All unmarked-up.

Q. Okay.

A. And I have the Zoom browser, the Zoom application open.

Q. Okay. And all of those digital copies, you said are unmarked. They don't have

anything additional in them but what was filed with the Board; is that correct?

A. That's correct, yes.

Q. Okay, great. Do you agree that during the, at least the initial cross-examination portion, if you will, of the deposition, that you will not talk to anybody including counsel for patent owner, either through chat on your computer or otherwise, text message or anything like that?

A. I agree.

Q. If you happen to have anybody come in the room, just let me know. We can always take a break if necessary.

I know on these remote things it can be kind of difficult to predict what is going to happen. But, just let us know and we can take a break if necessary.

Does that make sense?

A. It sure does, yes.

Q. And on the topic of breaks, I will probably try to take one at about every hour.

But if you need a break, no problem at all. Just let us know.

But all I would ask is that if there is a question pending that you give your answer before we take the break. Is that okay?

A. Of course.

Q. Great. What did you do in preparation for the deposition today?

A. I reviewed the '413 patent. I reviewed the Ahn reference, the Chaudri reference, and the Hinckley reference.

I met with Chad Wallis on probably four different times for part, you know, not full days each time.

And, basically just reviewed my declaration, of course.

Q. Were there any other documents you could think of that you reviewed in preparation?

A. I reviewed -- did I mention Dr. Trabean's declaration? If I didn't, I reviewed sections of that.

Q. Okay.

A. I reviewed some of the exhibits that are in my declaration around the use of radial menus.

Q. About how long would you say you met with Mr. Wallis for, in preparation, I guess I should say, for the deposition?

A. It was over probably four different days. As you know the deposition was scheduled and then pushed off.

So, probably two days before the first scheduling and two or three days before the second one. Maybe 15 hours would be my guess. 10 to 15 hours. Something like that.

Q. Okay. Thank you. And I would say I appreciate the rescheduling. There was a bit of a snafu on our end. So, thank you very much for bearing with us.

A. Yeah, no worries at all.

Q. Okay. So, I guess to step back to one of the rules generally quickly. If I am asking questions along the way and I -- and you give an answer, can I assume that you have

understood the question?

A. Yes.

Q. And you will ask for clarification if you are unsure about the nature of the question?

A. I will.

Q. Okay. Great. All right. And is there any reason today that you wouldn't be able to give full and truthful answers, any conditions or medications or anything like that?

A. No.

Q. Okay, great. All right.

So, before we kind of dive into some of the specifics of the actual documents, I wanted to step back and ask kind of generally about user interface design and specifically touchscreen user interface design.

Could you tell me what are some of, or the ones you can think of, input variables or dimensions that make up a gesture for a touchscreen?

A. Are you talking about the various

kinds of attributes of the touch itself that could be recognized by software?

Is that kind of the nature of your question?

Q. Yes. I think maybe the patent refers to this as a face space, if I'm not mistaken.

A. Yes, that's right.

Q. But I believe it is the dimensions that represent the gesture.

A. Sure. Sure. So, some of the various dimensions that can be input, you know, varied by the user, input by the user, and recognized by the hardware and software combination that represents the touchscreen, would be where the finger or stylus is touching on the screen.

If it is a multi-touch gesture, there may be more than one at a time. The pressure, some systems can recognize pressure as well.

Oftentimes when you have pressure,

it can -- you can have more than just an XY, but it will create a broader radius, if you will.

The duration of the touch, the direction of movement of that touch, potentially entire path that that finger or stylus is taking as it makes contact with the screen.

I think I mentioned duration. So, in addition to the path would be the speed. So, you could compute the speed, the distance, divided by the time. You could compute acceleration, you know, the derivative of speed.

Those are some that come to mind. Let's see I mentioned multi-touch. I mentioned pressure. I mentioned time, such as duration that a finger or stylus is down.

I mentioned speed, acceleration. Whether -- certainly the beginning location and the end location. Even you could set off time, if it is a multi-part gesture that involves finger stylus down and then up and then down again.

You can start and stop various

timers to see how long the fingers were on the screen -- finger or fingers were on the screen versus off the screen.

The, as you know, there is the concept of bezels, too. So, potentially a sensor that can detect a touch on the bezel, not on the screen itself. That could be part of the face base that is representing the entirety of the gesture.

There is some systems that can detect proximity, really, so you don't actually have to be touching the screen but hovering near the screen.

Those are some variables that come to mind at the moment.

Q. Okay. Would you say all of the variables you just mentioned and the manner in which you talked about them, were known as of the critical date for this patent?

A. Well, I didn't, I didn't specifically research. There is many variables, as you know, I just mentioned.

And I didn't dig into the invention date, if you will, for all of those.

But, it is my understanding that the '413 patent isn't claiming the invention of one or more of those variables or ways of interacting with a touchscreen.

It is the specific combination and how input is received from that touchscreen and importantly the resultant output from a graphical point of view, as far as what is being displayed on that touchscreen that seems to be the focus of the invention of the '413 patent.

Q. Okay. And I think I mentioned the patent in my question, and you mentioned the '413 patent in your response.

I just want to clarify for the record we are talking about U.S. Patent Number 10,4 -- or excuse me, 642,413; is that correct?

A. Yes. 10,642,413.

Q. Okay. And if we refer to that as the '413 patent, that is okay, as you did in your

last response?

A. Yes, it is.

Q. Okay, great. I know you've got copies opened, so I will probably speak to those, except I would like when we start to talk a bit about your declaration to go ahead and provide the copy that was filed, just so that you can verify that it was the declaration that you signed.

But, stepping back to the questions we were talking about before, you discussed, I don't know, a half a dozen, maybe more dimensions, I think, of these gestures.

If any of those dimensions change, is it a different gesture?

MR. WALLIS: Objection, scope.

THE WITNESS: I think that that would -- I mean you are asking sort of a high level general question, perhaps devoid of the issues in this case.

Just in general if a software engineer were to have a hardware system that

could detect everything that I mentioned previously, it would be possible for them to build a gesture recognition module in software that could be sensitive to changes.

Like I said, if the hardware supported all of what I mentioned, to the degree and specificity of what I mentioned, a gesture recognition module could be built that would detect the changes in pressure, the changes in where the pen-down point and the pen-up point, the path, you know, Path A could be detected different as Path B.

So, yes, it is possible. But, it is also possible that that software detection module, if you will, that software recognition module could purposely or just through lack of programming be insensitive to a difference of one gesture versus another.

So, it really depends on the specific implementation.

BY MR. HOLT:

Q. Okay. That makes sense. So, let's

look at one of those dimensions you talked about.

I think you mentioned a touch-down point on the screen. So, that would be where a user, for instance, either touches the screen with their finger or maybe a stylus and where that location is. That is one of these dimensions potentially.

Is that right?

A. That's right.

Q. Okay. And, so if I touched down at one edge of my display, that would be potentially one starting position for a gesture. Is that fair to say?

A. Yes. And it could be defined in more specificity than that -- an edge, if you are talking about the left edge, let's say, it could be that that is, let's say X equals zero, if it is all of the way to the left.

Q. Uh-huh.

A. But it could have multiple different Y points.

If you are just saying on the left

edge of the display, there is many, many pixels that would satisfy the left edge of the display.

Or you could be more specific -- when I say you could be, I mean a software engineer that is implementing such a system could say it needs to be at row -- Column 0, left edge of the display, between pixels 40 and 90, something like that.

So -- but, hopefully that answers your question.

Q. I believe it does. And one thing I would ask with respect to these questions, you were talking about a software engineer.

I guess going forward, if we can maybe speak from the perspective of the person of ordinary skill in the art or POSITA in this case; is that fair?

A. Yes, it is. And I know that is appropriate.

But in my mind a POSITA would be someone that is able to design and implement such a system.

Q. Uh-huh.

A. So, that is why I mention software engineer.

But, I was answering from the perspective of a POSITA, yes.

Q. Okay. Perfect. I just wanted to clarify that for the record and make sure that we were talking about the same type of person, I suppose, who might be looking at these types of systems.

A. Uh-huh.

Q. Okay. So, I think what I heard you say is that my touch-down position on a screen might have, for example, at least two coordinates, X and Y, we will say, which might define the plane of the touch surface.

Is that fair?

MR. WALLIS: Objection, form.

THE WITNESS: Typically a flat touchscreen has a coordinate system.

BY MR. HOLT:

Q. Uh-huh.

A. Typically the upper left is the origin. It doesn't have to be.

Q. Uh-huh.

A. But, typically the upper left is 00. And X goes positive to the right, and Y goes positive down.

So, you know, if it was a 1,000 high -- 1,000 high pixels, and 2,000 Y pixel display, the upper left pixel would be 00. The lower right pixel would be a 2,000, 1,000.

So, that is a typical coordinate system for computer graphics on a 2D display.

Q. Okay, great. You have been talking about pixels with respect to both the display and the input.

Was it common at the time of the patent that those would be one-to-one? That is to say the fidelity at which I detected an input would be approximately the fidelity of the display, the number of pixels of the display?

MR. WALLIS: Objection, form.

THE WITNESS: I -- counsel, I will

give you a moment to object if you want.

I can't speak to how frequently it is one-to-one versus it is different.

It certainly doesn't have to be. The grid of detecting a touch does not have to map to the pixel display. It could be finer grained. There would be no reason it would need to be finer grained, most likely.

But, it could be coarser grained, too. And I just really haven't researched if, if it was very typical to be one-to-one, or if it was more common that the display resolution was a little bit higher than the touch resolution, so --

BY MR. HOLT:

Q. Okay. So, in some systems it may be possible for the touch coordinate system to be somewhat different than the display coordinate system.

Is that fair to say?

A. It is possible that they were different. It is possible they were different,

yes.

