

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

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4 GOOGLE LLC, Case Nos:
5 Petitioner, IPR2023-00707
6 v. IPR2023-00708
7 DDC TECHNOLOGY, LLC, IPR2023-00709
8 Patent Owner. IPR2023-00711
9 _____

10 VIDEOTAPED DEPOSITION
11 _____

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13 WITNESS: KURTIS KELLER
14 DATE: Friday, January 12, 2024
15 START TIME: 9:30 a.m., ET
16 END TIME: 4:28 p.m., ET
17 REMOTE LOCATION: Remote Legal platform
18 REPORTER: Gina Nilio, CER-2150
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1 P R O C E E D I N G S

2 THE REPORTER: Good morning. We are now
3 on the record. Today's date is January 12th, 2024, and
4 the time is approximately 9:30 a.m.

5 My name is Gina Nilio, and I am the
6 officer designated by Remote Legal, 11 Broadway, Suite
7 456, New York, New York, to take the record of this
8 proceeding.

9 This is the deposition of Kurtis Keller,
10 taken in the matter of Google LLC versus DDC Technology,
11 LLC, in connection with IPR2023-00707, IPR2023-00708,
12 IPR2023-00709, and IPR2023-00711, filed in the United
13 States Patent and Trademark Office before the Patent
14 Trial and Appeal Board.

15 This deposition is being taken remotely
16 on behalf of the patent owner and is being conducted
17 pursuant to the procedural rules and laws governing this
18 matter.

19 As such, all parties agree to this means
20 of capturing the record, which may include recording by
21 audio, audiovisual, or stenographic means, as if it were
22 done by traditional, in-person means.

23 Further, all parties agree that the
24 deposition officer or person administering the oath may
25 be authorized to administer the oath under the rules of

1 the state where they reside.

2 Do all parties so stipulate?

3 MR. KIKLIS: Yes.

4 Cortney, I think you're muted.

5 MR. ALEXANDER: Sorry. I thought I took
6 it off long enough. Yes, patent owner is fine with
7 that.

8 THE REPORTER: Would all counsel please
9 identify themselves for the record starting with the
10 noticing attorney?

11 MR. ALEXANDER: Cortney Alexander for the
12 patent owner.

13 MR. KIKLIS: Michael Kiklis from Kiklis
14 and Clark, for Petitioner, Google. And with us is Andy
15 Nguyen from Google. In-house counsel to Google.

16 THE REPORTER: Okay. Mr. Keller, will
17 you raise your right hand, please?

18 Do you swear or affirm that the testimony
19 you shall give today in this proceeding will be the
20 truth, the whole truth, and nothing but the truth?

21 MR. KELLER: Yes, ma'am.

22 WHEREUPON,

23 K U R T I S K E L L E R,

24 having been called as a witness, being duly sworn by the
25 notary public present, testified as follows:

1 THE REPORTER: Counsel, you may begin.

2 EXAMINATION

3 BY MR. ALEXANDER:

4 Q Good morning, Mr. Keller. Do I understand
5 that you're located physically with Mr. Kiklis?

6 A Yes. We are in the same room.

7 Q Okay. Who else is in the room with you?

8 A I believe it is just us.

9 MR. ALEXANDER: Okay. So Mr. Kiklis, I
10 understand that you've turned your video camera off. I
11 don't really have a problem with that. In my
12 experience, it's typical for the defending attorney in
13 the room with the witness to leave his camera on. I
14 don't really care. But I would like a representation
15 that you will not be communicating with the witness
16 while questions are pending, other than to state your
17 objections for the record. Do I -- is -- can I get that
18 representation from you?

19 MR. KIKLIS: I'm not going to be
20 communicating with the witness. What was your -- what
21 do you want me to say? You don't want me communicating
22 with the witness? What? Say that again.

23 MR. ALEXANDER: While questions are
24 pending. Since the two of you are located in the same
25 room together, that's why. In my experience, it's a

1 little unusual for the defending attorney to have his
2 camera off. I don't expect you to be trying to, kind
3 of, circumvent rules and communicate with the witness
4 while questions are pending, but since you did turn your
5 camera off, I want to just make sure we're all on the
6 same page, that that sort of communication, while
7 questions are pending --

8 MR. KIKLIS: Well, I will not be --

9 MR. ALEXANDER: -- will not be occurring.

10 MR. KIKLIS: -- I won't be influencing
11 his testimony in any way.

12 MR. ALEXANDER: Great.

13 BY MR. ALEXANDER:

14 Q All right. Mr. Keller, do you have any
15 documents with you?

16 A Yes, I do. I've got paper documents of the
17 199 of the 184 declaration, 001 declaration, the 075
18 declaration. A Chu patent. Let's see what you've got
19 there. The actual 075 patent. And the paper here fell
20 off. See what it says on part two. It says -- oh, this
21 is part of the same package, just staple failed. 075.
22 Let's see. What else have I got?

23 MR. KIKLIS: Should I get somebody to get
24 you a binder clip, so you can keep that together?

25 THE WITNESS: I may have to. It's

1 falling apart. Let's see, anything else?

2 MR. KIKLIS: Here you go.

3 THE WITNESS: Thank you. And the Kondo
4 one. It's falling apart on me, too, here.

5 BY MR. ALEXANDER:

6 Q The Kondo reference, is that what you said?

7 A Yes. That is correct. I'm sorry. (Mumbling
8 to self.) I do not have any other documents, nor
9 anything else here, besides my glasses, and keys, and
10 water.

11 Q Great. So do we -- if I understood right, the
12 declarations that you've submitted in these proceedings,
13 the Chu reference, the 075 patent, and the Kondo
14 reference, is that everything?

15 A Yes.

16 Q Do any of those documents that you have
17 contain any notes or other markings that are not
18 included in the versions that were submitted in -- by
19 petitioner -- in these proceedings?

20 A No, they all are clean.

21 Q Okay. So I expect that I will introduce some
22 of those exhibits as -- some of those documents as
23 exhibits in this deposition. I don't mind if you
24 reference your hard copy, given your representation that
25 they're the same as what was filed, with no notes.

1 Let's go ahead, and I'm going to introduce the
2 first exhibit. Get this shared. You should see it on
3 your screen in a moment. But like I said, I understand
4 that you may be referring to a paper copy, which is
5 fine. So this is your declaration for the 075 patent
6 submitted in IPR2023-00707, correct?

7 A Please state that again. I was trying to
8 arrange the screen so I could see it.

9 Q Sure. This is your declaration submitted in
10 the 707 IPR proceeding, correct?

11 A Yes. It's the 075 --

12 Q I --

13 A -- declaration, and the --

14 Q Yeah.

15 A -- 075 patent.

16 Q The 075 patent. I actually referenced the
17 last three digits of the IPR proceeding number. The
18 full --

19 A Okay.

20 Q -- proceeding is IPR2023-00707. That does
21 appear to be --

22 THE REPORTER: Excuse me, is this Exhibit
23 1?

24 MR. ALEXANDER: Yeah. Let's mark this as
25 Exhibit 1, please.

1 THE REPORTER: Thank you. Sorry.

2 MR. KIKLIS: If I could jump in for a
3 second. I think we use the numbering of the exhibits
4 that's -- I mean, this is already in the case. So I
5 think we use this exhibit number, which is probably 102
6 (sic), I think.

7 MR. ALEXANDER: Well, you can --

8 MR. KIKLIS: You want --

9 MR. ALEXANDER: -- run your depositions
10 how you see fit, but we may have things that are not in
11 the -- in the proceeding. So --

12 MR. KIKLIS: Correct. Then you --

13 MR. ALEXANDER: -- this will be marked --

14 MR. KIKLIS: Right, but you would add --

15 MR. ALEXANDER: -- Exhibit 1 for this
16 deposition.

17 MR. KIKLIS: -- whatever number you were
18 at, you would add to it. That's what people typically
19 do. So if your last exhibit number up on P-TACTS is,
20 you know, 2054 or something, you'd start from there.
21 You can -- you know, I'm just telling you what people
22 normally do. But you know, do whatever you want.

23 MR. ALEXANDER: Thanks. We'll mark it as
24 Exhibit 1, please.

25 THE REPORTER: Okay.

1 (Exhibit 1 marked for identification.)

2 BY MR. ALEXANDER:

3 Q Okay. So Mr. Keller, this is the same copy of
4 the -- or this is a copy of the same declaration that
5 you have in front of you in hard copy regarding the 075
6 patent, correct?

7 A The top cover sheet looks that way. I cannot
8 verify the rest.

9 Q Okay. All right. Well, go ahead and take a
10 look at it, and tell me if you think you see any
11 differences. Because if you're going to use your hard
12 copy, then we need to understand if we're looking at the
13 same document or not.

14 A First impression is it does appear to be the
15 same.

16 Q Great. Now, your CV is attached as Appendix A
17 to this declaration. Could you turn to that? I believe
18 it's on page 140.

19 A Sure. I'm going to try to use my screen one
20 that you have here. I may have to go back to the paper
21 one if we're having difficulties. Yes, I'm there now.

22 Q Okay. So this says you've been an expert
23 witness in patent proceedings before; is that right?

24 A That is correct.

25 Q How many matters have you served as an expert

1 witness in?

2 A Somewhere around eight, maybe, give or take
3 several.

4 Q Were those all -- how many of those were IPR
5 proceedings?

6 A I do not recall. However, a minority of them.

7 Q I didn't catch the last part of your answer.
8 Could you repeat that?

9 A A minority of them.

10 Q I see. So a minority were IPR proceedings.
11 Does that mean the rest were patent infringement
12 proceedings in district court?

13 A I believe so.

14 Q Okay. Have you ever represented a patent
15 owner in patent infringement litigation, or served as an
16 expert witness for a patent owner in patent infringement
17 litigation?

18 A I have served as an expert witness for patent
19 owners.

20 Q Okay. Can you identify the matters on your CV
21 where you served as the expert witness for patent owners
22 in patent infringement litigation?

23 A On the first one -- let's see -- the Seiko
24 Epson versus Coretronics. Both sides were claiming
25 infringement and invalidation of opposing patents. So

1 in that very first one I was doing infringement and
2 invalidation expert witness.

3 Q Who did you -- who were you an expert witness
4 for in that matter?

5 A I think it was Seiko Epson.

6 Q You don't recall for sure?

7 A I do not recall.

8 Q Okay. I see from the case number; it looks
9 like that case was filed in 2006. So I take it that
10 that matter was some time ago?

11 A Yes.

12 Q Okay. Can you tell me any other matters
13 listed here on your CV where you represented a patent
14 owner?

15 MR. KIKLIS: Can I interrupt one second?
16 I'm sorry, Courtney, but your voice is breaking up a
17 little bit. I'm not sure what that was. So when it's
18 coming through the speaker here it's kind of, like,
19 breaking up, is what I'm saying. So maybe if you get a
20 little bit closer to your microphone.

21 THE WITNESS: State the question again.
22 It really did break up before.

23 BY MR. ALEXANDER:

24 Q Can you identify any other matters on your CV
25 where you've served as an expert witness for a patent

1 owner in litigation or an IPR proceeding?

2 A I do not remember on -- if I was representing
3 the patent owners or the ones that were defending it,
4 for these different patent cases, offhand.

5 Q Okay. Well, let's go down the list then. You
6 had already mentioned the first one. The next one you
7 were an expert witness in, SAIC versus Microsoft,
8 correct?

9 A That is correct.

10 Q Which party were you working for in that case?

11 A I do not remember which party I worked for.

12 Q That case settled in 2020?

13 A I believe so.

14 Q But you don't remember which party you worked
15 for?

16 A I do not remember which party I worked for.
17 Nor many of these do I know whatever happens with the
18 case at all.

19 Q Okay.

20 MR. KIKLIS: Can you give me one second,
21 Cortney? I'm going to move the speaker. It -- there's
22 some interruption with it. Maybe it's electromagnetic.
23 Let's try moving this over there. Is this the -- is
24 that the microphone?

25 THE WITNESS: That is my microphone,

1 yeah.