I think from a user experience point of view, as long as the touch resolution was high enough for the user to position their finger and position, you know, start the gesture in the gesture to accomplish the task at hand, that would be sufficient.

And that there wouldn't be a requirement to -- that it be a one-to-one match, as long as it is supported the various kinds of gesture recognitions that the designers envisioned and needed for their product.

Q. Okay. That makes sense.

The start position, I think perhaps conceptually, one way to think about it would be that the start position is one coordinate within the coordinate system of inputs we were just talking about.

Is that fair?

MR. WALLIS: Objection, form.

THE WITNESS: Yeah. It would be one position, one XY position. One XY value, if

you will, or pair, within the coordinate system of the screen.

BY MR. HOLT:

Q. Okay. Would it also be possible that a touch might take up multiple positions, a single touch, that is, take up multiple positions at once?

A. Well, I did describe a, the possibility of a system where as the finger goes, you know, applies more pressure, you have more surface area of the pad of your finger that is touching the display.

And depending on the hardware, there may be the possibility for that hardware to report multiple different pixels within the, essentially, the radius of that centroid to be, you know, triggered as being active at that moment.

Q. Okay. Makes sense.

A. If that answers your question.

Q. Yes. Let's assume for the sake of argument that for the next question when a touch

down happens, it is at an X and a Y, I think you called it, a single coordinate position within the coordinate plane of the touchscreen.

Is that -- do you understand that?

A. I do.

Q. Okay. If a user were to touch down at, I'm just going to throw some numbers out there, ten on the X-axis and 12 on the Y-axis.

Is that a different input than if they went to, let's say, 20 on the X-axis and 15 on the Y-axis?

MR. WALLIS: Objection, form.

THE WITNESS: Well, it is a different start position. So, if the gesture recognition system is sensitive and applies some condition or value or meaning to start position, then yes, it would be a different input.

It doesn't have to be, always. If you are, if the gesture recognition is, just cares about the direction of travel, no matter where it starts, and let's say you are

just looking for travel at least 30 pixels in one direction, you know, north, south, east, or west, then it really wouldn't matter where the start position was.

You are just, you are looking for that Delta between the start and end.

But, in other systems, it may value very much, because you are either starting on a target or in your second example maybe you are starting off the target.

So, something might happen if you are starting on the target and maybe nothing will happen if you are starting off the target.

So, so many of -- you know, so much depends on the specifics of the system that is being designed and what is needed.

BY MR. HOLT:

Q. Okay. That is helpful. Thank you. I think you talked about a target.

What might a target be in these systems?

A. Well, I'm thinking of 1800 of Ahn.

Q. Okay.

A. We can, if you want, go to Ahn. I recall it as being Element 1800 which was like a start target to launch a menu.

Q. So, when you say Ahn, just to clarify for the record, we are talking about Exhibit 1004; is that correct?

(Whereupon, previously marked Exhibit 1004, first referral.)

THE WITNESS: I haven't memorized the exhibit number. Yes, it is. Actually, I see it in the title of my digital copy.

BY MR. HOLT:

Q. Okay.

A. 1004.

Q. I believe for what it is worth, if you have the filed copy open at the lower right of the first page, it says Apple 1004.

Do you see that?

A. I do see that, yes.

Q. Excellent. And so you were asking -- I should say, talking about the Figure 18; is that correct?

A. Yes, Figure 18A and B show what I had referred to as the target.

Q. Okay. And what aspect of what is shown in Figure 18 would be this target?

A. The cross hatched area, 1800.

Q. Okay. I believe Ahn refers to that as a graphical shadow, 1800.

A. That's correct.

Q. Okay. So, what would define that graphical shadow as a target for the user interface?

A. Well, it could be defined in a number of different ways. It could be defined logically just in an algorithm. If -- you know, if the Y position of the touch-down point is between A and B, if the X position is between C and D, then you have defined a rectangle, essentially. You have defined a bounding box on the screen.

So, that would be, you know, a programmatic way to define it. And then, graphically, you want to show that graphic shadow so that the user sees something on their display. And that would be defined in the graphics routines that is doing the draw, the draw procedures.

And it would be defined in the same way to, you know, paint pixels in a certain color or a certain pattern on this area of the screen.

Q. Okay. You had talked about defining a rectangle for the target with respect to the touch input; is that correct?

A. It could be a rectangle. It could be an arbitrary shape. This looks like it is a rectangle with rounded corners that is partially clipped by the side of the display.

So, it is not exactly a rectangle. But, it could be a rectangle or it could be an arbitrary shape.

Q. Okay. Who defines the shape of the target?

MR. WALLIS: Objection, form.

THE WITNESS: Well, a POSITA that is implementing a system, the designers, and the programmers. It might be the same person. It might be two different people if they have slightly different skill sets.

The designers of the software would -- the user interface designers would typically, you know, make mock-ups. And if they have the software skills to implement them they would, they would implement it in source code as well.

Otherwise it would be given to the different software engineer that would implement it.

BY MR. HOLT:

Q. Okay. So, to your knowledge does Ahn teach that level of detail of implementation for its user interfaces?

A. Not that I recall. I mean, I think that Ahn is more focused on the user interface design and the interaction design as opposed to

the specifics of how the algorithms would work.

But, a POSITA would know that it doesn't happen by magic, so to speak. You know, you can't go from wire frames to running software without, without implementing them in code and compiling a, an executable.

Q. So, you would say that the process of implementing them with the code was something a POSITA would have known how to do.

Is that fair?

A. Yes. I would say so, yes.

Q. Okay. So, even though Ahn doesn't, for example, talk about defining the target rectangle that we were talking about a little bit earlier, a POSITA reading Ahn would have generally known how to create that as part of the input system; is that fair?

MR. WALLIS: Objection. Form.

THE WITNESS: Well, I would say Ahn does show the design. You say Ahn -- I believe you phrased it Ahn doesn't talk about the design.

Right here I am looking at Figure 18A and B of Ahn, and that shows the design, at least from a graphical point of view.

In Ahn it would be well known how to implement that in software.

So, I guess I'm taking a little bit of exception to your phrase that Ahn doesn't talk about the design of the graphical shadow.

I think that at least the user interface design of the graphical shadow is displayed on 18A and B.

BY MR. HOLT:

Q. Okay. I agree with that, for what it is worth.

A. Okay.

Q. I think I was perhaps talking more specifically about going from what we see in Figure 18 to a working system.

Does that make sense?

A. It does, yes.

Q. So, these figures on their own don't define the operation of a system; is that fair?

MR. WALLIS: Objection, form.

THE WITNESS: Well, I mean Ahn does provide, in the specification itself, descriptions of how the system of Ahn works.

It doesn't define the specifics of the C language or the Java language or whatever software language you would use to implement it, because there is many ways to implement it with many kinds of software languages.

BY MR. HOLT:

Q. Uh-huh.

A. But, it does describe how the system works from a user interaction point of view and user interface point of view.

Q. Okay. That makes sense.

A. Uh-huh.

Q. So, there is some detail that a POSITA would have to bring to the table in order to read on and get to a working system. Is that

fair?

A. I think that a well-defined specification could be given to a dozen different software engineers and you would get back the same, you would get back the same software from all dozen teams.

So, it seems to me that Ahn is a well-designed specification, if you will. It really describes how the system works.

And to the extent that your question implies that there is a lot of uncertainty in Ahn, and that it is under described and different software engineers could build completely different systems, I would -- I don't think I would agree with that.

I think that the way that the system of Ahn is described, it is clear to a POSITA, as far as what is needed, you know, what it is describing the software to do. And then the software engineer is just implementing the specification, if you will, that is the document, Ahn.

Q. Okay. That makes sense. If the designer, one of these software teams you talked about, I think maybe ten software teams would come to the same conclusion, if one of the software teams looked at this, a POSITA looked at Figure 18, would they necessarily always design the graphical shadow 1800 exactly as it is shown in Figure 18?

MR. WALLIS: Objection, form.

THE WITNESS: Well, Figure 18 is part of what I call the spec or the specification.

BY MR. HOLT:

Q. Uh-huh.

A. Oftentimes the, one of the first steps in software -- in the software engineering life cycle is to look at the, whether the requirements of the system, what all of the functions it needs to do to build a detailed specification.

Q. Uh-huh.

A. And then to program it. And these

figures show from a graphical point of view what the graphical shadow should look like.

And the description and the specification of Ahn describes how it works. And also, you know, combined with the other figures, too, and the differences, in terms of the interaction, the differences between other figures in terms of what has to happen, like is that graphical shadow moving or not.

The specification, if you will, and I guess I'm using that word, that word is overloaded, meaning two things, the specification of the patent and also I am describing this, because in your hypothetical, this is a specification for a software engineer or a software engineering team.

They knew how to describe what it would -- you know, how to describe if the graphical shadow needs to move. And I am thinking of, like Figure 6A which --

Q. Okay.

A. -- which shows a graphic moving over

time.

Q. Okay. Turning to Figure 6A really quickly so that I can -- okay.

A. Also Figure 8B would be another example of that.

Q. Okay. So, would a POSITA looking at Ahn, have understood it to teach a set of constraints or goals of the system and sought to implement them as they are taught here.

A. Can you ask that question one more time to make sure that I understood it, please?

Q. Yes. This goes back to I think what you were getting at, I'm not quite sure, with respect to the word "specification" as being loaded.

You talked about the specification being a word for this actual document and its description. Is that correct?

A. Yeah, I think I used the word "overloaded" which is actually a software engineering term.

Q. Okay.

A. Yes. The specification of the patent itself, or you can think of a specification that is given to a software team, that is really, it is the, what -- it is the description of what is needed to be built by that software team.