2 MR. KIKLIS: Okay. So move that
3 microphone closer to you, away from the speaker, and see
4 if --

5 THE WITNESS: All right.

6 MR. KIKLIS: -- that makes a difference.

7 Sorry, I just want to make sure that he's
8 able to hear you perfectly.

9 BY MR. ALEXANDER:

10 Q Okay. The next item in your CV says you were
11 an expert witness for MechSource; do you see that?

12 A Yes.

13 Q Okay. So that means that MechSource was the
14 party that you worked for, correct?

15 A I think so. I do not recall.

16 Q The next item is Polycom versus Fullview; do
17 you see that?

18 A I see that.

19 Q Do you know which of those parties you worked
20 for?

21 A I do not know. I do not remember which of
22 those parties that I worked for.

23 Q Did you prepare this CV?

24 A Yes.

25 Q So this item says the "Case is ongoing 2022."

1 A I believe that should be updated. I have not
2 heard anything from them. And now that we've just --
3 it's January of 2024, I should probably change that to
4 settled.

5 Q Okay. But this case was ongoing as of 2022,
6 correct, that's what you've written here?

7 A In 2022, my understanding was it was still
8 ongoing.

9 Q But you don't remember who you worked for in
10 2022?

11 A I do not.

12 Q Moving on to page 141, the first matter at the
13 top of that page refers to -- I'm not sure, to be
14 honest, what this is trying to communicate, but it says,
15 "Karl Storz-Endoscope." Do you see that?

16 A Yes, I do. And I'll help you understand that.
17 Karl Storz is the company, and the division of the
18 company is their endoscopy division.

19 Q Okay. Was this a -- do I take it that this
20 was a patent infringement litigation pending in Northern
21 District of California at the time you worked on it?

22 A I think it was an infringement one.

23 Q Okay. Did you represent the patent owner or
24 the defendant?

25 A I worked with Karl Storz, and if I remember

1 correctly, they were the patent owner.

2 Q Okay. The next one is Carestream versus
3 3Shape; do you see that?

4 A I do.

5 Q Did you -- who did you work with in that
6 matter?

7 A I do not remember which group I worked with.

8 Q All right. The next one doesn't appear to
9 list all parties, but it says you were an expert witness
10 for Axon Enterprises, correct?

11 A Correct.

12 Q Does that mean that Axon Enterprises is who
13 you were working for in that matter?

14 A I believe that does. I am not certain.

15 Q Do you know if Axon was the patent owner or
16 the defendant?

17 A I do not remember the details of that case.

18 Q Okay. The next three items, the final three
19 items, you -- it appears that you worked for GoPro,
20 Samsung, and Polycom in those matters. Do I understand
21 that correctly?

22 A That is my understanding too. And I do --

23 Q Okay.

24 A -- know for the first one, the GoPro, I was
25 definitely working for them.

1 Q Okay. Were they a defendant in patent
2 infringement litigation?

3 A They own the patents.

4 Q GoPro owned the patents?

5 A Yes.

6 Q Okay. Do you know where that litigation was
7 pending?

8 A Where? Location-wise?

9 Q Yeah, so on this one there's no identifying
10 information about the litigation. Just wondering how I
11 can locate that litigation to get more details about it.

12 A I do not -- it's possible I could go back
13 through my records and discover it, but I do not keep
14 documents of past cases.

15 Q Okay. Samsung, were they a defendant in the
16 patent litigation that you were working on?

17 A I do not remember much details about that
18 patent -- about that case, excuse me.

19 Q Okay. Do you know when that case was pending,
20 approximate timeframe when you were working on it, at
21 least?

22 A I wish I could be of more assistance right
23 here, but I do not recall.

24 Q How about the GoPro case, do you recall when
25 you were working on that?

1 A Just as a note, you were breaking up again a
2 little bit. But from what I heard; I can look
3 (indiscernible - audio disruption). Your question was,
4 on the GoPro case, do I recall who I was working on that
5 with?

6 Q When you were --

7 A Is that correct?

8 Q -- working on it. When you were working on
9 it.

10 A Okay. Possibly five years ago. I really
11 don't recall.

12 Q All right. The Polycom case was listed as
13 ongoing. Is it still ongoing?

14 A Now that it's 2024 it's probably not. I have
15 not heard anything from them recently.

16 Q Was Polycom the defendant or the patent owner
17 in that matter?

18 A I do not recall.

19 Q Are you on any medications that would affect
20 your ability to give full and complete testimony today?

21 A I've been fighting a cold, flu, or something
22 this week, and so I have been -- I took a Nyquil last
23 night. But I feel that I am awake enough and -- I -- my
24 mental capacity for doing this testimony today I feel is
25 fine.

1 Q I'm going to look back at page 1 of your CV,
2 and I'd like to understand a little more about your --
3 let's start with your educational background.

4 A Sure.

5 Q So you have an undergraduate degree in
6 mechanical engineering; is that right?

7 A From North Carolina State University. That is
8 correct.

9 Q And you have a master's in integrated
10 manufacturing systems engineering; is that right?

11 A That is correct.

12 Q Can you explain what that degree entails?

13 A It is a combination of multiple engineering
14 disciplines, of mechanical and industrial engineering
15 mostly. So a -- its effort is to make a better product
16 design with -- with very strong components. That can
17 also include packaging, items of that sort, where design
18 people would not get involved. It's a heavily
19 engineering based program.

20 Q Did you work in industry between your
21 bachelor's degree and your master's degree?

22 A I worked my way through college as -- let's
23 see -- at a place called Kamtech as a machinist, and a
24 programmer, and a programmer of the programmers.

25 Q Did you say a programmer of the programmers?

1 A Right. I wrote software to help self-program
2 or assist programming of the CNC machine centers that
3 existed at the time.

4 Q And I believe you said the business was called
5 Kamtech? Did I understand you correctly?

6 A That is correct. Starts with a K. K-A-M-T-E-
7 C-H, I believe.

8 Q What was the nature of Kamtech's business?

9 A They were a precision machining manufacturer.
10 A job shop, if you will.

11 Q You mean they did the precision machining, or
12 did they make the equipment to do precision machining?

13 A They did the precision machining for
14 customers. They bought the machines.

15 Q And did you work for Kamtech -- because
16 there's a -- what I'm trying to figure out is, there's a
17 six-year gap between your bachelor's degree and your
18 master's degree, correct?

19 A Oh, between bachelor's and master's? I'm
20 sorry.

21 Q That's right.

22 A If that was the question, during that time I
23 worked for a -- let's see -- give me a minute here to
24 look through these numbers here. When I graduated from
25 my master's degree at NC State, which would be 1988, I

1 then worked for a company called Matrix. They were
2 based in Raleigh, and they designed and built industrial
3 and semi-military computer systems. And I was hired on
4 as their mechanical engineer to design circuit boards,
5 the enclosures for them, do all the power designs,
6 things of that sort.

7 Q Okay. How long did you work for Matrix?

8 A I believe it was three years and nine months.

9 Q What did you do after you left Matrix?

10 A About a month later, or somewhere -- sometime
11 around that, then I started at UNC Chapel Hill Computer
12 Science Department as a research engineer.

13 Q And what were your duties at UNC in that role?

14 A In the Computer Science Department there were
15 the -- one of the top, if not the top, virtual reality
16 laboratory in the U.S., and they needed a mechanical
17 engineer to help design their systems and hardware, with
18 the professors and the students.

19 At that time there was very little hardware.
20 By that I mean, head mount displays, tracker systems,
21 tools, things of that nature, that were commercially
22 available for them to do research on, or demonstrate
23 different ideas upon.

24 So that laboratory required -- had the need to
25 make custom designs of things that had not existed. So

1 I was to work with the optical engineers, their chip
2 designers. Let's see. Designers, electrical engineers,
3 and students, and other professors, to design the
4 various platforms, tools, head mount displays, and other
5 items that were needed for the research in that
6 department.

7 Q Do you still work as a research engineer at
8 UNC?

9 A I do, as part-time, or adjunct, depends upon
10 phraseology they like to use at the different times. I
11 still have an office there that I use periodically.

12 Q You mentioned the word adjunct, I usually hear
13 that word in connection with adjunct professors who are
14 teaching. Do you have a teaching role at UNC?

15 A I do not have a teaching. That's why I had
16 mentioned, whatever terminology that they like to use at
17 the time can change.

18 Q Sure. What percentage of your time do you
19 devote to your work at UNC?

20 A It varies. This past year I probably went in
21 three or four times, total, to assist. This December I
22 was asked by a professor to assist with the optical
23 design of a -- of a very complicated optical system in.
24 And so I'll be putting in some more time there the next
25 few months.

1 Q So between -- I'm looking at your CV. So do I
2 understand correctly that from 1993 the three positions
3 that you've held are the research engineering position
4 at UNC that we've talked about, a position as senior
5 mechanical engineer at 3rdTech, and then your position
6 as the cofounder, mechanical engineering, and optical
7 director, and COO at InnerOptic Technology; is that
8 right?

9 A Those are my -- my biggest jobs during this
10 time, correct.

11 Q Are there jobs that are not listed on your CV?

12 A During this time, and I do not recall when it
13 started, I started up a company called Duval Research,
14 Incorporated, and that was a side business to assist
15 companies outside of these three that have requested my
16 expertise in different matters.

17 Q What sort of business was Duval Research
18 doing?

19 A Engineering assistance. As an example,
20 there's a -- there's a company in Raleigh that had some
21 military computer boards, circuit boards that go in
22 airplanes, and they needed them cooled, and to be -- to
23 take the vibration shock that would be needed in very
24 severe environments. And since I had a strong
25 background in that from my previous company at Matrix,

1 they hired me -- well, contracted me to help them out.

2 I have also worked with a head mount display
3 company in -- also in Raleigh, for design of their
4 integrated computer that was in the headset, that they
5 had thermal issues with. Even though they had a
6 mechanical engineer, he just did not have the experience
7 to -- to deal with this issue, so I was called in to
8 help resolve that.

9 I've also used Duval Research as my billing
10 center for when I help do the expert witness of my
11 engineering expertise.

12 Q Okay. I want to talk about your position at
13 3rdTech. Can you tell me what your role there was?

14 A Sure. 3rdTech had a few different products,
15 and basically, there's -- the person who started it had
16 started multiple companies before, and this is his
17 third, which is the reason for the name, and he worked
18 at UNC Chapel Hill for a short while and knew him from
19 industry.

20 He was very surprised by the amount of
21 technologies developed there that weren't being turned
22 into products. So he licensed different products, or
23 different ideas from them, whether they were patented or
24 not, from the university, and tried to make commercial
25 products out of it.

1 The two products that I remember that I worked
2 with with 3rdTech was one called the HiBall Tracker,
3 which we developed in the Computer Science Department.
4 And another one, I'm trying to remember the term, what
5 they called it, but what it was is a device that had a -
6 - it's an optical device, it had a laser range finder,
7 and it would scan a room fully, and you'd get a 3D
8 representation of that entire room. And you could move
9 that camera system and do another 3D scan of that entire
10 room, and in addition would also take high resolution
11 color imagery, so you could have a full -- fuller in-
12 depth mapped room, that's actually the way it's built.

13 That system is now used for crime scene
14 investigation. So -- and so after, normally, nasty
15 crimes, these systems, if a police group happens to have
16 some -- one of these, will bring it in, scan a room, and
17 they can use that for post-analysis of what happened.

18 Q Okay. Thank you.

19 And then, the last position listed on your CV
20 relates to your work at the company that you've
21 cofounded, InnerOptic Technology, correct?

22 A Correct. While in the Computer Science
23 Department, the director, or the head business person in
24 the department, asked if I -- well, kind of like the
25 3rdTech one, but he asked -- we have so many great

1 technologies here in the department, we need to
2 commercialize some. And he asked if I would be the one
3 willing to go to the -- the business school there have -
4 - they have a thing called Launching the Company series,
5 which are several classes to take, mini -- mini course,
6 mini curriculum, on how to take technologies and launch
7 them into companies, including financing and things that
8 way.

9 So I took those classes over a year, in
10 addition to working full time, and looked through the
11 different technologies that were developed in the
12 Computer Science Department, and proposed what I thought
13 were items, products, that could -- technologies that
14 could be turned into products that might be commercially
15 successful.

16 And so over a long period of time, I was
17 finally able to license some of this technology from
18 UNC, and then bring some people on board, and we started
19 making products.

20 The technologies we brought on board were head
21 mount display, augmented reality, needle tracking
22 medical imaging for surgeries, and biopsies, and
23 ablation. The first products that we sold were head
24 mount displays to research groups.

25 Over time we have been developing tracking and

1 3D visualizations to assist surgeons on -- excuse me --
2 to assist surgeons on placing ablation needles into the
3 tissues, deep down into the tissues, accurately, with
4 real-time ultrasound guidance. That has been licensed
5 to a company called Hologic for ovarian cysts. It's
6 also been licensed to Medtronic for liver cancers. And
7 there's other companies we're working with.