Q. Okay. Those two things are different from one another; is that correct?

A. Well, in a -- yeah, they are different typically. A patent is to file with the Patent Office and, you know, claim an invention, hopefully get a patent for an invention.

So, that is the purpose of a patent of which the specification is the, you know, the majority of the patent itself.

The purpose of the software specification -- it has nothing to do with patents. And it is to describe a software system so that a software engineering team can build said system.

That said, I kind of equated the two

a little bit by saying this patent, the Ahn patent could be treated as a specification or at least a good part of it.

It doesn't describe potentially everything. Like, is this running on iOS or is it running on android? You know, like some of the basic things aren't described.

But, in terms of what the application, or operating system, or set of applications combined with an operating system needs to do, that is -- it could be used in that way.

Q. You are saying it could be used in that way. And I guess the question I would have is: Would the POSITA have approached Ahn in the way you just described, looking at Ahn as a specification for how precisely the system works?

MR. WALLIS: Objection, form.

THE WITNESS: I think the reason -- the whole reason that we got on to this line of questioning and me characterizing this as a, as a specification is there is a question

that you had of me that seemed to imply that it was under-specified, so to speak.

That the, this Ahn patent left a lot of room for many different kinds of implementations.

And, I think we need to dive into the specifics about what we are talking about, you know, what specifically. But I pushed back on that because I didn't necessarily agree.

I think there are descriptions in Ahn, that describe -- and this goes, it is the same for Chaudri and Hinckley.

BY MR. HOLT:

Q. Uh-huh.

A. That is descriptive in how the system of Ahn, Chaudri and Hinckley work.

And if they were given to a software engineering team, or multiple teams, one would expect those teams to build the system in accordance with the patents themselves.

Q. Okay. You said build them in

accordance with the patents themselves.

A. Uh-huh.

Q. I'm curious if maybe you could expand on that a little bit.

What does it mean to build the system in accordance with the patents themselves?

A. To use the description in the specification of the patents as the guidance as to what is needed, what needs to be designed and programmed and released, deployed, if you will.

Q. Uh-huh, uh-huh.

A. That is what I mean by in accordance with the specification of the patent.

Q. Okay. So, for example, let's take a look back at 18 and maybe the description of Figure 18.

So, I believe this description is in Paragraph 118 of Ahn, and then goes into 119. Can you pull those up?

A. Yes. I am looking at 118 now.

Q. Okay. There is a, I think a second sentence of Paragraph 118 that starts with the

phrase, "For example, referring to."

Do you see that?

A. I do see that sentence.

Q. It says, "For example, referring to Figure 18A, if the user drags in a right direction after touching the screen, a graphical shadow 1800 is displayed in the display 40. And the menu list 1500 shown in Figure 15B can be displayed in the display 40."

Is that an accurate read of that sentence?

A. Yes, it is.

Q. Okay. So, if a POSITA were to read this sentence, how would they implement this sentence?

A. They would implement it where the -- when the finger is dragged in the right direction, then the, afterwards, the menu is displayed.

Q. Okay. You say the finger is dragged in the right direction.

A. Yes.

Q. Is that the only variable of the gesture that is being considered in this?

A. No. You need to, after touching the screen -- so, I mean the drag implies that you first touch and then you swipe and the finger stays down on the screen and moves in the right direction.

Q. Okay.

A. And then the first sentence talks about the start position. So, it needs to be within the boundaries. Earlier in the deposition I talked about that bounding box.

You know, if X was between A and B, and Y was between C and D. So, you got the start position. You got finger down. You have a swipe in a certain direction. All of those things would be the, the triggering -- I don't know the best way to describe it.

What would the gesture recognition would tune into in order to determine whether that left menu would be displayed.

Q. Okay. So, I think you mentioned the

bounding box of X and Y positions as a start position for a gesture.

And you talked about a direction, a user drags a finger on the display from that start position.

Is that right?

A. Yes.

Q. Okay. So, looking at Paragraph 18, looking at Figure 18, a POSITA is looking at these two things and trying to implement the system. Where must the user touch on the screen in order to open the menu?

A. Well, the first sentence says, "Figure 18 illustrates an example of a screen for displaying a graphical display for notifying a start position of a touch and drag operation to a user.

So, in looking at Figure 18, it would be in that cross hatched area.

Q. Okay. So, if a user were to touch down outside of that cross hatched area and drag to the right, would the menu open?

A. I think this is one embodiment that uses a graphical shadow that would imply that it would need to have that -- along with that first sentence of Paragraph 118, that it would need to be in that.

I think there are other embodiments that don't have the graphical shadow, that you could start from a broader range of Y positions.

Q. Okay. So, if a user is implementing the graphical shadow 1800, they are definitely going to limit the start location to within the graphical shadow.

Is that correct?

MR. WALLIS: Objection, form.

THE WITNESS: I'm not sure I would say it so strongly.

It would -- no, I, I don't think it would absolute -- I mean you say definitely.

BY MR. HOLT:

Q. Uh-huh.

A. There could be some flexibility in that the graphical shadow is just showing it is

from this left side of the display that the menu emerges from, so to speak.

Q. Okay.

A. But, yeah.

Q. So in that case, perhaps the graphical shadow isn't necessarily altering the place of touchdown to open a menu as compared to earlier figures.

Is that what you are saying?

A. I think that it doesn't necessarily have to be 100 percent.

But, in this figure, I think that this represents an embodiment that includes a graphical shadow.

Q. Uh-huh.

A. And I don't believe all of them do.

Q. Uh-huh.

A. So, it would seem reasonable that it could be implemented such that the start position needs to be within that cross hatched area.

But, I can also see that, depending on the implementation, that it just becomes an

indication, something called an affordance, if you are familiar with that term.

Q. Uh-huh, yes.

A. It becomes an affordance to let the user know that there is something hidden on the left-hand side that could come out. And maybe the designers didn't want to be so restrictive as to limit the Y start position.

So, I guess I'm pushing back on the term "definitely."

Q. Uh-huh.

A. Ahn seems to have other embodiments that don't use a graphical shadow, which would imply that Ahn is contemplating both, both the very specific start position or a more generalized start position that just needs to be all on the left-hand side of the display versus left-hand side bracketed between a certain Y value and Y prime value.

Q. Okay. But, I believe you were suggesting earlier, and please correct me if I'm wrong, that with respect to Figure 18A and the

use of the graphical shadow, it could be that the designer limits the touchdown position to just where the graphical shadow is displayed or could implement it so that the user can touch down anywhere near the edge where the graphical shadow is displayed.

Is that what I heard you discuss?

A. It is what you heard me discuss. Both are possible implementations, yes.

Q. Okay. In Figure 18 of Ahn and in its description here in Paragraph 118, does Ahn talk about those two options, specifically?

A. One moment, I just clicked away from it onto the figure.

If I go back to 118, in this paragraph -- this Paragraph 118 specifically concerns the graphical shadow.

Q. Uh-huh.

A. But when I say other embodiments, there is descriptions of launching menus earlier in the patent without, without discussing a graphical shadow.

That is why I discuss, you know, Ahn seems to contemplate both possibilities.

Q. Yes, I think that makes sense.

I guess the question I have though is, if I'm understanding you correctly, a POSITA who is reading Ahn would look at the disclosure of Figure 18 and the Figure 18 itself and its description, and they could implement it either such that the user has to have the start position within where the graphical shadow is displayed, or they could have it that the user can touch down anywhere along the edge as it is described earlier in Ahn.

Is that correct?

A. It is possible. I mean a software engineer can implement whatever they choose.

If I were implementing the system myself, in a different, and there is multiple embodiments in my software, so, you know, in some places there is no graphical shadow.

I personally may be inclined to say anywhere along the, you know, where X equals --

I'm sorry, yeah, X equals zero, the column is X. And Y could be from zero to Y MAX.

Q. Uh-huh, uh-huh.

A. But on this section of the interface where it is specified that there is a graphical shadow, I personally might -- I can see advantages both ways, but I might have the system do nothing, if you are above or below the graphical shadow.

Q. Okay. So would you say this is maybe a design choice of the POSITA when they are looking at Figure 18 and determining how to implement it?

MR. WALLIS: Objection, form.

THE WITNESS: So, first off, we are just talking about start position, right?

BY MR. HOLT:

Q. Right.

A. We are not talking about whether the graphic moves. Because that is, that is different. I think that is well specified and that wouldn't be a design choice, because I think

the specification of Ahn is very clear when a graphic moves and when it doesn't move.

Q. Uh-huh.

A. As I pointed out earlier. So, I will just read aloud the first sentence of 118. "Figure 18 illustrates an example of a screen for displaying a graphical display for notifying a start position of a touch and drag operation to a user."

I would say given that first sentence and the very distinct cross hatch area of Figure 18A and B --

Q. Uh-huh.

A. -- and it says it is specifying -- doesn't use the word "specifying."

For displaying a graphical display, for notifying a start position of a touch and drag, I believe that a POSITA would implement this, that it would need to be in that cross hatched area.

Because otherwise you are not in the start position, so why should the gesture

recognizer recognize that gesture if you are off of it.

Like, if you were above or below, you are off of it.

Q. Uh-huh.

A. Then all of a sudden, well, if you are to the right of it, let's say you are in the middle of the screen and 60 percent across, you know, toward the right edge, should that be a start position for bringing out the left menu?

Q. Uh-huh.

A. Let's say you are 90 percent and you are trying to bring up the left menu and you are all of the way close to the right.

It just wouldn't, I think, make as much sense from a user experience point of view.

So, especially given there are other situations without a graphical shadow. If there is a graphical shadow, I believe a POSITA would be motivated to implement this as, especially given the first sentence, to have that start position to be within the cross hatched area of

Element 1800.