8 Me, personally, have also designed simulators,
9 and they're -- and training systems for these companies
10 for doing these particular procedures, and which
11 includes computer design, enclosure design, tracking,
12 going through -- let's see -- UL certification and
13 things of that nature.

14 We've also had to go through FDA approvals and
15 other types of regulatory approvals, through this
16 company.

17 Q Okay. Thanks. Oh, I'm sorry, I didn't mean
18 to cut you off if you were still going.

19 A I just wanted to ask you if that was
20 sufficient for what your question was.

21 Q Sure, that was a great overview. I appreciate
22 it.

23 Do you have any experience integrating
24 touchscreens into other products, including those
25 examples that you gave?

1 A For integrating touchscreens, work at UNC,
2 especially going further back in years, microdisplays,
3 or displays which are similar size to cell phones, were
4 kind of rare, especially trying to get high resolution.
5 So there's a company called Kopin which make 7-inch
6 diagonal 640 by 480 screens, and what happens for
7 virtual reality devices is that you're expanding a
8 screen into something very light, and you can see those
9 pixels. And it's -- basically looks either blurry or so
10 -- so jagged, you lose a lot of the -- the realism that
11 you're trying to show. It's really annoying.

12 And we experimented with devices that have
13 touchscreens, and basically, the designs were
14 substandard to what we were used to, mostly due to the
15 more resolutions, that when you start dividing the
16 screen into less than half the size, and also into a
17 format being -- since if you go sideways width, when we
18 put it up there, whether it's on a optical breadboard or
19 a handheld device when you make them you're taking what
20 is more of a natural widefield view.

21 Right now I'm looking at a 16 by 9 ratio
22 monitor here, 16 by 9 ratio monitor here, so if you take
23 that and shrink it down just to, say, 55 percent of the
24 image is vertical, it's just not a -- the perception
25 that you get out of that, even in a stereo mode, is

1 relatively poor, and so one tends not to pursue that.
2 It's a nice way to show something, show the technology,
3 but we wouldn't pursue it too much.

4 We've also used touchscreens, larger
5 touchscreens, for optical tests, also, again, for
6 testing their optics for head mounted device. I even
7 have -- I think one is still sitting in my downstairs
8 office, I'm going to do experiments with.

9 That answer your question, I hope?

10 Q Yeah, so I was just going to follow up and
11 ask, so does that describe all of the work that you've
12 done in integrating touchscreens into other products?

13 A No. The -- I mentioned Hologic and Medtronic.
14 I designed their simulators and their -- let's see, what
15 do you call it -- oh, their learning stations for the
16 doctors on how to use these systems. And in those I had
17 incorporated touchscreens in the systems for the users
18 to use, whether it's for touching buttons or sliding
19 something over, but we have integrated touchscreens into
20 those. So that's been done at my company, InnerOptic.

21 And then other uses on smaller ones at UNC on
22 multiple head mount display designs were built
23 previously. The reason for that is not so much that
24 this is the best technology, but because it was cheap
25 and available.

1 Q You're referring there, about the cheap and
2 available, to your work at UNC on head mount displays?

3 A That is correct. As far as displays go, when
4 these companies that are making millions of cell phones,
5 they're able to get much better prices versus some
6 companies only making several thousand of a display.
7 And so because of the availability of those, we
8 sometimes use these cell phones as test beds.

9 Q Okay. What type of touchscreens were those
10 cell phones that you were testing for use in head mount
11 displays?

12 A I do not recall what type, but at the time it
13 was basically resistive and capacitive, were the ones
14 that were the most prevalent. There was other styles of
15 the old ones, I'm -- not for the cell phones, but other
16 touchscreens were available at the time, larger
17 touchscreens, which were the infrared based ones, too.
18 I do not recall if we used that style.

19 Q Are there different types of capacitive
20 touchscreens?

21 A I'm certain that there's different nuances
22 between the different manufacturers.

23 Q As part of your work in testing cell phones
24 for use in head mount displays, did you have to
25 understand those different nuances that might exist

1 between different capacitive touchscreens?

2 A The nuances between different capacitive
3 touchscreens by the manufacturers, I do not recall there
4 being any significant differences. The big changes were
5 between, basically, the resistance style or capacitive.
6 Those required different input methods.

7 Q Could you describe that difference?

8 A One requires actually a pressure touch that
9 goes between the -- between the two films. In other
10 words, to actually make a electrical contact. And the
11 other capacitive deals with the capacitive change, the
12 electrical charge buildup between, you know, typically a
13 finger and that of the charge that is on the underside
14 of the screen itself.

15 Early on, the resistive ones were common, and
16 I think it might've been Apple, I do not remember
17 exactly if it was Apple or Google, I think it was Apple,
18 that made the resistive (sic) ones more popular by using
19 the two-finger method of touching, which the resistive
20 ones were not capable of discerning the two-finger touch
21 method.

22 Q Let me ask a clarifying question because I
23 think you may have used resistive -- I think you said
24 that resistives were -- resistive touchscreens were made
25 popular by using the finger method of touching --

1 A Oh, okay.

2 Q -- but then I think you also said the
3 resistive ones were not capable of discerning the two-
4 finger touch method.

5 A Thank you for noticing that. The capacitive
6 ones are the ones that can do the two-finger touch.

7 Q Got it.

8 A As far as use goes, they are much nicer.

9 Q What sort of touchscreens were you working on
10 for the work relating to Hologic and Medtronic?

11 A Let's see. I was working with one just last
12 week, and I do not recall. I don't think I know if it
13 was a resistive or capacitive one.

14 Q Okay. When you were describing your overall
15 work with touchscreens, I think you said something about
16 working with larger touchscreens for testing objects.
17 Do you recall what I'm talking about?

18 A Yes.

19 Q What sort of touchscreens were you working
20 with in that work?

21 A Back then, they probably were resistive ones.

22 Q I believe that first instance of working with
23 touchscreens that you described was when you were
24 talking about the microdisplays. I want to follow up
25 with a question about that because I didn't -- I didn't

1 fully track that.

2 Were the microdisplays that you said were
3 similar in size to cell phones, were those touchscreens?

4 A They were not. And you may have a
5 misunderstanding, or I didn't explain well enough.
6 Microdisplays typically are an inch size or under an
7 inch. The microdisplays that we used in several
8 different head mount display designs were, I believe, .7
9 or .84-inch diagonal. Kopin, K-O-P-I-N, was one of the
10 manufacturers. There's Microdisplay in Seattle, is also
11 another one. And those were not touchscreens.

12 Q Okay. Well, thank you for clarifying.
13 Because I did think you said something about similar in
14 size to cell phones, but I also understood you to say
15 they were .7 inches, which did seem pretty small to me.

16 So what work -- because you did mention that
17 in the context of touchscreens, so what did that work
18 have to do with the touchscreens?

19 A Most of the touchscreen efforts that I did
20 around this timeframe was, was on head mount displays,
21 and these were other types of displays that were
22 available, and were being used on head mount displays at
23 the time.

24 Q Got it.

25 A Okay.

1 Q On page 141 of your declaration, which is the
2 second page of your CV, you have a list of major
3 projects. Do you see that?

4 A Yes, I do.

5 Q And it's a pretty long list, I understand.
6 But could you look through that list and tell me which
7 of these involved touchscreens?

8 A Let's look at the first one, head mounted
9 displays, designer and co-designer, at least 15 HMDs,
10 optical see-throughs. Through this is where we used,
11 basically, different LCDs, other types of displays that
12 we could find. If you notice, there's even CRTs there.
13 We paid Medtronics to make 1-inch -- approximately
14 1-inch color displays with CRTs that you stuck in front
15 of your eyes, and that was called a snail bite
16 (phonetic).

17 We experimented with any display that we could
18 early on. They were rare. As we're looking at right
19 now, most displays are much larger, people like to watch
20 TV. Not many people are going to watch TV on 2-inch
21 screen.

22 And a lot of the screens were available that
23 were in the 2-inch range, or such, were very low
24 resolution, that were not adequate to be able to expand
25 into a virtual reality system.

1 When higher-ends, or I should just say, newer
2 head mount -- newer cell phones, and those type of
3 devices got to be accepted, the quality of displays
4 improved much more rapidly than microdisplays and low
5 quantity industries that we're used to, so we lean
6 towards some of these displays in camera -- or in cell
7 phones that were available, we'd use. Even though they
8 weren't optimized for what we wanted.

9 We built multiple head mount displays,
10 multiple optical test systems, including, as -- as I
11 mentioned previously, on optical breadboards, and stuff,
12 to prove the concept, and determine how we can make the
13 imagery appear better, whether we had to -- could do
14 anti-aliasing or things that way.

15 Some of the issues for us at the time, the
16 processing power in these phones was not anywhere near
17 what it is currently. And so a lot of the computer
18 graphics sheets, or whatever you want to call it, that
19 we could use on a full-size computer were not possible
20 on these phone systems.

21 Does that answer your question?

22 Q Well, I was asking specifically about
23 touchscreens, and I think a lot of what you described is
24 probably not touchscreens, but then --

25 A Okay.

1 Q -- I think toward the end, if I understood
2 correctly, you mentioned the cell phones that you were
3 experimenting with. Would that be the primary use of
4 touchscreens in this first item relating to head mounted
5 displays?

6 A For head mounted displays the primary use of
7 touchscreens were on the available cell phones. That is
8 correct.

9 Q And you have -- I mean, this item covers 1993
10 through the present; is that correct?

11 A That's correct.

12 Q When did you start experimenting with cell
13 phones for use in head mounted displays?

14 A I do not know the exact year. Basically, we
15 would start using any small display that we could get
16 our hands on at the time. We did not design small
17 displays in our lab, or labs, at all. We purchased them
18 from other vendors, whether they be open display tech,
19 or we'd take them out of other devices.

20 We -- we would take a cell phone and strip out
21 a display from it, to try to use in a head mount display
22 setup, to see how well it could work. We would strip
23 out LCD shutters from projectors, in order to have a
24 display, a microdisplay, to test our optic systems for
25 head mounts, head mount display designs, or such as

1 that. I do not know the years that we started using
2 them.

3 Q Now, I believe you mentioned that many of the
4 cell phones that you tested did not have sufficient
5 processing power for the use that you were intending it
6 for; did I understand that correctly?

7 A One of the difficulties back then was the 3D
8 generation of imagery. So for virtual reality or
9 augmented reality, and we actually designed our own
10 custom computer hardware, ones called Pixel-Planes,
11 Pixel-Planes 4, Pixel-Planes 5, and worked heavily for
12 several years on one called PixelFlow. These were
13 graphic supercomputers.

14 The difficulty is, we had to take the image
15 generation from those graphics and supercomputers and
16 put it into these displays, whether they be cell phone
17 interfaces or direct interface into a small LCD or
18 microdisplay, and have minimal lag.

19 One of the issues that I'm sure you're aware
20 of with head mount displays is if there is lag, which we
21 call it swimming, it can make one basically get an upset
22 tummy, if things don't happen the way that you want it
23 to work. And lag is a big issue of that. Trying to get
24 a cell phone to talk to the display quickly is -- was a
25 problem.

1 Q Did you experience -- I'm sorry -- did you
2 experiment with any cell phones that you did find
3 sufficient for your purposes?

4 A Offhand, I don't recall any that were great.
5 But I may just be forgetting about that too. The
6 biggest issue that I remember, from my point of view,
7 was the resolutions and the jaggiess of the images of
8 the handheld cell phone based optics of a head mount
9 display were subpar compared to others.

10 Q And I believe you mentioned that some of the
11 cell phones that you experimented with were resistive
12 touchscreens; is that right?

13 A I believe they were.

14 Q And some were capacitive touchscreens,
15 correct?

16 A I believe they were too.

17 Q By 2014 do you know whether resistive
18 touchscreens continued to be commonly used in cell
19 phones?

20 A Resistive touchscreens are a lower cost type
21 display archetype input device than the capacitive. My
22 recollection is when Apple put in their operating system
23 the two-finger touch that -- that, basically, that --
24 lot of people excited, and were willing to pay more for
25 these higher end phones with the capacitive touch. And

1 so resistive touch become -- began to be regulate -- reg
2 -- began to be used on lower end cell phones.

3 Q Do you recall the timeframe in which that took
4 place?

5 A Not really.

6 Q When that change toward capacitive
7 touchscreens in cell phones took place, and resistive
8 touchscreens were used in lower end cell phones, would
9 those lower end cell phones also have less processing
10 power than the higher end phones that used capacitive
11 touchscreens?

12 A Possibly so.

13 Q But you don't really know one way or the
14 other?

15 A I don't have any data to go by that. That is
16 just a -- a guess. A lower priced phone, they might try
17 to be cheaper on other items in the phone itself.

18 Q Is that typically how it works, in your
19 experience?

20 A I don't design those phones, so I'm not quite
21 sure of the question.

22 Q You don't know whether phones with lower cost
23 touchscreens also tend to have lower processing power?

24 MR. KIKLIS: Objection. Scope.

25 THE WITNESS: One can only guess that a

1 lower priced phone would be cost optimized.

2 BY MR. ALEXANDER:

3 Q And, therefore, would probably have lower
4 processing power?

5 A Possibly.

6 MR. KIKLIS: Objection. Scope. Vague.

7 BY MR. ALEXANDER:

8 Q In your work with the head mounted displays,
9 have you ever implemented remote touch on a touchscreen?

10 A Explain what you mean.

11 Q Using something other than a -- well, so let's
12 just talk -- in a touchscreen often it is a user
13 interacts with the touchscreen by touching it with the
14 user's finger, correct?

15 A User reacts -- state that again, please.

16 Q Sure. I'll come at it from a different angle.

17 A Got you. Thank you.

18 Q You said that you've experimented with using
19 touchscreens and head mounted displays, correct?

20 A Correct.

21 Q In the displays that you were working with,
22 how would a user interact with the touchscreen?

23 A On the prototype bench one would probably
24 reach right in with a finger when necessary. On a head
25 mount display we had multiple different ways we tried to

1 attack that problem, and -- let's try to think. The
2 simplest way, of course, would be you reach in with your
3 finger and stick it up in through the bottom. Then we
4 had other methods that we would touch those screens
5 with. Wish I recalled.

6 Q Okay. So you don't recall any of the ways
7 that a user would interact with a touchscreen and a head
8 mounted display, other than by reaching in with the
9 finger?

10 A We had some different mechanisms that were
11 stuck in there, but I truly don't remember what we did.
12 Because the -- the display quality of the cell phones
13 was never quite satisfactory, so we would just not put
14 much effort into trying to make a mechanism to improve
15 an inferior design.

16 Q Inferior in what sense?

17 A Optical image quality and lag.

18 Q But you don't remember anything about the
19 mechanisms that you experimented with to interact with a
20 touchscreen, other than the user's finger?

21 A I'm really trying to recall what was used at
22 the time. And I'm just not coming up with what we did.
23 As I --

24 Q Okay.

25 A -- stated just previously, they were not great

1 display systems for a head mount display, and it just
2 did not seem worth our time, or any of the researchers'
3 or students' time, to put a whole lot of effort into
4 making a poor design better, that's never going to be
5 able to compete against a good design to start with. I
6 truly do not remember what we did.

7 Q Okay. In your declaration, you say that
8 you're being compensated in these matters at your
9 standard hourly rate. What is that rate?

10 A That is 350 an hour.

11 MR. ALEXANDER: We've been going a little
12 over an hour. We usually take breaks every hour or so.
13 I think now would be a good time for, say, a 10-minute
14 break. Does that work for you?

15 THE WITNESS: Sure.

16 THE REPORTER: Okay. I will take us off
17 the record. We are now off the record. It is 10:43
18 a.m. Eastern Standard Time.

19 (Off the record.)

20 THE REPORTER: We are back on the record.
21 It is 10:56 a.m. Eastern Standard Time.

22 You may continue.

23 BY MR. ALEXANDER:

24 Q Mr. Keller, you explained earlier a little bit
25 about how a resistive touchscreen works, and you also

1 touched on a capacitive touchscreen. I want to dig into
2 that in a little more detail, particularly as it relates
3 to capacitive touchscreens. Are you familiar with the
4 term, surface capacitive touchscreen?

5 A Yeah, to a general extent.

6 Q Did you say you are familiar with surface
7 capacitive touchscreens?

8 A I'm more familiar with the capacitive
9 touchscreens where the capacitive sensors are under the
10 screen. As actually --

11 Q Okay.

12 A -- is in my declarations.

13 Q Well, let me ask you, so is there a term for
14 the type of capacitive touchscreen you're referring to,
15 that you say you're more familiar with, I mean?

16 A May I refer to my document? Any of these
17 declarations?

18 Q Sure.

19 A All right. The one I've got in front of is
20 the 075.

21 Q Great.

22 A All right. I guess it's -- I don't know the
23 different terms for the different types of capacitive --
24 capacitive touchscreens. They're normally included in
25 the displays that we use that have them.

1 Q Okay. So I do understand that you said that
2 you're familiar, it sounds like, with certain types of
3 capacitive touchscreens than surface capacitive
4 touchscreens, specifically, but can you tell me what
5 your understanding is of how surface capacitive
6 touchscreens work?

7 A I --

8 MR. KIKLIS: Objection. Scope.

9 THE WITNESS: I know how the capacitive
10 touchscreens that I'm used to using work. So the exact
11 -- what the type is termed, I don't know. Nor do I
12 state in the declaration a different type of capacitive
13 touchscreen.

14 But would you like me to read what I have
15 here in the declaration, which explains more succinctly
16 than I can do just coming out of my head at the moment?

17 BY MR. ALEXANDER:

18 Q Well, I'd like to understand what -- I'd like
19 to ask my questions, rather than -- I've read your
20 declaration, so I don't need you to just read that,
21 though I appreciate the offer.

22 So do I understand correctly that you're not
23 familiar with how a surface capacitive touchscreen
24 works?

25 MR. KIKLIS: Objection. Scope.

1 THE WITNESS: I don't design them, I use
2 them.

3 BY MR. ALEXANDER:

4 Q Okay. In what contexts have you used surface
5 capacitive touchscreens?

6 A In both --

7 MR. KIKLIS: Objection. Scope.

8 THE WITNESS: In both user-including cell
9 phones, as I'm sure you have too, and also in the
10 implementation of them in putting them in head mount
11 displays and other optical design systems.

12 BY MR. ALEXANDER:

13 Q Okay. What cell phones are you aware of that
14 have used surface capacitive touchscreens?

15 MR. KIKLIS: Objection. Scope.

16 THE WITNESS: Again, the term surface
17 capacitive touchscreen, I don't know the term for it,
18 other than I know the term capacitive touchscreen. So
19 I'm not sure where the -- where you're coming up with
20 that from. But if that's what you like to call them, we
21 can call them that.

22 Your question is what cell phones, you
23 mean companies, or models, or such? Is that the
24 question?

25 BY MR. ALEXANDER:

1 Q Yeah, I was -- I probably had more models in
2 mind, but we could speak in terms of companies as well
3 to start with. So yes, I was asking if you're aware
4 because you had mentioned -- I understood your testimony
5 to be that you had used cell phones with surface
6 capacitive touchscreens, so assuming I understood you
7 correctly, I was asking you what cell phones you've used
8 that utilized a surface capacitive touchscreen?

9 MR. KIKLIS: Objection. Scope.

10 THE WITNESS: I want to rephrase your
11 question if it's okay. I have used cell phones that
12 have capacitive touchscreens. And the ones that we used
13 on the head mount displays, I do not recall any of the
14 model numbers, but I do know that current phones, like
15 Google Pixel 4. Many of the Apple phones that use the
16 two-finger touch. I can't recall the particular numbers
17 on the different ones, but it's more common now.

18 MR. KIKLIS: Just note to the court
19 reporter, my objections are coming under Kurtis Keller's
20 testimony. You're catching them, but it's coming under
21 his name.

22 THE REPORTER: Okay. I'll put a notation
23 for that.

24 MR. KIKLIS: Okay. Thank you.

25 BY MR. ALEXANDER:

1 Q So Mr. Keller, when you referred to the Google
2 Pixel 4 and the Apple iPhones, are you saying they use
3 capacitive touchscreens or are you saying they use
4 surface capacitive touchscreens specifically?

5 MR. KIKLIS: Objection. Scope.

6 THE WITNESS: My understanding is they're
7 capacitive touchscreens. What type, any of the details
8 of how those capacitive touchscreens work, in addition
9 that they work capacitively, I am not familiar nor have
10 I looked into it. I don't have any opinion.

11 BY MR. ALEXANDER:

12 Q Are you familiar with the term projected
13 capacitive touchscreen?

14 MR. KIKLIS: Objection. Scope.

15 THE WITNESS: It is not coming to me now.

16 BY MR. ALEXANDER:

17 Q Are you able to explain the differences in how
18 a projected capacitive touchscreen works versus a
19 surface capacitive touchscreen?

20 MR. KIKLIS: Objection. Scope.

21 THE WITNESS: I have not looked into what
22 a projected capacitive touchscreen is, nor specifically
23 looked into -- what did you call that -- to whatever the
24 other term is, basically. I would not be able to define
25 the difference between them currently, if there if there

1 is any.

2 MR. ALEXANDER: I'm going to close on the
3 screen your declaration for a moment. I'm going to --
4 if you give me a moment, I'm going to put up a different
5 exhibit. All right. Could we get this marked as
6 Exhibit 2, please?

7 (Exhibit 2 marked for identification.)

8 BY MR. ALEXANDER:

9 Q Okay. Mr. Keller, do you see Exhibit 2 on
10 your screen?

11 A The certification of translation authority --
12 accuracy? Excuse me.

13 Q Yes, that's right. And so that's the first
14 page. If you see this, this was Google's Exhibit 1003
15 in the proceeding regarding the 075 patent. I believe
16 this is one of the documents that you said you have it
17 in front of you in paper copy.

18 A Yes.

19 Q So this is a translation of the Kondo
20 reference, correct?

21 A That is correct.

22 Q You've read this reference?

23 A I believe so. Let me look through this one,
24 just to make sure. First appearances, it appears it's
25 the same one.

1 Q You've read the Kondo reference before,
2 correct?

3 A I read the Kondo reference. I may have an
4 issue with this reference. I have --

5 Q Go ahead.

6 A This one has Dwaine Palmer certificate of
7 accuracy, and my version here has someone named Alex Jo
8 as the certificate translation accuracy, my cover sheet.
9 We may not have the same version here. I'm trying to
10 peer through here to see. I do not understand why they
11 are different.

12 Q So can you describe the certificate of
13 accuracy on the paper copy that's in front of you?

14 A Certificate of accuracy is -- I'm going to
15 first show you. Here. And it says, "I, Alex Jo,
16 declare, as a professional reviewer, coordinator,
17 specializing in translation of Chinese, Japanese, and
18 Korean to English, 25 years experience certifies," or he
19 certifies, "that the following Japanese to English
20 translation of the corresponding source text is true and
21 correct to the best of knowledge and ability." This was
22 done the 20th of October 2022. So what you have is a
23 newer version than what I have.

24 Q Okay. Well, that's interesting. What is page
25 2 of the document that you're looking at?

1 A Page 2 of the document appears to be
2 identical. Let's see if I can get the light right for
3 you. Cover sheet appears to be the same.

4 Q Hold on one second, if you don't mind. You
5 can put that down for a minute, but I am going to ask
6 you to hold it back up for a minute, because I need to
7 navigate a little bit on my screen, to make some more
8 room for your picture.

9 Okay. Yeah, if you wouldn't mind holding that
10 up again for me to see, I'd appreciate it.

11 A Let's see. There you go.

12 Q Okay. All right. Well, is there any type in
13 the lower righthand corner of the document you're
14 looking at?

15 A No, there is not.

16 Q And I -- if you look at what I put on the
17 screen, there's -- the type is "Google Exhibit 1003,"
18 and then it has the page number.

19 A Yeah. I do not have that on this.

20 MR. ALEXANDER: All right. Well, Mike,
21 I'd like to request that you send me a copy of whatever
22 it is that the witness is looking at, as it relates to
23 the Kondo reference.

24 MR. KIKLIS: Well, I can tell you,
25 they're identical. The only difference between the two

1 is the certificate of translation. I'll make the
2 representation to you.

3 MR. ALEXANDER: Well, I do --

4 MR. KIKLIS: So --

5 MR. ALEXANDER: -- appreciate the
6 representation, but I think I'm entitled -- the witness
7 has a document in front of him that, you know, he
8 intended to rely on for his deposition, so I think I'm
9 entitled to have what the witness is looking at.

10 MR. KIKLIS: Sure. I'll send it to you.

11 MR. ALEXANDER: Great.

12 THE WITNESS: Cortney, I am going through
13 these, looking at the different sections, and they do
14 appear to be absolutely identical on first pass here.