Q. Okay. You had, I think in an answer to a question just a moment ago, said that you -- and I might not be getting the words exactly right.

But I think you said that there could be advantages to either having it be that the start position is within the shadow or that the start position is just somewhere along the edge where the shadow is.

Is that correct?

A. The only advantage I could think of is, is let's say the user swiped and there were two pixels above the graphical shadow or two pixels below the graphical shadow. They were very close but they were off.

Q. Uh-huh.

A. If the system does nothing in that case, the user might think well, I swiped on the graphical shadow and nothing happened.

In reality they were a couple of pixels too high or a couple of pixels too low,

and they may think that the system doesn't work very well or wasn't designed very well.

Q. Uh-huh.

A. Because, in reality they were off of the start point.

Q. Uh-huh.

A. They thought they were on the start point.

So, if I were implementing it, I might build an invisible buffer, if you will. Have that touch -- the tolerance of the touch be a little bit higher or lower.

So, that could be an advantage of being technically off of the graphical shadow, yet still doing what the user likely intended the software to do.

Q. Uh-huh. Okay. And I think you said that might be how you implement it.

A. Uh-huh.

Q. Do you think a POSITA at the time of the patent might have recognized that same advantage of creating I think what you called an

invisible buffer.

A. Yeah, maybe buffer is not the right word. But a border, to a visible, you know, extra degree of tolerance about it.

Not every POSITA, I mean maybe legally you would know better than I if ever -- if you have two different POSITAs, if they are assumed to have the exact same training and the exact same experience and do the exact same design choices.

In reality we know that that is not the case. Every person is an individual. So, some may have recognized that and some may not have.

Q. Okay.

A. I think, technically to, if you were just to stick with what is in 118, you would implement it just as described in 118.

You need to start on the graphical shadow and you need to swipe in the right direction. Drag your finger in the right direction after touching the screen. That is

this embodiment.

Q. Okay. So, even though there were advantages that you talked about to maybe having a couple of pixels outside of the shadow and helping the user experience that way, a POSITA looking at Ahn would not do that.

Is that what you are saying?

A. I think a POSITA would implement this as the start position would need to be on the graphical shadow, yes.

Q. Okay.

A. It is probably getting more creative and just thinking that I knew more than what the designers intended and implemented. You know, just me wanting to implement something different and in my mind potentially better.

But I don't think that is what is described in Ahn. I think what is described in Ahn is the start position needs to be on the graphical shadow.

Q. Okay. So your opinion is that a POSITA reading Ahn and implementing what it

teaches would definitely implement it such that a user would have to touch down with their gesture inside of the shadow that is displayed and then swipe right in order to open the menu?

A. Yes. For this, for this embodiment. Speaking about 118. 118 specific -- Paragraph 118 specifically. Yes.

I don't think graphical shadows are displayed everywhere or discussed everywhere. That is why I couched it in that way.

Q. Okay. But where there is a graphical shadow, the user would have to touch down within the graphical shadow to open the menu.

Is that correct?

A. I think given that first sentence of 118 it says it is displaying a graphical shadow. The purpose is for notifying a start position of a touch and drag operation.

So, I think a POSITA would understand that as if, if you are outside of the graphical shadow, then you are not in a valid

start position.

So, yes. So, it shouldn't open the menu. I use my example, if you are 90 percent to the right-hand side of the screen, it just wouldn't make sense to open a left-hand, a left-side menu.

You typically want to be close to the left-hand side and that is where the graphical shadow is drawn in Figure 18.

Q. Okay. But there is a difference between being 90 percent across the screen and being a few pixels outside of the graphical shadow, right?

A. Yes. There is a difference.

Q. But, Ahn here is not going to acknowledge that difference. And it requires that a designer design the system such that the user touch down within the graphical shadow; is that correct?

A. Yeah. Ahn isn't talking about this border that I hypothesize could potentially be a benefit.

You know, that is not the invention of Ahn. That is just Craig inventing things on the fly.

Q. So, when a POSITA read Ahn at the time of the patent, they would have read Paragraph 118 as dictating that they must have the user touch down within the graphical shadow and then swipe right in order to open the menu.

There is no room for the POSITA having read Paragraph 118 to have implemented it any differently; is that correct?

A. Again, when you put things so absolutely like that, I question it.

Because if you look at the second sentence now it says, "For example," referring to Figure 18A, "if the user drags in a right direction after touching the screen."

So, there it is not so, not so absolute. It is not saying after touching the screen on the graphical shadow. It is just saying after touching the screen.

Q. Uh-huh. So, accounting for that

second sentence, where would a user have to touch and then drag in the right direction in order to open the menu?

A. But I'm just -- let me just think for a moment. I'm just trying to rectify sentence one and sentence two of Paragraph 118.

Q. Okay.

A. I think a POSITA on reading 118 would say that the start position for the touch and drag operation needs to be within the graphical shadow.

So, I think that would be the most probable implementation, the most probable understanding. In the, in this embodiment, if there is graphical shadow display, that that start position would need to be within that cross hatched area.

Q. Okay. So, at the time of the patent, a POSITA grabs Ahn and wants to create a system.

When they read Paragraph 18, when they looked at Figure 18, that POSITA would say I

absolutely have to, in implementing the system, have the user touch down within the graphical shadow in order for them to be able to open the menu?

A. For this embodiment, yes. But, if there is a graphical shadow -- but, like I said I don't believe that in all cases Ahn defines that there is graphical shadows that indicate where menus will come out of.

This is an example of a screen for displaying a graphical shadow. If there was no graphical shadow, I think that there would be more flexibility as to where the Y position of that start point, the start touch could happen.

Q. Okay. Let's assume there is a graphical shadow.

A. Uh-huh.

Q. The POSITA decides I like this idea of a graphical shadow in Figure 18. That makes a lot of sense to me. I think you called it an affordance.

As I understand it, UI standards

love affordance; is that correct?

A. Yes, they are helpful to users.

Q. Okay. So we have an affordance here, Graphic 1800. And a POSITA picking up on at the time of the patent would have been constrained in light of this disclosure in designing the system to only implement it such that the user touched down inside of the graphical shadow and then swiped right in order to open the menu.

A. It is -- I believe that would be the most common understanding from a POSITA on reading this, or if it was a POSITA that was tasked to implement this, the most common way it would be implemented.

When you are so absolute about it would have been impossible for any other POSITA to see it any other way, I kind of go back to what I said about ten minutes ago which is I don't believe every POSITA are, you know, identical clones of each other.

And some, some POSITAs would have

slightly -- I mean, you, you have seen the description of the POSITA and what educational background and what experience background.

Just two people that have the same computer science degree and two years of experience designing user interfaces doesn't mean that they have the exact same design ideas just because they, they both match identically what a POSITA is.

Q. Uh-huh.

A. So, so, it is hard for me. I guess I, I can't agree, unless you tell me, that the law says that every POSITA is identical.

We know that people are not. Just because you have a computer science degree and two years working at Apple or Microsoft or something, designing user interfaces, doesn't mean that you have the exact same tendencies when it comes to user interface design.

So, I would think that the majority -- I guess this is as far as I could go. The majority of POSITAs that have all of the, you

know, that meet the criteria of the POSITA, but because they are individuals would implement 18, Figure 18 as having the start position to be within the graphical shadow, that cross hatched area.

Q. Okay. But there sounds like there is some minority of POSITAs who would read this differently; is that correct?

MR. WALLIS: Objection, form.

THE WITNESS: Like I said earlier, I, just thinking, you know, well, I am a programmer that knows more than Ahn, this designer. You know, some ego and some programmer could say well, I can make it -- yeah, that's pretty good but I can make it better. I could add a little border around it. Or, I can -- you know, there is a lot of ways to modify it.

So, but it is not what it says. I think we need to go by what it says and what a POSITA would understand.

BY MR. HOLT:

Q. Uh-huh.

A. And I believe what it says and what a POSITA would understand is that the start position needs to be within the graphical shadow for this use case.

Q. So, that minority of POSITAs that we were just talking about who might think of some of these modifications, I think is the word you used in your last answer, do we ignore those? Are those POSITAs not the POSITAs we are talking about?

MR. WALLIS: Objection, form.

THE WITNESS: I think we -- it, to me, it becomes just very complicated to talk about multiple POSITAs.

I think we need to go back to just a typical POSITA with the qualifications that are described in terms of their educational background and their experience.

And I think a typical POSITA, a POSITA, I will just say singular, would implement this as being within the, within

the graphical shadow 1800.

BY MR. HOLT:

Q. Okay. So, the software engineer POSITA we have been talking about, this typical person, would pick up on at the time of the patent, read 118, 119, they would see Figure 18, they would read all of Ahn.

And they would say to themselves, I have to implement the system such that the user touches down inside of the graphical shadow and drags right in order to open the menu. If the touch down position is anywhere else, it cannot open the menu.

A. I think that would, that would be understood by a POSITA reading 118, yes.

Q. Okay. So, Ahn constrains them in their ability to design this system such that they would feel that they have to make sure that the user touches down within the graphical shadows; is that right?

A. For this embodiment. I don't believe graphical shadows are part of every time

a menu is open in Ahn that there is always a graphical shadow.

Q. Uh-huh.

A. And if there is no graphical shadow, I would think that there would be more leeway in terms of where that start position could be.

Q. Okay. So, where there is no shadow, there is some leeway is what you are saying?

A. I would say there is greater leeway.

If the menu is emerging from the left, I would say the full range of Y, the full height along the left-hand side --

Q. Uh-huh.

A. -- would be valid start positions. Same thing if the menu, you know, emerges from the right, then it would be the full range of Y positions along the right-hand side.

So, the graphical shadow is, is more limiting, I think, than when the start -- if there is a graphical shadow, it constrains the start position to a greater degree than if there is no graphical shadow.