15 MR. ALEXANDER: Okay. Well, I'll
16 definitely look forward to receiving what you have from
17 your counsel, but let's proceed for the moment.

18 BY MR. ALEXANDER:

19 Q Can we look at page -- not page -- paragraph
20 12, for example. I would like to start with -- let's
21 look at paragraph 12 of the Kondo reference. This is on
22 page 5 of the PDF.

23 A Okay.

24 Q Or I presume page 5 of the paper copy that
25 you're looking at, as well.

1 A All right. All right.

2 Q All right. So this -- it says, "According to
3 the fifth aspect, the same effect as in the fourth
4 aspect can be obtained, and static electricity can be
5 prevented from building up on the exterior, preventing
6 malfunction of the remote touch circuit." Do you see
7 that?

8 A I see that.

9 Q Do you know why Kondo is interested in
10 preventing static electricity from building up on the
11 exterior?

12 A Let's go back. Let me get the whole context
13 of what he's saying here.

14 Q Sure.

15 A Mean -- so, "Means for solving the problem."
16 Let me review what we got. I'm going to start here at,
17 I guess, paragraph 5.

18 All right. Your question, again, is? What
19 was your question, Courtney?

20 Q Do you know why Kondo is interested in
21 preventing static electricity from building up on the
22 exterior?

23 A I can only, basically, guess different
24 reasons. If he has too much static, one could arc,
25 possibly, across into the circuitry which touches the

1 capacitive touchscreen.

2 Q Okay. You said, "guess different reasons."

3 Were there other reasons that you --

4 A Well, it's --

5 Q -- that you were considering?

6 A -- it's -- it's always good to look at -- I'm
7 getting an echo here.

8 MR. KIKLIS: Try this.

9 THE WITNESS: Is that better? It's
10 always good to look at why somebody wouldn't do
11 something, and since I don't see any active circuitry
12 there, which is normally the reason that you're trying
13 to get rid of static electricity in electronic items,
14 because you can zap them or short them, the aspect that
15 I'm left with is he is fearful or wants to protect the
16 touchscreen on the cell phone itself.

17 Again, since I wasn't there when he was
18 coming up with this, I'm making assumptions right now
19 that I have not opined on previously. There may be --

20 MR. ALEXANDER: Okay. Let's move --

21 THE WITNESS: -- other reasons.

22 MR. ALEXANDER: I'm sorry. I didn't mean
23 to cut you off. Finish your answer.

24 THE WITNESS: All right. There may be
25 other reasons that are more important or less important

1 that I come up with in the future. But offhand, since I
2 have not looked at this, considered this before, this is
3 my current answer.

4 BY MR. ALEXANDER:

5 Q Okay. Let's look at paragraph 36, please.
6 Here it says that, "The holding side ground circuit part
7 48 is a static electricity diffusion film attached to
8 the inner surface of the recessed part 43." Do you see
9 that?

10 A I -- I see that. I'm going to open up my
11 paper copy, so I can look where these numbers are here.

12 Q Sure.

13 A So I have -- I have both a paper copy and your
14 electronic version up here right now. Okay. Okay. I
15 have found item 48.

16 Q Do you understand what the purpose of item 48
17 is in Kondo?

18 A It appears there to spread the electrical
19 charge from the device to the case. If there's a
20 difference.

21 Q Do you know why -- okay.

22 Do you know why Kondo wants to spread the
23 electrical charge from the device to the case?

24 A In order to make a signal you need to have a
25 difference in electrical potential. Let's see. As I

1 mentioned, looks like it's to remove electrical charge
2 from the Smartphone to the device.

3 And, as it states at the end of this
4 paragraph, "remove the static electricity from the main
5 body of the Smartphone 1500 via the device holding
6 plate."

7 Q So your understanding is that item 48 is
8 intended to remove static electricity from the main body
9 of the Smartphone?

10 A That is my understanding. Yes.

11 Q Let's move forward to paragraph 39. Are you
12 with me?

13 A Yeah. Sure.

14 Q Okay. The second sentence of this paragraph
15 says, "The electrical wire part 72 is formed by sealing
16 conductive lines 74, formed of a material that is
17 conductive or dissipates that electricity on a flexible
18 sheet 73, formed of antistatic material with excellent
19 bending properties." Do you see that sentence?

20 A I see the sentences.

21 Q Do you know why Kondo wants to dissipate
22 static electricity on flexible sheet 73?

23 A Let me read here. Figure 9. Let me see what
24 that -- well if he's trying to -- again, I did not write
25 this patent -- if he's trying to dissipate static

1 electricity from the cell phone to the housing, I
2 imagine he's trying to reduce the potential voltage
3 difference between the two.

4 Q Do you know why he would want to try to reduce
5 the potential voltage difference between the two?

6 A Possibly to make -- I'm getting that echo
7 again. Possibly to make the contacts, the touch
8 contacts, respond better.

9 Q So you say possibly, but do I take it that
10 you're not sure why he is trying to reduce that
11 potential voltage difference?

12 A Offhand, I -- electronics don't like static
13 electricity, it can cause damage. But the full reason
14 that he is doing this, I am not certain, because the
15 touchscreen technologies are very resilient to static
16 electricity.

17 So my guess, educated guess, is to try to
18 bring the cell phone to the same potential as the case,
19 or similar potential. But I am not certain exactly why
20 he's doing that. It was not an issue that I've come
21 across in these devices before.

22 Q Let's look at paragraph 48 of Kondo. Go ahead
23 and read that to yourself and let me know when you've
24 had a chance to do that.

25 A Okay.

1 Q Were you able to read paragraph 48?

2 A I am. I am also looking at the diagram on the
3 same -- just on the same patent here. All right. I
4 have read.

5 Q Okay. I want to focus on the last sentence of
6 paragraph 48, which says, "Therefore, the touch panel
7 1506 can detect a current value corresponding to this
8 impedance and recognize that a touch operation has been
9 performed at the virtual buttons positions W31 to W34."
10 Do you see that sentence?

11 A I do.

12 Q Do you know if this accurately describes the
13 operation of a surface capacitive touchscreen?

14 A I --

15 MR. KIKLIS: Objection. Scope.

16 THE WITNESS: I read this too, and it may
17 not be a perfectly accurate description, because what
18 we're looking at is a changing of difference in voltage.
19 The current for a capacitive touchscreen is
20 extraordinarily low.

21 I'm sorry. Did that answer your
22 question?

23 MR. ALEXANDER: Well, let me try it
24 again. I'll ask a different question, maybe I'll come
25 at it from a different angle.

1 BY MR. ALEXANDER:

2 Q Do you know if this sentence accurately
3 describes the operation of a projected capacitive
4 touchscreen?

5 MR. KIKLIS: Objection. Scope.

6 THE WITNESS: As I mentioned previously,
7 I am not familiar with the different terms of the
8 different capacitive touchscreens, just the general
9 capacitive touchscreen technology. And most are looking
10 for a -- a different voltage, whether be higher or
11 lower. They are not current inducing, or significant
12 current reduce -- inducing technologies.

13 BY MR. ALEXANDER:

14 Q Okay. Appreciate that answer. Do I
15 understand that you're -- you don't know if this
16 accurately describes the operation of a projected
17 capacitive touchscreen?

18 MR. KIKLIS: Objection. Scope. Asked
19 and answered.

20 THE WITNESS: Again, as I mentioned, the
21 terminology that you're using of projected capacitive, I
22 don't have a definition here, but general capacitive
23 touchscreens, does this sentence describe that
24 perfectly? Not perfectly.

25 BY MR. ALEXANDER:

1 Q Okay. What would be the imperfection in the
2 description?

3 MR. KIKLIS: Objection. Scope.

4 THE WITNESS: Capacitive touchscreens are
5 working from a voltage difference, typically. That does
6 not mean that there's --

7 MR. ALEXANDER: (Indiscernible -
8 simultaneous speech) -- I'm sorry. You can finish your
9 answer.

10 THE WITNESS: That does not mean that
11 there's other methods that I'm not familiar with. But
12 typically they're going by the different potentials,
13 potential voltage of the -- well, of the apparatus and
14 person.

15 BY MR. ALEXANDER:

16 Q Okay. Do you know if this last sentence in
17 paragraph 48 accurately describes the operation of a
18 surface capacitive touchscreen?

19 MR. KIKLIS: Objection. Scope.

20 THE WITNESS: You also broke up fairly
21 bad. Could you just -- you can state the exact same
22 thing again.

23 BY MR. ALEXANDER:

24 Q Sure. Do you know if this last sentence of
25 paragraph 48 accurately describes the operation of a

1 surface capacitive touchscreen?

2 MR. KIKLIS: Objection. Scope.

3 THE WITNESS: Strangely, you broke up
4 again, and I'm trying to see if I can read it through
5 the speech-to-text part here.

6 No, your two different ones say something
7 very different. All right. Give it one more try, let's
8 see what happens.

9 BY MR. ALEXANDER:

10 Q Do you know if the last sentence of Kondo
11 paragraph 48 accurately describes the operation of a
12 surface capacitive touchscreen?

13 MR. KIKLIS: Objection. Scope.

14 THE WITNESS: Again, I have not dealt
15 into the details exactly how these go, but my
16 understanding of their operation is sensitivity due to a
17 change in voltage -- difference, excuse me, of voltage.

18 I don't know if I answered that to your
19 liking. Two things. Basically, we're transferring a
20 charge. And I also noted that your audio, when it went
21 bad, might happen to be a internet connection issue,
22 just as a note.

23 BY MR. ALEXANDER:

24 Q Let's look at paragraph 47 of Kondo, please.
25 Please go ahead and read that to yourself, and let me

1 know when you've finished.

2 A Okay.

3 Q This passage references a body side -- I'm
4 sorry -- I guess a main body side ground circuit 80. Do
5 you see that?

6 A Main body side. Yes, I do.

7 Q Do you understand the purpose of that element
8 in Kondo?

9 A I think I do.

10 Q Okay. Can you describe that for me, please?

11 A It appears that they're trying to have the
12 part of the body, as they have pointed here in Figure
13 10, F2, be considered a ground, and bring the cell phone
14 to that same potential.

15 Q So would it be accurate to say that element 80
16 is intended to provide a reference ground for the
17 touchscreen?

18 A I don't know about a reference ground, but it
19 appears to be trying to bring it to one part of the body
20 potential, voltage potential.

21 Q Do you know how high the total impedance was
22 between Kondo's button and the conductive pad that
23 touches the touchscreen?

24 A The -- the impedance in ohms, or something
25 like that? Is that what you're asking?

1 Q Sure, yeah, that's a fine unit.

2 A I -- I do not know what it would be. Nor have
3 I looked it up.

4 Q I want to follow up on paragraph 47 for a
5 second, of Kondo, to make sure I understand what you're
6 describing here. So do you see in Kondo, in paragraph
7 47, it says, "When the holding part 4 is closed, the
8 main body of the Smartphone 1500 is electrically
9 conductively connected and grounded to the human body,
10 the user, through the device holding plate 44, holding
11 side ground circuit 48, and attachment main body side
12 ground circuit 80."

13 Do you --

14 A I see that.

15 Q Do you see that?

16 A I see that.

17 Q Do you understand that this, what's being
18 described here, provides an electrically conductive path
19 between the user's hand and conductive plate 44 of
20 Kondo?

21 A User's hand. Just reading what you said here,
22 to make sure I got that right.

23 Could you state that again? It looks like the
24 translation came up incorrect.

25 Q Okay. Is Kondo describing an electrically

1 conductive path between the user's hand and conductive
2 plate 44?

3 A It appears, through the diagram, that it is
4 attempted to be grounded through that lower finger F2 to
5 44, if that answers the question.

6 Q Which diagram are you looking at, to make sure
7 that I'm looking at the same thing that you are?

8 A Figure 10, as in -- as stated in paragraph 47.

9 Q Got it. Okay. So let me look back at your
10 answer. So you referenced finger F2, correct?

11 A Correct.

12 Q And you said that, if I understand correctly,
13 you said that the diagram is showing that there's an
14 attempt to -- I think you said for it to be grounded
15 through lower finger F2; is that correct?

16 A It appears that lower finger F2, as shown in
17 Figure 10, is attempting to equalize the voltage between
18 F2 and item 44, or -- let me make sure 44 is the correct
19 one, I want to -- let's see here. Holding device plate
20 (sic). Yes. 40 -- what is 48. (Reading to self.) 48.

21 Q Have you finished your answer, Mr. Keller? It
22 was not clear if you were still looking at the --

23 A Oh, oh, I -- I believe I did. I'm sorry. I
24 was waiting on you.

25 Q Okay. Great. So do you understand why Kondo

1 is attempting to create a ground through the finger F2?

2 A I am not fully certain why he was trying to
3 create the ground through there, where there's
4 protection of the circuitry. But in my experience,
5 these capacitive touchscreens do not need a continuous -
6 - continuous electrical path, because you're basically
7 discharging a voltage charge. It's a very small amount.
8 We're not trying to create a -- a long-lasting current.
9 Each one of us can sit here right now and pull out a
10 cell phone and -- and show that's not necessary.

11 Q Can we look at paragraph 52 of Kondo, please?

12 A Sure.

13 Q You can go ahead and read that paragraph. Let
14 me know when you've had a chance to do that.

15 A Where does he describe what item 9 is?

16 Q Sorry, I didn't catch that.

17 A Oh, sorry. I was looking to see where he
18 defines item 9 in there.

19 Q I don't -- I don't see a reference to item 9
20 in paragraph 52. I just want to make sure we're -- that
21 I didn't direct you to the wrong paragraph.

22 A Oh, I'm on 52. I've read it.

23 Q Okay. Great.

24 A Yes.

25 Q Okay. So in this paragraph, it says that

1 button 77 could be configured to connect to a capacitive
2 element instead of the human body, correct?

3 A That's what it seems to be.

4 Q Okay. Why would -- why would Kondo need this
5 capacitive element in this embodiment?

6 A In this modified example 1, as he states it
7 here, that if somebody is wearing gloves or -- or
8 something similar, that you'd still be able to use the
9 system effectively.

10 Q Why would the capacitive element be necessary
11 to use the system if the user was wearing gloves?

12 A As you're aware, the capacitive circuits tend
13 to build up their own static charge, and by charting
14 across that to continue a circuit, the -- that voltage
15 difference that gets built up would then be discharged
16 upon the screen, would be my understanding here.

17 Q Different angle. If a user was wearing
18 gloves, would the capacitive element be necessary for
19 the touchscreen to recognize a touch event?

20 A Most likely so.

21 Q Why is that?

22 A If there is a large circuit -- put these
23 glasses back on so I can give you a number -- but if
24 there is a lot of large -- I don't want to say copper --
25 sheeting between that and the touch screen, the built up

1 electrostatic potential energy would be high enough that
2 you might not need to use a capacitive one.

3 But from what we see here, the circuitry that
4 is used for the number 9 and the -- what do they call it
5 -- well, basically for the continuation of the circuit
6 that goes through here, should be able to build up
7 enough potential difference that when the capacitor gets
8 shorted, it is going to dump all of its charge, that the
9 capacitive touchscreen will then see that.

10 Q Okay. Well, what would happen if the user was
11 wearing gloves and the capacitive element was not
12 included in the system?

13 A It possibly might not function.

14 Q Why not?

15 A There's not a direct -- direct electrical path
16 between the fingertip and the electrical circuit that is
17 on the structure. Now, that's dependent upon if the
18 glove is not electrically conductive.

19 Q Why does it matter if there's a direct
20 electrical path between the fingertip and the electrical
21 circuit that is on the structure?

22 A Does it matter how? I do not understand the
23 question.

24 Q You said, in response to my question, what
25 would happen if the user was wearing gloves and the

1 capacitive element was not included in the system, and
2 you responded to that by saying that there wouldn't be a
3 direct electrical path between the fingertip and the
4 electrical circuit that is on the structure.

5 And so I was following up on your answer to
6 ask, why does it matter if there is a direct electrical
7 path between the fingertip and the electrical circuit on
8 the structure?

9 A Oh. That is to be able to conduct the
10 electrical charge through to the touchscreen.

11 Q But even if the user is wearing gloves, when
12 he presses the button, the conductive pad I believe is
13 the element, right? Is the conductive pad the element
14 that touches the touchscreen?

15 A In this particular question (indiscernible -
16 audio disruption).

17 Q I'm sorry, maybe it's 76. Is it element 76
18 that touches the touchscreen?

19 A I believe so.

20 Q Okay. So if the user's wearing gloves, he
21 presses the button, a conductive pad 76 still contacts
22 the touchscreen, so why wouldn't that be sufficient, in
23 the absence of a capacitive element?

24 A It can be, it also can -- may not be. If the
25 circuitry is big enough in order to -- let's see, let me

1 think of this -- let's -- if we phrased your question
2 differently, in 52 -- I should -- Figure 11, they show
3 an electrical wire leaving the bottom of the -- bottom
4 of the button, going through and around parts of the
5 case. Where would you leave off this capacitor, if we
6 assume capacitor is number 9 sitting there? Or is that
7 whole circuitry just gone?

8 Q I was asking if the capacitive element 11 is
9 omitted --

10 A If just the --

11 Q -- what would happen, when -- if the user was
12 wearing gloves and depressed the button.

13 A All right. So is omitted, meaning that the
14 line of the circuit is still connected to the bottom of
15 the button that wraps around to the -- the case? Or is
16 that entire part, from 11 and 9, and 84 missing? It's a
17 whole system, so they can interact together in some
18 ways. So I'm --

19 Q Fair enough. So let me -- let me phrase it
20 differently.

21 In Kondo's primary embodiment, that does not
22 include this capacitive element 11?

23 A Let's say Figure 7.

24 Q Okay.

25 A All right.

1 Q What would happen if the user pressed button
2 77 while wearing nonconductive gloves?

3 A You broke up a little bit, but what I believe
4 I heard was, what would happen if a user pressed 77
5 wearing nonconductive gloves; is that correct?

6 Q Yes.

7 A Most likely nothing.

8 Q Why not?

9 A There is not a charge leaving the fingertip
10 through button 77 to go down and touch the touchscreen
11 through its electrical path. They are fully insulated,
12 as we'd assume if it is truly a nonconductive glove.

13 Q And so did I understand correctly that in
14 paragraph 52 the purpose of the capacitive element 11 is
15 to take the place of the user?

16 A It is not to take the place of the user, but
17 is to assist if the user is wearing something that would
18 not be able to pass a charge, such as insulated gloves.

19 Q Okay. What I meant when I said take the place
20 of the user, I meant it would -- to use your phrasing,
21 the capacitive element would pass the charge, rather
22 than the user, since the user was wearing insulated
23 gloves?

24 A Through the button pressing circuit, it
25 appears so.

1 MR. ALEXANDER: Okay. I think we've been
2 going a little over an hour, so I think this is a good
3 time to take our next break. When would you like to
4 break for lunch? If you prefer I can -- we can take
5 either a 10-minute break, like a normal break, or you
6 know, if you're ready for a lunch break, we could take a
7 longer break. I'll leave that to your discretion.

8 MR. KIKLIS: Yeah. I think let's take a
9 half an hour for lunch if that works for you.

10 MR. ALEXANDER: Sure.

11 MR. KIKLIS: And reconvene 12:31 or
12 something like that. And during the break, I'm going to
13 have that document scanned and emailed to you, okay,
14 Cortney?

15 MR. ALEXANDER: Sure. Sounds good.
16 Let's check with the court reporter to make sure. Is 30
17 minutes sufficient time for lunch?

18 THE REPORTER: Yes. I will take you off
19 the record.

20 MR. KIKLIS: Okay.

21 MR. ALEXANDER: Okay.

22 THE REPORTER: We are now off the record,
23 it is 12:01 p.m., Eastern Standard Time.

24 (Off the record.)

25 THE REPORTER: We are back on the record.

1 It is 12:36 p.m., Eastern Standard Time.

2 MR. KIKLIS: Before you --

3 THE REPORTER: You may proceed.

4 MR. KIKLIS: -- before you start, a
5 little housekeeping, Cortney. Did you get my email?

6 MR. ALEXANDER: I did.

7 MR. KIKLIS: Okay. So that is the
8 version that Mr. Keller had in front of him. I have the
9 actual exhibit, I'm holding it up, which is clean, and I
10 was wondering if it would be okay if I handed this to
11 Mr. Keller, so that he can use this hard copy?

12 MR. ALEXANDER: The exhibit that was
13 actually, you know, Exhibit -- I think it's --

14 MR. KIKLIS: Exactly.

15 MR. ALEXANDER: -- 1003?

16 MR. KIKLIS: Exactly. Because I think it
17 might make the record cleaner, you know. So are you
18 okay with that?

19 MR. ALEXANDER: Yes.

20 MR. KIKLIS: Okay. So Kurtis, why don't
21 you put that version of Kondo aside, and here's --

22 THE WITNESS: On the floor?

23 MR. KIKLIS: Just -- yeah, that's fine.

24 And here you go.

25 MR. ALEXANDER: Okay.

1 MR. KIKLIS: Okay. Sorry for the
2 interruption.

3 MR. ALEXANDER: It's all right.

4 Okay. Mr. Keller, let's see, I am going
5 to share a new exhibit with you. Give it a moment.

6 So let's go ahead and mark this as
7 Exhibit 3 for this deposition.

8 (Exhibit 3 marked for identification.)

9 BY MR. ALEXANDER:

10 Q Okay. So, Mr. Keller, I don't know that
11 you've seen this document before, but let me ask you
12 that question. Is this something that you recognize?

13 A I have not seen this document.

14 Q Okay. So it says it is describing the market
15 share of mobile phone touchscreens worldwide from 2013
16 to 2020. Do you see that?

17 A Yes, I do.

18 Q Okay. And so for the year 2013, it indicates
19 that 3-and-a-half percent of mobile phone touchscreens
20 were resistive. Do you see that?

21 A Let me get the whole screen here. Yes, I see
22 that.

23 Q Okay. And then for 2014, it says 0.5 percent
24 of touchscreens were resistive, correct?

25 A I'm assuming that's what that means on the

1 very top there.

2 Q Right. And then for 2015, it doesn't actually
3 indicate any percentage of Smartphones being resistive,
4 correct?

5 A It does not show any.

6 Q And that continues to be the case for 2016
7 through 2020, correct?

8 A Those --

9 MR. KIKLIS: Objection. Scope.

10 THE WITNESS: Those show projected
11 capacitive. So I'm assuming -- when was this done?
12 Shares 2013, 2020. So it appears that, from the
13 document, is making guesses for 2016, 2017, 2018, '19,
14 and '20.

15 MR. ALEXANDER: Uh-huh. Fair enough.
16 Yeah.

17 MR. KIKLIS: I'm going to object to --

18 MR. ALEXANDER: And it doesn't --

19 MR. KIKLIS: I'm going to this exhibit
20 for scope and foundation.

21 BY MR. ALEXANDER:

22 Q So Mr. Keller, it, you had noted, indicates
23 the projected market share by type of touchscreen for
24 2016 through 2020, correct?

25 A You broke up at the beginning.

1 Q Did I understand you correctly that your
2 understanding of this document is that it shows
3 projected market share of mobile phone touchscreens by
4 type of touchscreen from 2016 through 2020?

5 MR. KIKLIS: Objection. Scope.
6 Foundation.

7 THE WITNESS: It appears they're taking
8 guesses or stabs of the future from --

9 MR. ALEXANDER: Right.

10 THE WITNESS: -- the date this might have
11 been written. It's also completely missing anything
12 from 2012, 2011, 2010, for any legacy devices.

13 MR. ALEXANDER: Uh-huh.

14 THE WITNESS: That seems to be important.

15 BY MR. ALEXANDER:

16 Q Why is that important?

17 MR. KIKLIS: Objection. Scope.
18 Foundation. Can I have a running objection with respect
19 to this exhibit on -- for scope and foundation? That
20 way I don't interrupt you.

21 MR. ALEXANDER: Yeah, sure, that's fine.

22 MR. KIKLIS: Okay.

23 BY MR. ALEXANDER:

24 Q So there was a question pending, Mr. Keller.
25 Do you recall the question?

1 A I am looking.

2 Q You had said it seems to be important that
3 there was no information for 2010 through 2012.

4 A Well, I --

5 Q And I asked you why that's important.

6 A It's important for two reasons. For anything
7 that's trying to predict the future is -- the only thing
8 you have to go by is what the past is, and this does not
9 have much past to go by. If there's a change -- and
10 this is the first time I've seen this document, so I
11 have nothing to go by to even assess its validity, but
12 if the resistive, the green in there, is changing, it'd
13 be nice to know how it's changed from, and what basis
14 they got their -- their guesses from, or their data
15 from.