Q. And that is a, that is a requirement of Ahn?

A. Well, it doesn't explicitly say that. You are not going to find a sentence in Ahn that says if there is a graphical shadow it needs to be within that border. If there is not, you have more leeway.

But, I think a POSITA when reading Ahn and reading the entirety of Ahn and the various embodiments would understand that.

Q. Okay. Does it matter whether or not we are talking about -- and this is going to go a little bit to the legal part of things.

Does it matter whether or not we are talking about anticipation or obviousness with respect to how a POSITA is looking at Ahn?

MR. WALLIS: Objection, form.

THE WITNESS: I think that requires a legal conclusion and I'm not sure if -- I don't think I'm qualified to answer that.

I mean I know what anticipation is versus obviousness, but I don't think I can

apply those to your specific question.
BY MR. HOLT:
Q. Okay. I guess what I'm trying to get at is, what would a POSITA -- just looking at Ahn. I'm not even talking about any of the other references here.
Just looking at Ahn, what would a POSITA have found obvious when looking at Ahn with respect to the graphical shadow?
MR. WALLIS: Objection, form. Scope.
THE WITNESS: What would they have found obvious?
It is such an open-ended question, I'm not sure.
BY MR. HOLT:
Q. Well, let me constrain that a little bit. That is fair.
A. Yeah, uh-huh.
Q. If a POSITA read Paragraph 118, in the context of Ahn overall, would a POSITA have found it obvious to give some leeway, is I think

the word you used, about where the start position is with respect to the graphical shadow?

MR. WALLIS: Objection, form. Scope.

THE WITNESS: No. I mean it is not something I analyzed specifically.

But, in, in general, if the POSITA implemented something different than what was described in 118, that would be the POSITA going off and implementing what they felt was best and not what is described.

We really have to stick with what is, you know, what is disclosed in Ahn itself. And I think in Paragraph 118 it is, it is that the start position needs to be within the graphical shadow, given that first sentence.

BY MR. HOLT:

Q. Okay. And so, I think that is what I have been getting at with my questioning is when we consider this, the teachings of Ahn from the perspective of a POSITA, it is your position

that they would be constrained by Paragraph 118 to begin the gesture inside of the graphical shadow?

A. Yes. For this embodiment. For an embodiment where there is a graphical, if there is a graphical shadow, if there is a graphical shadow, so, yeah, the figure that shows a graphical shadow, and you have a description that says Figure 18 illustrates an example of a screen for displaying a graphical display --

Q. Uh-huh.

A. -- for notifying a start position of a touch and drag operation to a user.

Well, it is pretty apparent that given you've got a finger that is pressing down on element 1800 that is described as the graphical shadow, that is the start position. The finger is drawn right on that graphical shadow.

And it says for notifying a start position of a touch and drag operation to a user. It seems pretty clear to me that what is being

described is the start position needs to be on the graphical shadow.

So, I'm just saying that if a graphical shadow is displayed --

Q. Uh-huh.

A. -- this paragraph seems to be saying that the start position needs to be on that graphical shadow.

Q. Okay. And it is your opinion that having read the sentences you just talked about, the POSITA would never think to stray from that particular teaching.

That they would never implement this such that the user could touch down anywhere else?

A. That is, that is --

This -- I mean, we have had long discussions about, maybe all POSITAs aren't identical to each other --

Q. Uh-huh.

A. -- and some may second guess or feel they have the better design.

But, what this says, and I think that is what we have to go on, is that a POSITA reading this would understand that this is specifying in the specification of Ahn, that the start position needs to be on the graphical shadow itself.

So, that is what a POSITA would understand in reading 118. If there is a graphical shadow, that is specifying the start position.

Q. Okay. And when you were evaluating Ahn and, you know, maybe even some of the other prior art references, you were reading the things that were said as dictates as to how a POSITA must implement a system of those teachings; is that correct?

MR. WALLIS: Objection, form.

THE WITNESS: I would characterize it as how a POSITA would understand.

We got into this whole discussion of implementation, I think largely out of, you know, I don't know if it is proper to call it

a hypothetical.

But, the discussion of, you know, could this be a specification to a software engineering team.

BY MR. HOLT:

Q. Uh-huh.

A. I think what is, what is really the way that this should be read is a POSITA reading the patent, what would they understand.

It is atypical. It is that -- you know, the standard isn't a POSITA reads a patent because they want to implement the software -- the system themselves.

I think the standard and the understanding is a POSITA reads the patent just to know what was disclosed, just to know what, what the POSITA would understand in the prior art.

So, I think that is the lens or the standard or the metric that we have to, that we have to go by as opposed to continuing to go down this route of this patent is a specification for

a software team.

Q. Uh-huh.

A. It is really what would a POSITA understand when reading the patent itself. And I believe a POSITA, when reading 118, would understand that if there is a graphical shadow, the start position needs to be within the graphical shadow.

Q. Okay. When reading this paragraph, Ahn more generally, some of the other prior art references, could a POSITA bring their own knowledge about user interface design to their understanding of the writing and how the writing might be useful in creating a system?

MR. WALLIS: Objection, form.

THE WITNESS: I want to understand your question, so when I answer, I am answering the question asked.

You are saying when a POSITA reads a patent, do they bring their own knowledge in interpreting that?

BY MR. HOLT:

Q. Uh-huh.

A. Yes, in general. Yes. It is their education and training that gave them the experience and the knowledge for, you know, that they used to interpret what they are reading.

Q. Okay. In bringing that knowledge to the reading of a reference like Ahn, are they allowed, or is it, I guess, in -- let me ask this more specifically.

When you were evaluating what a POSITA would have known in light of this prior art, and specifically let's say Paragraph 118, was it your understanding that the POSITA in reading 118 would have to be constrained by the teachings of 118?

MR. WALLIS: Objection, form.

THE WITNESS: It is my opinion that a POSITA in reading 118 would understand what is disclosed in 118 which is that the start position needs to be within that graphical shadow 1800.

That they would -- it seems

unambiguous. It seems like that is what the POSITA would understand.

The POSITA in the back of their mind might think oh well, I know a different way to implement it.

BY MR. HOLT:

Q. Uh-huh.

A. I know what I think is a better way to implement it. But, the POSITA would say I understand what Ahn is describing.

Q. Okay.

A. They are describing X, and I understand X.

So, yes, a POSITA could come up with different ideas or modifications to what Ahn is describing. But, I think that what Ahn is describing is pretty clear.

Q. Okay. What would a POSITA do with those ideas, modifications that they have.

Would they ignore them?

MR. WALLIS: Objection, form.

THE WITNESS: I'm not sure how to

answer your question. What is the task of the POSITA?

Isn't -- are, it seems like we are still in the domain of the POSITA's task to build a software system, which I said was probably not even applicable from a legal point of view here, because that is not what we are talking about.

We are talking about just what the prior art discloses. So, that is the whole reason that we are looking at Ahn.

BY MR. HOLT:

Q. Uh-huh.

A. Ahn, it is my understanding is prior art, and so what did it disclose and what didn't it disclose.

So, if the POSITA has all sorts of other ideas that is not Ahn but something different from Ahn, that is irrelevant to what a POSITA would understand as the disclosures of Ahn itself.

Q. Okay. But, before you had talked

about the concept of obviousness and that you understood what obviousness is; is that correct?

A. Yes. I, I do understand obviousness. And in general, if you have two different references that are -- if reference A discloses X and reference B discloses Y, and there is sufficient motivation to combine those two references, it could be argued that the two references in combination will -- you know, it is obvious to combine those two --

Q. Okay.

A. -- for certain benefit. So, you know, that may or may not map to what is described in the subject patent.

That is my understanding of obviousness.

Q. Okay. Does -- you talked about there being a teaching and a second reference.

Does there always have to be a second reference for obviousness?

A. I think there is a concept that is called single-reference obviousness.

I am not an attorney. I think typically obviousness are several to -- a plurality of references.

But, I do believe that there is this concept of single-reference obviousness. But, I can't claim to be an expert on what distinguishes that or not.

Q. Yeah. I guess I'm trying to understand from your perspective in evaluating what a POSITA would have done with this prior art, you know, what your understanding of that POSITA is and how they would approach this art, is where I'm getting at with these questions.

And so, it is possible you understand that there exists a concept of single reference obviousness you said, but you don't know what that means. Is that correct?

MR. WALLIS: Objection, form.

THE WITNESS: Yeah, I believe that was mentioned in another case a long time ago. It may have been described to me at the time, but I have forgotten the specific

attributes of what it -- you know, what a reference would have to have or what kind of arguments would be made.

I don't, I don't study that. I haven't studied that. So, if your question is do you -- you know, can you define single-reference obviousness or what does it mean, I wouldn't be able to give you a good answer on that.

I think it is a legal, a legal term. I, I mean I could speculate, but, on what it might mean.

BY MR. HOLT:

Q. Your opinions were from the perspective of a POSITA; is that right?

A. Yes, they were.

Q. Okay. And so again I guess what I'm trying to get at is, what a POSITA would be considering as obvious in light of a teaching.

Does that make sense?

MR. WALLIS: Objection, form.

THE WITNESS: I think so. It is a

very high level question or concept.

What -- so, there is the teaching in 118.

BY MR. HOLT:

Q. Uh-huh.

A. And if you ask what they would consider, what a POSITA would consider obvious --

Q. Uh-huh?

A. -- in terms of 118, well, that you are touching on the graphical shadow that is the start position.

Q. Uh-huh.

A. That you are dragging to the right after touching the screen.

Q. Uh-huh.

A. The screen is presumably on the graphical shadow per the first sentence.

Q. Uh-huh.

A. So, I think those are certainly obvious.

Maybe you are implying that there is additional things that are obvious that aren't

mentioned. I'm not sure. You have to be more specific in your question and I will do my best to answer.