16 Q Okay. Do you have any reason to think the
17 data for 2013 through 2015 is incorrect?

18 A Again, this is the first time I've seen this
19 document. I haven't seen where it got all of its data
20 from. Most of this information --

21 Q That wasn't my question. Respectfully, that
22 was not my question, Mr. Keller. So I would ask you to
23 answer the question that I asked.

24 MR. KIKLIS: Objection.

25 BY MR. ALEXANDER:

1 Q Do you have any reason to doubt that the
2 information here, as to the market share of resistive
3 touchscreens for 2013 through 2015 is incorrect?

4 A Not seeing this document before, nor know its
5 sources, or anything about its sources, I have no reason
6 to believe anything in here is valid.

7 Q Do you have any reason to believe anything in
8 here is incorrect, Mr. Keller?

9 A I have no reason to under -- I have -- let me
10 think of how to say this. I do not know where these
11 statistics came from. I have no reason to come up with
12 any support behind them, for them, against them.

13 Q Okay. And I would appreciate -- I mean, this
14 is my time. You've made your point that you don't
15 understand where the data came from. I get it. That's
16 on the record. I'm entitled to an answer to my
17 question.

18 Do you have any reason to believe that this
19 information about the market share of resistive
20 touchscreens in 20 through -- 2013 through 2015 is
21 incorrect?

22 MR. KIKLIS: Objection. Speculation.

23 THE WITNESS: Yes, I have reason to
24 believe it may not be correct because I don't have any
25 other foundation to go by.

1 BY MR. ALEXANDER:

2 Q Do you have any knowledge, Mr. Keller, of the
3 percentage of mobile phone touchscreens that were
4 resistive in 2013?

5 A I do not have knowledge offhand of what the
6 percentage was.

7 Q Do you have any knowledge of the percentage of
8 mobile phone touchscreens that were resistive in 2014?

9 A I do not know a statistical percentage of the
10 number of resistive touchscreens in cell phones of year
11 2014.

12 Q Do you have any knowledge of the percentage of
13 mobile phone touchscreens that were resistive in 2015?

14 A I have my understanding at the time,
15 especially 2013, that there was resistive touchscreens
16 available, and the previous years, which were completely
17 omitted in this document.

18 Q That wasn't my question, Mr. Keller. I would
19 appreciate an answer to my question.

20 Do you have any knowledge of the percentage of
21 mobile phone touchscreens that were resistive in 2015?

22 A I do not know the percentage of resistive
23 screens that were sold in cell phones in the year 2015.

24 Q Do you know if there were any mobile phones
25 sold on the market in the United States, between 2016

1 and 2020, that had resistive touchscreens?

2 A I have not looked into that. I do not know.

3 Q Do you know what the percentage of
4 touchscreens in 2012 in mobile phones were resistive?

5 A I do not know the percentage of touchscreens
6 in 2012 that were resistive. Nor do I know the
7 percentage of touchscreens that were projective
8 capacitive, as this one states.

9 Q Do you know the percentage of cell phones in
10 2014 that used surface capacitive touchscreens?

11 A I do not have the statistical numbers of the
12 percentage in 2014. I do not know.

13 Q Do you know the percentage of mobile phone
14 touchscreens that were resistive in 2011?

15 A I do not know the number of resistive
16 touchscreens in 2011.

17 Q Do you know for 2010?

18 A I do not know the numbers for 2010. If this
19 exhibit would be -- to make this exhibit more useful,
20 it'd be handy if it showed previous -- previous years,
21 earlier than 2012 -- 2012, excuse me.

22 Q Do you see at the bottom lefthand corner of
23 this screen there's a URL?

24 A It's going right. Statistic -- Statista?

25 Q Yes.

1 A Yeah.

2 Q Are you familiar with Statista.com?

3 A No, I'm not familiar with it.

4 MR. ALEXANDER: All right. I've put up
5 Exhibit -- what I'd like marked as Exhibit 4. Could we
6 -- let's go ahead and give the court reporter a chance
7 to mark this.

8 (Exhibit 4 marked for identification.)

9 BY MR. ALEXANDER:

10 Q Okay. So Exhibit 4 is the 075 patent. Are
11 you familiar with this patent, Mr. Keller?

12 A Yes, I am.

13 Q When's the last time you read this patent?

14 A Read the patent? Several days ago. Week or
15 two weeks ago. Something in that timeframe.

16 Q Did you do anything -- I'm sorry.

17 Did you do anything in preparation for your
18 deposition today?

19 A I read through the -- my declarations. And --
20 and the -- these three patents here.

21 Q How much time did you spend preparing?

22 A Maybe 15 hours or so.

23 Q Did you meet with anybody in preparation for
24 your deposition?

25 A Two days ago I met with Mr. Kiklis.

1 Q Did you meet with anybody else in preparation
2 for your deposition?

3 A No. But yesterday we met here to go over the
4 -- this electronic video arrangement, and there was --
5 and Andy was also on the phone call here, to make sure
6 this was going right.

7 Q Okay. No one else?

8 A No. Not that I can think of.

9 Q Did you look at any documents, other than your
10 declarations, and -- you said the three patents. I
11 think what you meant by that were the -- probably the
12 Kondo that you referenced and the 075 patent. Did I
13 understand that correctly?

14 A That is correct.

15 Q Okay. Did you look at any other documents in
16 preparation for your deposition?

17 A Not that I'm recalling. I'm trying to --

18 Q Okay. I'd like to talk about the 075 patent
19 for a few minutes. Could you look at Figure 6A, please?

20 A 6A. All right. I am there.

21 Q Okay. Is it your understanding that this
22 figure is showing one embodiment that's disclosed in the
23 075 patent?

24 A Yes. That is my understanding.

25 Q Can you explain to me how this embodiment

1 works?

2 A Pull this up. In the 6A, the Figure 6A,
3 there's -- they like to call this one, from the patent,
4 the passive version. And that is when a user would
5 touch 29a, 29b, 29c, or 29d, that an electrical charge
6 can be passed through one of the conductors of 28 into
7 the 26s to a mobile device, and in -- actually input a
8 signal to that.

9 There's better terminology. I could read
10 directly from the patent if you'd like, but --

11 Q You said that the charge passes through one of
12 the conductors. Where is the charge coming from and
13 where is it going?

14 A Being it's electrostatic it can go either to
15 or from the user. So it could go to the -- to the
16 finger or from the finger, depending upon what the
17 potential is.

18 Q And you said, I believe, that this embodiment,
19 you called it the passive version. What do you mean by
20 that?

21 A I believe that term is taken right from the
22 patent itself. Let's see. Would you like me to find
23 that, or shall we move on?

24 Q I was just really asking you what you
25 understood when you said passive version. So what do

1 you understand that to mean?

2 A I understand it, in the way that this patent
3 is written, is this is the one that does not have
4 mechanical motion, as required to make the actuation
5 occur. I believe that's how they come up with the term
6 passive in this description.

7 Q Okay. Well, let's look at Figure 7A. Is this
8 describing a different embodiment?

9 A Yes.

10 Q And how does this embodiment work?

11 A This embodiment works by when a user presses
12 an external lever, item 725 can then touch the -- the
13 screen of the cell phone. When they release the lever,
14 it is not touching it anymore.

15 Q Let's look at -- can we move to column 7,
16 please, of the 075 patent. Are you there?

17 A Just about. There we go. I'm -- column 7.

18 Q Okay. And in this column, there's some
19 discussion of the electrical shield; is that correct?

20 A Electrical shield, I see it listed about line
21 18, 17. Yeah, about line 18.

22 Q Right, right. What's your understanding of
23 what the term electrical shield means?

24 A Well, I have that in my declaration. So I'll
25 go there. It's not a -- it's not a term that is

1 standardly used. So because it's not a standard term
2 that's used, I had to go by the specification, and it's
3 -- shall I read the section, page 11 in the -- my
4 declaration?

5 Q I want to know what you understand the term
6 electrical shield to mean. So if you're referring to
7 your declaration, yeah, I don't mind you referring to
8 that, but hopefully, we're talking about a -- I'm asking
9 for what you understand the term to mean, so I'm not
10 looking for a lengthy recitation from the declaration.
11 But if you want read anything in your declaration where
12 you state what you think it means, that's fine.

13 A Okay. So electrical shield is material
14 configured to, when brought in proximity to, and/or
15 touches the touchscreen, induces a touch event that is
16 electrically detectable by the touchscreen device. I'm
17 taking that from the patent because there's just not a
18 standard definition for what an electrical shield is.

19 Q Okay. And I think that language in the patent
20 you're referring to is probably right there in the
21 passage you referred to a moment ago, that begins at
22 column 7, line 18; is that right?

23 A Let's see. I'm not sure it's from there.
24 It's lower than that, in about the 22 range. But yes,
25 it is still in that same paragraph.

1 Q Yeah. Okay. I see that. Yeah. Sorry about
2 that. So yes, the sentence beginning at line 22 in
3 column 7, correct?

4 A I believe so.

5 Q Okay. Let's move a little further down in
6 column 7 to the paragraph beginning at line 52. You
7 with me?

8 A 52. I'm there now.

9 Q Okay. Is it correct that this paragraph
10 describes two different alternative embodiments?

11 A Let me read the paragraph, then.

12 Q Certainly.

13 A All right. I've read it. The question was --
14 I'm not sure it's two different items, but it's -- it's
15 two different variations of it.

16 Q Okay.

17 A A variant --

18 Q I'm sorry, I didn't --

19 A I'm sorry, I was --

20 Q -- mean to interrupt you.

21 A I was talking beyond what I meant to. Go
22 ahead.

23 Q I think you were saying that this paragraph
24 describes two different variations. Did I understand
25 you correctly?

1 A It has two different variations of the
2 mechanism.

3 Q Okay. And is it -- it's correct that in the
4 second variation that's described in the last sentence
5 of this paragraph, that variation uses the electrical
6 properties of the user's body to induce a touch input?

7 A In that second half of that paragraph it reads
8 basically what you read, that the electrical properties
9 of the user's body can be utilized to induce the touch
10 input.

11 Q Okay. And the first variation described in
12 the first sentence doesn't utilize the electrical
13 properties in the user's body to induce a touch input,
14 correct?

15 A As it states, if it is configured -- in other
16 words, sized large enough or positioned in a location as
17 to have capacitive properties sufficient to be detected
18 by this capacitive touchscreen, that it may work as an
19 input device.

20 Q Without relying on the properties of the
21 user's body, correct?

22 A As it states there.

23 Q Let's look back at Figure 7A for a moment.
24 And in fact, give me a second, because --

25 A Sure.

1 Q -- you had really nice, annotated figures in
2 your declaration, so I may just move us to your
3 declaration. But give me a minute to do some navigating
4 on my end.

5 A Sure.

6 Q We may come back to the patent, but I'm going
7 to go ahead and close it for now, so we can look at your
8 figures. I've always been curious, historically, why
9 they don't annotate patent figures. Seems like our
10 lives would be a little easier if they did.

11 A Yeah, there would be a lot less page flipping.

12 Q Okay. I'm in the process of putting your
13 declaration back up. This is the one we looked at
14 earlier, Exhibit 1, so I know you have a hard copy
15 there, so feel free to refer to your hard copy.

16 A All right.

17 Q All right. And just give me a second to just
18 figure out -- let's look at page 26 of your declaration.

19 A Page 26. Okay.

20 Q All right. And in fact, perhaps 28 is even
21 better because it has Figures 7A through 7B all
22 annotated together there, so that might be easier to
23 refer to. But I just want to understand -- I want your
24 understanding of what happens in the input mechanism in
25 this embodiment here, shown in these Figures 7A through

1 7B.

2 A Quick question. 20 -- page 20 -- or page 18
3 of the document or what it shows as the numbers?
4 Because I have -- I show page 27, but actually showing
5 page 18. Which -- which number should I go by? I'm
6 confused here.

7 Q Sure. Yeah. I'm sorry. I'll refer to the
8 paragraph of your declaration, so that --

9 A Oh, okay.

10 Q -- probably avoids that confusion. So
11 paragraph 40 begins on -- if you're going by the exhibit
12 numbering down on the bottom righthand corner, like
13 Google Exhibit 1002, it's page 36. And then on the next
14 page, following that, which is still part of paragraph
15 40, it includes the annotated Figures 7A through 7 -- I
16 guess it's 7A, B, C, and E.