Q. Okay. Would a POSITA have found it obvious after reading Ahn that a user could touch down outside of the graphical shadow and still open the menu?

MR. WALLIS: Objection, form. Scope.

THE WITNESS: I don't know if I would call it obvious. It is certainly not what is described.

BY MR. HOLT:

Q. Uh-huh.

A. I think a POSITA would understand that one doesn't have to have a graphical shadow to open a menu.

Q. Uh-huh.

A. Which is described in Ahn. So --

Q. Let's assume for the sake of the question there is a graphical shadow. Again, the POSITA sees the graphical shadow as an

affordance, loves affordances, wants the affordance. So they want the graphical shadow.

My question is that would it have been obvious to that POSITA, the person that we are talking about, the typical person that has the background we were talking about before, a POSITA as it was defined in this proceeding.

Would it have been obvious to that POSITA that a user could touch down outside of the graphical shadow and still open the menu?

MR. WALLIS: Objection, form, scope.

THE WITNESS: That is not something I specifically analyzed for this. I wasn't asked to analyze that.

It is certainly not what is described in 118. This is different than 118.

I mean, you could say, well, wouldn't it be obvious that they could just tap on the graphical shadow and it would open the menu, too.

BY MR. HOLT:

Q. Okay.

A. Or, you know, that they could do, put two fingers and splay the two fingers to, you know, do an enlarging kind of operation.

I mean, you could think of all kinds of things. Wouldn't it be obvious to do X, Y and Z? That is not what is described in 118.

So, POSITAs can be creative and think of all kinds of things, but I don't think that what you are describing of putting the finger down somewhere else that is not on the graphical shadow and opening that menu, it is just really not what is described.

So, I believe the standard is, is what would a POSITA have understood when reading Ahn, or more specifically when reading Ahn 118. And I don't believe that they would have understood that it is possible -- possible might not be the best. Anything is possible when it comes to computer graphics pretty much.

But that is not what is described. That is not how Ahn was intended to work when

there is a graphical shadow. So, I think I answered the question no.

From the disclosure in 118, I don't believe that it would be obvious to, you can start in the graphical shadow or outside. I mean it is explicitly saying, here is the graphical shadow. We are going to start in the graphical shadow.

And if I were to agree with you, which I don't, it is like yeah, you can ignore the graphical shadow. There is really no purpose. It says you need to start in the graphical shadow, but it would be obvious to start anywhere.

So, I don't think a POSITA would understand, would understand that from reading 118 of Ahn.

Q. Okay. You had mentioned tapping.

A. I'm sorry, mentioned what?

Q. You mentioned tapping the graphical shadow 1800.

Do you recall that?

A. Yes, that was just throwing out examples of other ways to open the menu that are not described in 118.

Q. Okay. A POSITA having read Ahn, and all of Ahn, what would they think a system would do if a user tapped the graphical shadow?

MR. WALLIS: Objection, form.

THE WITNESS: I think they would, they would think that nothing happens.

BY MR. HOLT:

Q. Okay.

A. It is responsive to a swipe and not a tap.

Q. Okay. So, because Ahn doesn't describe what happens when a user taps graphical shadow 1800, that POSITA would understand that to mean that nothing can happen -- nothing is allowed to happen in response to the tap.

A. Well, in reading further, actually 119, it says referring to 18B, so this is the right-hand side of 18.

If the user touch drags to the left,

the menu list shown in Figure 15B -- let me just look at 15B real fast.

Okay. I see 15B. Let me go back to 119. If the user touch drags to the left, the menu list 1500 shown in 15B can be displayed in the display 40.

In this case as the user may press the graphic 1800 with a finger, the graphic gradually disappears in the display, and the menu list 1500 can be displayed as emerging from the left side of the display, while graphic 1800 disappears in 40.

As emerging from the left in side 15 -- one moment. Let me look at 1500 again.

Okay. So, so this is describing a press operation. The user may press the graphic 1800 with the finger. The graphic 1800 gradually disappears in the display, and the menu list 1500 can be displayed as emerging.

So, so, it seems to be describing a way to use a press to get menu 15B to be

displayed.

Q. Okay. So, considering Paragraphs 118 and 119 together, how would a POSITA understand the menu 1500 to open?

A. Let me get that -- I'm going back and forth between the spec and the figures, so it will take a moment.

Q. Uh-huh.

A. So, I will just read aloud the second sentence of figure -- of Paragraph 118.

"For example, referring to Figure 18A, if the user drags in the right direction after touching the screen, the graphical shadow 1800 is displayed in the display 40 and the menu list 1500 shows -- shown in Figure 15B can be displayed in the display 40."

So, they would swipe right starting on the graphical shadow 1800 that is displayed in Figure 18A. And that would get the menu list 1500 that is shown in 15B to be displayed.

That is how they would display 1500.

Q. Are there any other ways that menu 1500 would be displayed?

A. I am going back and forth. One moment.

In Paragraph 119 it says, "Further, for example," referring to 18B, "if the user touch drags to the left, the menu list 1500 shown in Figure 15B can be displayed."

So, I just want to look at these two. It is really only showing one menu, which is 15B. That is the only menu that is displayed.

The user touch drags to the left. The menu 1500, shown in Figure 15B, can be displayed in display 40.

In this case, as the user may press the graphic 1800 with a finger, the graphic 1800, the graphic 1800 gradually disappears into the display, and the menu list 1500 can be displayed as emerging from the left side of the display 40, while the graphic disappears in the display 40.

So, a touch on 1800, on the second sentence of 119, says a press on graphic 1800

will disappear element 1800 and display menu list 1500.

So, that is disclosed as well.

Q. So, between Paragraphs 118 and 119 of Ahn, how many ways are there for a user to open the menu 1500 with respect to Figure 18?

A. You can swipe right or you can press. Yeah, you can swipe right on the graphic 1800 or you can do a press. But neither of these are mapping to two different durations of touch that, you know, Claim 1 and 1 of 1 are describing.

Q. Okay. I'm really more interested in just trying to understand how Ahn works and how a POSITA would have understood it to work.

When Paragraph 119 says, "In this case as the user may press the graphic 1800 with a finger, the graphic 1800 gradually disappears in the display 40 and the menu list 1500 can be displayed as emerging from the left side of the display 40, while the graphic 1800 disappears in the display 40."

Is that sentence talking about a different method for opening menu 1500 than the drag talked about in the first sentence?

A. Yes. It appears to, it appears to be a different method.

Q. Okay. So, in light of Paragraph 119, there is at least two ways to open menu 1500 in Figure 18.

Is that correct?

A. Seems to be. Seems to be a swipe to the right starting on the graphical shadow, or a press on the, a press on the 1800.

Q. Okay. When a POSITA read the word "press," how would they have understood that?

A. To take the finger and to press it against the screen itself on the graphical shadow 1800.

Q. Okay. Would any touch of a finger within the graphic 1800 be considered a press?

A. Well, I don't think it would -- it would not be broad enough to include a swipe. But, to the extent you are asking is a press

similar to a tap, I think it could be.

It could be. A tap implies that the, that it also comes off of the finger -- comes off of the display soon. A press may not imply that it comes off soon as well.

A tap does imply that it is a finger down, finger up. A press implies that it is finger down, but I mean ultimately the finger does come up at some point.

There is no description of timing when it, you know, how long the finger stays down.

But, I don't -- a press is not broad enough to include a swipe.

Q. Okay. So, with respect to the second sentence of Paragraph 119, would a POSITA have understood that the menu opens as a result of the initial contact between the finger and the screen or would it be some other part of the gesture that would open the menu?

A. You can --

MR. WALLIS: Objection to form.

THE WITNESS: You can say it in the same way, but just ask the question one more time, please?

BY MR. HOLT:

Q. So, I think much earlier in our conversation we were talking about gestures having a lot of different dimensions.

And, I'm trying to understand what dimensions are important for the word "press," and how a POSITA would understand the word press.

So, when Paragraph 119 says "press," does that mean the menu opens as soon as the finger touches the screen?

MR. WALLIS: Same objection.

THE WITNESS: If your question is, is it invoked on finger down versus finger up, I think that it is in -- the triggering action is finger down.

The press is finger down. It is not finger up. And, what you say immediately, there is, there is implications that there is some animations going on here.

Graphic 1800 gradually disappears. That is the graphic shadow animating, you know, to the left off the screen.

And the menu list can be displayed as emerging from the right-hand side of the display. That that could either be an animation -- emerging from the left-hand side of the display.

That could either be an animation itself or just an instantaneous coming -- you know, it would appear it is from the left because it is anchored to the left-hand side.

So, I guess I'm answering -- I mentioned animations because I think you used the word "immediately."

Q. Uh-huh.

A. But, but the comment that you had about press and what triggers it, I would say it is finger down.

Q. Uh-huh.

A. When the finger hits the display on 1800, the graphic 1800 gradually disappears.

That would be the animation taking 1800 off the display. And the menu, in the list 1500, can be displayed as emerging from the left-hand side of the display.

Q. Okay.

A. So, finger down.

Q. Okay. So, as soon as the user's finger is down on the surface of the display, the animations you were just talking about in your previous answer begin; is that correct?

A. I think that is how a POSITA would understand it.

Q. Okay.

A. Although implementation wise, the gesture recognition piece would have to -- there is really not a difference. I'm just thinking this through. There is really not too much of a difference.

We are talking about two ways of getting the menu to appear that is in 15B, and, you know, as described in 118 and 119.

One is a press and the other is a

drag.

Q. Uh-huh.

A. Let me read something in 118, please.

Q. Uh-huh.

MR. WALLIS: Dr. Rosenberg, please finish answering the question.

While there is a lull, David maybe, it has been, I think two hours. If you are anywhere close to having a break spot, I think that might be nice for everyone.

MR. HOLT: Understood. I apologize, I lost track of time. Thank you.

MR. WALLIS: Happens when you are having fun, right.

MR. HOLT: Exactly.

THE WITNESS: Hmm. Well, after re-reading it several times, there is, there is some nuance here that I haven't discussed yet.

BY MR. HOLT:

Q. Okay.

A. And I have forgotten your question, too, so if you want to re-ask that.

But, there is, there is some things I want to describe about 118 that I didn't describe earlier.

MR. HOLT: Okay. Do you want to describe those now or would you like to take a five-minute break to use the restroom?

THE WITNESS: I am happy to take a break and then come back to it.

MR. HOLT: Okay. Sounds good. Can we go off the record?

(Recess taken -- 10:02 a.m.)

(After recess -- 10:10 a.m.)

BY MR. HOLT:

Q. So, before the break, Dr. Rosenberg, I think you said that there was some nuance, if I am remembering the word correctly, with respect to Paragraphs 118 and 119 that you wanted to discuss.

So, what is the nuance you were referring to?

A. Yeah, maybe it is even more than nuance.

Just in re-reading it multiple times, I think that I just -- I don't think that this is describing a tap or a press.

I think the interaction with the graphical shadow is just via swipes. And I can explain that.

And I also think that the graphical shadow needs to be invoked. It is not just always present. So, I didn't describe that earlier, too.

In 118, it says, "For example," referring to Figure 18A, "if the user drags in a right direction after touching the screen, a graphical shadow 1800 is displayed in the display 40."

So, that tells the user that -- that tells the POSITA when reading this that the graphical shadow isn't always there, but you invoke it by right swiping on the screen to get the graphical shadow 1800 to be displayed on the

display 40.

And then the menu list 1500 that is shown in 15B can be displayed in 40.

So, reading on, I will just read and explain. "In this case as the user drags the graphic shadow 1800, the menu list 1500 can be displayed along the dragged graphic 1800."

And then, so, I guess that was Point 1, is that the user needs to get that graphic shadow to show, as opposed to it being always present.

And then the second is, I believe that the interaction with the graphic shadow is always via swipes, as opposed to I mentioned the press, you know, implies that it could be a tap or a different way for interacting it.

In reading it more carefully, I don't believe that is the case and I will tell you why.

So, in 119, it says "Further, for example," referring to Figure 18B, "if the user touch drags to the left -- " so, that is a swipe

operation, " -- the menu list 1500, shown in Figure B, can be displayed in the display 40."

So, to get the menu list 15B to display, it is explicitly saying that you touch drag to the left on that graphic shadow.

And then the second, the sentence right after it says, "In this case as the user may press the graphic 1800 with a finger," well, you always have to press before you can do a swipe --

Q. Uh-huh.

A. -- right? So, that is the beginning of your swipe is that press.

"In this case as the user may press the graphic 1800 with a finger, the graphic 1800 gradually disappears in the display 40, and the menu list 1500 can be displayed."

So, here they providing more detail as to how 15B is displayed as a result to a left swipe on that graphic shadow. And that more detail has to do with the animations that are described and how the graphic shadow gradually

disappears in the display, and the menu list can be displayed as emerging from the left-hand side.

That implies that it is also an animation as well.

If something is emerging, then it implies that it is -- you have some sense of it emerging over time.

Q. Uh-huh.

A. So, I believe that this is describing two different animations that happen as a result of a left swipe on the graphic shadow.

Q. A left swipe in Figure 18 would have been back towards the left edge; is that correct?

A. Yes, if you look at 15B, well I'm sorry, 18, Figure 18B.

The fingers on 18A are sort of pointing to the right, so it implies that is the right swipe to get that graphic shadow to show.

Q. Uh-huh.

A. And then the left swipe on, on -- you see the fingers are pointing the other way --

Q. Uh-huh.

A. -- on 18B, it invokes the animation to hide the graphic shadow and to bring up the menu that you see in 15B.

That is what 119 seems to be describing.

Q. Okay. So if I am understanding the order of operations correctly here, what Ahn is describing is that initially there is no graphical shadow 1800.

Is that correct?

A. Yes.

Q. Okay. Then, I have to swipe to the right in order to display the graphical shadow 1800.

Is that correct?

A. Yeah. It says, "If the user drags in a right direction after touching the screen, the graphical shadow 1800 is displayed in the display 40."

And the menu list 1500 shown in 15B can be displayed in the display.

So, it kind of implies that both those happen on the same swipe. I was reading for a while back and forth. You know, is it broad enough to mean that you do a second swipe, one to get the graphic shadow and then a second swipe to get that menu list?

It may be broad enough to encompass both. But it does seem that it is probably a single swipe that first shows the graphic shadow and then ultimately turns into the menu.

And then you can essentially -- anyway, I will wait for your question.

Q. So, once the graphical shadow is there, am I performing the same swipe to open the menu or a different swipe to open the menu?

A. It seems to imply it is the same swipe to the right. But, the next paragraph, they talk about the left swipe.

I think it gave more credence to the interpretation that it is two swipes. One is to display the graphic shadow.

Q. Uh-huh.

A. And then -- the first swipe is to show the graphic shadow.

Q. Uh-huh.

A. The second swipe -- I think a very plausible read of this is that the second swipes to show the menu are all to the left. They are all to the left on the graphic shadow.

Q. Okay. So I'm a user. I have to swipe from somewhere around the left edge toward the center of the display in order to show the graphic 1800.

And then I touch down inside the graphic shadow and swipe left to show the menu.

Is that correct?

A. Yeah. Let me just re-read it and answer you. All right. I have read it again.

So, I think you were asking it is a right swipe to bring up the graphic shadow and then a left swipe that is starting on the graphic shadow to dismiss the graphic shadow and bring up 15B.

Q. Yes.

A. Yes.

Q. Is that your understanding of how it works?

A. Yes, it is.

Q. Okay. So, in order to get the graphic shadow 1800, I have to do a first gesture. And then in order to open the menu, I have to do a second gesture; is that correct?

A. I think there is a little bit of ambiguity in that. And I will point to, it is the word "can" in the second to the last line of Page 39.

Q. Uh-huh.

A. "If user drags in a right direction after touching the screen, a graphical shadow 1800 is displayed in the display, and the menu list 1500 shown in 15B can be displayed in the display 40."

So, if it said "is displayed," it would be unambiguous. It is displayed right there. It is a single gesture, drag to the right that, that I don't think is, a POSITA would read

is the case.

Because what you would have to do is you would show that graphic shadow just for a moment. And then it would disappear, because you are not showing 15B, the menu, at the same time as the graphic shadow.

It is either the menu or the graphic shadow, right. If you had the graphic shadow, it would be obscuring part of your menu.

Q. Uh-huh.

A. So, it says the word "can" be displayed. And if you look at the subsequent, the rest of the sentence, and the entirety of 119, it describes how that menu, Figure 15B is displayed, what additional things the user needs to do, to get 15B to display.

And that would be a left swipe on the graphic shadow itself that will dismiss the graphic shadow with an animation and emerge 15B, likely with an animation as well.

Q. Okay.

A. So, I believe that given it uses the

word "can" and given that it would not be a very usable system to have the graphic shadow appear at the exact same time as the menu, and have those both fighting for the same screen space, that it is a two -- like you said, two swipes, a swipe to open the graphic shadow and then a swipe to use that graphic shadow to open menu 15B.

Q. Okay. If a user were to swipe right and keep the swipe going, you know, kind of further along the display, would that open the menu or no?

A. I don't believe so. There is no disclosure of that here.

Q. Okay. So, the sentence we were looking at before that says, "For example, referring to Figure 18A, if the user drags in a right direction after touching the screen, a graphical shadow 1800 is displayed in the display 40, and the menu list 1500 shown in Figure 15B can be displayed in the display 40."

The menu list is not displayed with respect to that right direction swipe. Is that

correct?

A. Well, I don't believe it is displayed right at that time, but it enables the possibility. It can be displayed in 40.

And the next couple of sentences show how it can.

Like it certainly -- it doesn't seem to disclose the possibility of showing 15B before that graphic shadow comes out.

The graphic shadow is the trigger -- specifically, a left swipe on the graphic shadow -- to get menu 15B to display.

So, there, there is no way to display 15B, if you don't have a graphic shadow as being your start point target.

So, given the two things I said, the fact that it uses the word "can" be displayed, I think that means it enables a system, an affordance has come on to the screen, which is your graphic shadow, that will allow a user to open 15B.

And if it was, if it was as you said

where a long wipe -- a long swipe to the right would bring up the menu, then they never talk about dismissing the graphic shadow itself, right.

So, you wouldn't -- a user wouldn't want a system with the graphic shadow overlaid on the same part of the screen as the menu. They would fight with each other.

So -- and there is no description of the long swipe bringing up the menu itself. I mean, the description of how in this -- at that point how the graphic shadow is dismissed.

The only way the graphic shadow is dismissed is a sentence or two later where it says when you left swipe on the graphic shadow, it does two things. It animates the dismissal of the graphic shadow and it brings up the graphic itself.

It uses the word "emerges." The menu list 1500 can be displayed as emerging from the left side of the menu.

Q. Okay.

A. So, I believe it is describing two swipes.

Q. Okay.

A. A right swipe and then a left swipe.

Q. I think earlier in our discussion you referred to graphical shadow 1800 as an affordance; is that correct?

A. I think it --

MR. WALLIS: Objection, form.

THE WITNESS: It could be described as an affordance, yes. The patent doesn't use that term. But, a POSITA would understand what an affordance is, and I would describe it as an affordance.

BY MR. HOLT:

Q. Is it common -- or let me strike that. Ask that differently.

At the time of the patent, would a POSITA have found it normal or peculiar that a user would have to input a gesture to gain access to an affordance?

MR. WALLIS: Objection, form.

THE WITNESS: I think affordances can pop up depending on the mode. This seems to be describing a situation in which the user wants to be in a mode where they can launch, launch menus.

I don't think it would -- I think it can happen both ways. Affordances could be always present or affordances could be depending on the mode.

There would be disadvantages of having the graphic shadow that you see in Figure 18 always present all of the time.

BY MR. HOLT:

Q. Okay.

A. It uses a lot of pixels. Maybe 5 percent of the pixels of this display would be constantly, you know, out of commission, so to speak, because they would always be this cross hatched graphical shadow.

So, there would be advantages of not showing that all of the time.

Q. Okay. What is the purpose of the

graphical shadow?

A. Well, I guess I would want to search through Ahn to see if they specifically say something. In general, it provides a target.

But, I'm happy to see if Ahn says something specifically regarding the purpose.

Q. I believe in Paragraph 117, it talks about an identifier for notifying the user that an item list matched to the specific direction as displayed in the display 40, can be displayed in the display 40.

A. All right. Let me read -- 117, you say?

Q. Yes, sir.

A. All right, I have read that.

Q. Okay. Before a user swipes right from the left edge of the display and the graphical shadow 1800 is displayed, as you described it --

A. Uh-huh.

Q. -- is there any indication to the user that that gesture, an outcome is available

to him or her?

A. I don't believe so.

Q. Okay. So, in order to get access to an indication of where a menu emerges, the user has to do a gesture for which there is no notification; is that correct?

A. In order to get access to where a menu -- what were the next words?

Q. Let me restate.

The graphical shadow 1800 is a notification to the user that a menu is associated with the left-hand side of the display, correct?

A. Yes.

Q. In order to get access to that notification, a user would have to input a gesture that has no notification itself; is that correct?

A. When you say no notification, you mean there is not an affordance?

Q. Correct.

A. Okay. Yes. And I believe I

answered that just previously.

Q. Okay.

A. If that was the same question as before.

Yes, I don't believe that there is an affordance showing that the -- I mean much like in the same way with, you know, Apple and iOS devices, there is plenty of swipe directions that both those operating systems recognize without any affordance.

The user just needs to know from training or experience.

Q. Okay. But if a user would know a gesture from training or experience, why include the graphical shadow 1800 at all?

A. I was thinking just a minute or two earlier, this isn't necessarily how I would design it. But, I think it is a good question. It is a valid question.

I can just go by what is disclosed in Ahn itself. Ahn does disclose a graphical shadow in Paragraphs 118 and 119. They disclose

how to get the graphical shadow to display.

Q. Uh-huh.

A. If you look at Figure 15, there is no graphical shadow.

Q. Uh-huh.

A. And they are bringing up a menu. That is why I talked about there's different embodiments for how to bring up a menu.

Q. Uh-huh.

A. Some use graphical shadows, some don't.

Here this, what is described in 15 seems to be somewhat simple, right. There is no affordance, but you have the advantage of not taking up pixels from the display, all of the time.

And, the user does need to know it, how to get that menu to display, but it is a simple right swipe.

There is, in Paragraphs 118 and 119, they discuss a different way to get Figure 15B to display as well, and that is using the graphical

shadow technique.

You know, there seems to be multiple ways to get Figure 15B to display --

Q. Uh-huh.

A. -- those different embodiments. And, it -- I mean, if you are asking me to defend why do 18 -- why do what was described in 18 -- Paragraphs 118 and 119, I haven't really analyzed that.

You know, if there are advantages over what is already described for Figure 15. But it does seem to be described as yet another possibility to bring up 15B.

Q. Right. Okay. Would it have been obvious to a POSITA after reading Paragraphs 117 through 119 to have displayed graphic 1800 from the start without the gesture?

MR. WALLIS: Objection -- sorry. Objection, form, scope.

THE WITNESS: You are asking would have been obvious to always have the graphic shadow displayed?

BY MR. HOLT:

Q. Yes.

A. I don't think it, I don't think it would be advantageous to do so, for the reasons I mentioned earlier, of using the display space all of the time.

Q. Okay.

A. So, I think a POSITA could realize they could do 100 different things with the user interface, but I don't think they would be motivated to do so, to have that always displayed.

Q. Okay. We got on this topic way back with the idea of a press, potentially opening the menus.

And I think now we are at a place, am I correct, that a press alone will not open a menu; is that right?

A. Yes. Not as described in 118 and 119.

That press essentially was the first touch associated with the left side, a leftward

swipe.

Q. Okay.

A. A left swipe.

Q. If after the rightward swipe opens or displays the graphic 1800, under your understanding of this description, what would happen if a user tapped inside of the graphic 1800?

A. I don't think anything would happen.

Q. Okay.

A. Nothing would happen. That, that graphic shadow is responsive to swipes.

Q. Okay. A POSITA who read on in these paragraphs, would that POSITA have found it obvious for a tap on the graphical shadow to perform any functionality whatsoever?

MR. WALLIS: Objection, form.

THE WITNESS: I will answer it with motive. I don't think they would be motivated to provide a different interaction technique.

BY MR. HOLT:

Q. Okay.

A. I think they would, they would design it such that the graphic shadow is meant to be something that is responsive to a swipe and not a tap.

Q. Okay. So, a POSITA reading on would, in using a graphical shadow 1800, only understand it as being able to respond to swipes?

MR. WALLIS: Objection, form.

THE WITNESS: I believe that is how Ahn describes the use of the graphic shadow and in no other way, yes.

BY MR. HOLT:

Q. Okay. And a POSITA would never think to deviate from that teaching; is that correct?

A. I don't think a POSITA would be motivated to deviate from that teaching.

Q. Okay.

A. A POSITA, being one of ordinary skill in user interface design, would realize that there is many, many options that could be

done with that graphic shadow, but to accomplish the goal, I don't think they would be motivated to do anything else but to be responsive to the swipe.

Q. Okay. So, there is -- the POSITA is aware of other options, but there would be no motivation for utilizing any of those options; is that correct?

MR. WALLIS: Objection, form.

THE WITNESS: I think that I -- the short answer is yes. A POSITA is aware of many different user actions and styles.

I mean, the graphic shadow could turn into a text entry box and you could, you could name it.

You know, would a POSITA be motivated to allow the user to put a custom name in the graphic shadow? No, they wouldn't.

Would it be possible, or are they aware that it could be programmed that way to make it a text entry box and to name your

graphic shadow?

Yeah, they would be aware that it was possible. But that doesn't mean they would be -- you know, it would provide benefit to the user for the task at hand.

BY MR. HOLT:

Q. If they were aware of a benefit, would it have been obvious for them to make that change?

MR. WALLIS: Objection, form. Scope.

THE WITNESS: They would -- if they were aware -- if they thought that there was a benefit, then a POSITA could have implemented the benefit.

But, again, I think what is important here is, it is not what creative ideas a POSITA could have above and beyond what Ahn is describing when the POSITA is reading Ahn.

A POSITA might read Ahn and think of, oh, I can think of ten additional things

that I could do to this that aren't described in Ahn at all.

I mean, that is what we are talking about here.

BY MR. HOLT:

Q. Uh-huh.

A. My understanding is what is important is, what would a POSITA at the time of the invention understand as Ahn having -- you know, what is Ahn disclosing. Not all of the, the 100 extra things a POSITA could do that Ahn isn't disclosing.

So, Ahn isn't disclosing taps on the on the graphic shadow. Ahn isn't disclosing the ability to name a graphic shadow with a custom name.

All of the things that a POSITA would understand are possible, but just aren't part of the disclosure of Ahn.

Q. Okay.

MR. HOLT: I don't think I have any other questions.

THE WITNESS: Okay. Thank you.

MR. HOLT: Chad?

MR. WALLIS: No redirect at this time. We are good.

MR. HOLT: Okay. Thank you.

(Whereupon, signature not having been waived, the deposition suspended at 10:44 a.m.)

* * *

DECLARATION UNDER PENALTY OF PERJURY

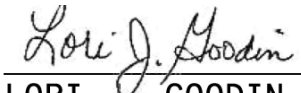
I, CRAIG ROSENBERG, PH.D., do hereby certify under penalty of perjury that I have read the foregoing transcript of my deposition taken on July 10, 2025; that I have made such corrections as appear noted herein in ink, initialed by me; that my testimony as contained herein, as corrected, is true and correct.

Dated this ____ day of _____, 2025.

CRAIG ROSENBERG, PH.D.

CERTIFICATE OF NOTARY

I, LORI J. GOODIN, RPR, CRR, CA CSR # 13959 the Notary for this deposition, do hereby certify that the witness whose testimony appears in the foregoing deposition was sworn by me; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken; and, further, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, or financially or otherwise interested in the outcome of this action.



LORI J. GOODIN, RPR, CLR, CRR
Notary Public in and for:

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Notary Commission Number: GG987804
My Commission expires: May 12, 2028
STATE OF CALIFORNIA, CA CSR# 13959
My Commission expires: February 22, 2027

STATE OF MARYLAND, COUNTY OF ANNE ARUNDEL
My Commission expires: August 2, 2025
DISTRICT OF COLUMBIA, WASHINGTON DC
My Commission expires: June 1, 2026

STATE OF DELAWARE, COUNTY OF KENT
My Commission expires: September 9, 2025

Craig Rosenberg, Ph.D., c/o
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Austin, Texas 78701

Case: Apple Inc. v. Smith Interface Technologies, LLC
Date of deposition: July 10, 2025
Deponent: Craig Rosenberg, Ph.D.

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