17 A Okay. I --

18 Q Are you with me?

19 A -- I'm on page 40. 40, here we go. Yeah. So
20 paragraph 40, page 36, correct?

21 Q Yeah. Okay. And then I was actually -- so on
22 the next page, page 37, is where the annotated figures
23 are.

24 A Oh, all right. I'm there.

25 Q Okay. So here in these figures, you've got

1 marked, 715 is the input mechanism, correct?

2 A Correct.

3 Q 720 is the lever?

4 A Correct. And you're do -- looking at which
5 figure? 7A?

6 Q I think you probably have these marked in most
7 of them. I'm looking -- 7A, we can talk about 7A.
8 That's --

9 A Sure.

10 Q -- I'm looking at the annotations that you
11 have on the element numbers in 7A.

12 A All right. I am there.

13 Q All right. And the electrical shield is 725,
14 correct?

15 A Correct.

16 Q And the -- let's see. It's element 730 that
17 is the coupling linkage, correct?

18 A Correct.

19 Q All right. So kind of with reference to these
20 elements that you have marked here, what happens when a
21 user activates the input mechanism?

22 A When the actuation happens, the user presses a
23 lever on the outside to raise the -- I guess we'll look
24 at 7A to 7B. And so when it's actuated, we then look at
25 Figure 7B, and as we can see that the input mechanism,

1 the -- well, basically where the 715 is kind of pointing
2 to, that part rises up, where it pulls the -- what
3 structure do we want to call that -- the coupling
4 linkage, pulls it up, and it buckles the far side of
5 that. When it buckles, presses a 735, a phone it could
6 be, or anything there, into the electrical shield. That
7 electrical shield is then pressed upon the -- or
8 supposed to be pressed upon the cell phone.

9 Is that a sufficient description?

10 Q Yeah, that was good. That was sufficient.
11 Thank you.

12 Can we turn to page -- so I'll go by the page
13 numbers in the bottom right hand corner if that's
14 easiest, the exhibit page numbering. Can we go to page
15 22 of your declaration?

16 This is where you start discussing the term
17 lever.

18 A All right. All right. I am there.

19 Q Okay. Here, in the first paragraph discussing
20 lever, the last sentence says, "I therefore
21 consideration some dictionary definitions to determine
22 its ordinary meaning." Do you see that?

23 A I do.

24 Q Did you consider any dictionary definitions
25 that are not included here in your declaration?

1 A I believe I even have some listed here. So
2 yes, I looked at different ones. Some are obviously --

3 Q Okay.

4 A -- not related directly.

5 Q Okay. Let me clarify my question. You cite
6 at least two, I believe, dictionaries here. I see the
7 Merriam-Webster Online Dictionary at the bottom of this
8 page we're currently looking at, and then I see on the
9 next page a definition from Random House Webster's
10 College Dictionary. Those are the only two dictionaries
11 that I see cited; is that right?

12 A That is the only two I see cited. That is
13 correct.

14 Q Okay. Did you consider any dictionaries
15 besides those two that are list -- that are cited here?

16 A I don't recall looking through any more, if
17 that is the question. That has been nine months ago or
18 something like that. I don't recall exactly.

19 Q Okay. Let's look at the next page, 23,
20 according to the exhibit number.

21 A Okay. All right.

22 Q This paragraph begins with a sentence that
23 says, "These definitions encompass a long plank or bar
24 that lifts heavy objects, which a person of ordinary
25 skill in the art would understand is not relevant to how

1 the term is used in the 075 patent," correct?

2 A I see that.

3 Q So which definitions are you say -- which
4 definitions are you referring to here in this sentence?

5 A In the sentence that you just read?

6 Q Correct.

7 A Well, they actually draw a -- somebody trying
8 to move a heavy object, a rock, as -- and shows levers,
9 definition 1, in the -- in the drawing there, which is
10 attributed to the dictionary page 764. Does that answer
11 the question?

12 Q Well, I do see the drawing, but the drawing
13 itself I don't think is really a definition, right. So
14 I was wondering which of the actual definitions from the
15 dictionaries that you're referring to in this sentence.

16 MR. KIKLIS: Objection. Misstates.

17 THE WITNESS: The projecting piece by
18 which a mechanism is operated or adjusted seems to be
19 the most relevant to what this patent is trying to say.

20 BY MR. ALEXANDER:

21 Q Okay. Appreciate that. I see you say that in
22 the next sentence. But I'm actually asking still about
23 the first sentence of this paragraph, where you say
24 that, "These definitions encompass a long plank or bar
25 that lifts heavy objects," and I'm -- what are "these

1 definitions" that you're referring to in this sentence?

2 A In that sentence I'm referring to the image
3 there, which is kind of funny. And basically, if you
4 look back on page 13 -- oh, sorry -- the 22, where it
5 talks about priorities for dislodging something. Those
6 obviously aren't the same type of mechanisms that are
7 used in this viewer.

8 So I tried to find the definition which is
9 closer to what sounds like would be used in this viewer,
10 and that is, it's a mechanism, it's a projecting piece,
11 which this has, it sticks outside of the box, that's
12 operator adjusted. It seems to be the best definition
13 that I could find that relates to the patent.

14 Q But you don't recall if you looked at any
15 other dictionaries besides these two that you've cited
16 here, correct?

17 MR. KIKLIS: Objection. Asked and
18 answered.

19 THE WITNESS: I do not recall going
20 through any more. I just do not remember.

21 BY MR. ALEXANDER:

22 Q Okay. So these definitions that you're
23 referring to in the first sentence, they may encompass a
24 long plank or bar that lifts heavy objects, but they
25 aren't necessarily limited to only things that lift

1 heavy objects, are they?

2 A I don't know if it's limited, but its purpose
3 is to -- on some of these other definitions -- to change
4 how much force you have to push on one item to another.
5 But we're not really trying to move a force here, I
6 mean, to -- to move a weight. What we're doing is,
7 we're basically pushing a button, is what this is.

8 I don't see anywhere in the -- the patent that
9 it talks about the force, that the forces are high
10 enough that one needs to have a -- a fulcrum lever,
11 something like that. So I've used the definition of
12 what it's trying to do, which is to actuate a mechanism.

13 Q Well, let's look at the first definition in
14 the Random House Dictionary cited on page 23.

15 A All right.

16 Q "A rigid -- a rigid bar that pivots about one
17 point and that is used to move an object at a second
18 point by a force applied at a third," correct?

19 A Yes.

20 Q Okay. That doesn't say anything about a heavy
21 object, right?

22 A In a way it does, because the drawing it has
23 below there shows part of definition 1 is a small force,
24 and heavy force, so then it shows even more so a person
25 push -- using a offset teeter-totter, I guess, to push

1 that heavy rock. So --

2 Q Okay.

3 A -- graphics helping define question -- or
4 sentence 1.

5 Q Okay. So do I understand you right, that
6 you're saying the example illustration is showing you
7 the full scope of the definition 1?

8 A I wouldn't doubt it's going to do the full
9 scope, but it gives the idea behind what it's trying to
10 say.

11 Q Okay. Well, you could use something that
12 satisfied definition 1 to move a light object, correct?

13 A It's possible. That does not seem like the
14 meaning that is intended in the patent, as of my
15 opinion. Mostly --

16 Q Let's talk about the second sentence that
17 you've referenced here, where you say that "There is one
18 definition above that is relevant because it relates to
19 how the term lever is used in a device, 'a projecting
20 piece by which a mechanism is operated or adjusted.'"
21 So that's your opinion of what lever, in the context of
22 the '75 patent, means, correct?

23 A That is correct.

24 Q You're familiar with retractable pens?

25 A Retractable pins in what?

1 Q An ink pen.

2 A Oh, pen. Okay.

3 Q I don't know if you can see it, but I'm
4 holding one up, and I --

5 A All right. Now -- now I do, I just --

6 Q -- click it -- okay.

7 A Yes. Yes, I am.

8 Q Okay. So I'm holding, you can see it, I
9 believe, a just generic Pilot retractable pen, where I
10 click on the button on top, and the point comes out, and
11 I can write, and I can click the button again, and it
12 retracts back into the body, and doesn't get all over
13 everything when I put it in my pocket, right? You're
14 familiar with this sort of pen?

15 A I'm familiar with this.

16 Q Is the button on this pen, on this sort of
17 retractable pen, a lever?

18 A I haven't thought of that before. But
19 according to the definition, one of these definitions,
20 it's a projecting piece, and its mechanism -- so it
21 could be.

22 Q Okay. And is it -- is it your testimony that
23 the button on a retractable pen sits within the meaning
24 of lever, as would be understood by a person of ordinary
25 skill in the art of the 075 patent?

1 MR. KIKLIS: Objection. Asked and
2 answered.

3 THE WITNESS: As according to the
4 description in the dictionary, a projecting piece by
5 which a mechanism is operator adjusted, it does seem to
6 fall into that category. Again, this is something
7 outside of what I looked into, had considered longer,
8 but my first pass right now, this short time we have,
9 that's -- those are my thoughts. It's not an official
10 opinion.

11 MR. ALEXANDER: All right. I've put up a
12 new exhibit. Can we mark this as Exhibit 5, please?

13 (Exhibit 5 marked for identification.)

14 BY MR. ALEXANDER:

15 Q All right. So, Mr. Keller, this is a document
16 that I don't believe you have in front of you. This is
17 an excerpt from the Oxford Dictionary of Mechanical
18 Engineering, so you should be able to use the interface
19 to scroll through this document.

20 Are you familiar with the Oxford Dictionary of
21 Mechanical Engineering?

22 A I am not.

23 Q Okay. Well, you can see, on the second page
24 of this exhibit, that it was -- this edition was
25 published in 2013. And then on the last page of this

1 exhibit, there's a definition from this dictionary of
2 lever. Go ahead and read that definition of lever
3 there, please.

4 A All right. Do you also have a similar
5 definition from a -- I don't know if there is such a
6 thing as the Oxford electrical Engineering Handbook or
7 Dictionary of Electrical Engineering, but do you have
8 any definition from them of what they consider a lever?
9 Since this is -- this device is a electromechanical one,
10 we should look at both sides. Do you have such a thing?

11 Q Unfortunately, I get the questions here, not
12 you. So we're going to talk about this definition.

13 Have you had the opportunity to read this
14 definition?

15 A Yeah, once. Let me read it again.

16 Q Sure.

17 A All right. I have.

18 Q Would this be how a person of ordinary skill
19 in the art in the 075 patent would've understood the
20 term lever in 2014?

21 A I would --

22 MR. KIKLIS: Objection. Objection.
23 Vague.

24 THE WITNESS: Could you restate the
25 question, then?

1 BY MR. ALEXANDER:

2 Q Does this definition reflect how a person of
3 ordinary skill in the art of the 075 patent would've
4 understood the term lever, as of the filing date of the
5 075 patent?

6 MR. KIKLIS: Objection. Vague.

7 THE WITNESS: I would not think so. I
8 would not.

9 BY MR. ALEXANDER:

10 Q Explain that, please.

11 A It is completely missing the actuation. This,
12 the patent, is about an electromechanical device. There
13 is nothing here about the electrical actuation.

14 I could go to an industrial plant and move
15 long levers, and I'm actuating an electrical switch.
16 That does not follow this. It's a lever, it's a long
17 lever, but that doesn't follow what this mechanical only
18 definition does. This 075 is not a mechanical only
19 patent. In fact, it's very little mechanical.

20 Q Well, I understand what you're saying, the
21 patent isn't electrical only, but could you tell me what
22 electrical function the lever disclosed in the 075 has?

23 A You broke up really bad in the beginning of
24 that sentence. Could you say it again, please?

25 Q Uh-huh. Could you explain to me what

1 electrical function the lever disclosed in the 075
2 patent has?

3 A It is part of a system, electrical switch.
4 The patent itself is mostly about the -- the passive
5 touch to the screens. But also the physical touch to
6 the screens. And since it's talking about both
7 electrical and physical, a definition which only talks
8 about a mechanical advantage is not a definition that is
9 relevant to this patent. It's an electrical mechanical
10 system, and it should be treated as such.

11 Q I'd like to ask specifically what electrical
12 function the lever, specifically that's disclosed in the
13 075 patent, has?

14 MR. KIKLIS: Objection. Asked and
15 answered.

16 THE WITNESS: The electrical -- the lever
17 causes the actuation of the button sensing on the cell
18 phone. It does not --

19 BY MR. ALEXANDER:

20 Q Right. The lever causes the actuation, right?
21 So that's a mechanical action, correct?

22 A It is --

23 MR. KIKLIS: Objection. Misstates.

24 Give me a chance to object.

25 THE WITNESS: Say the question again,

1 please.

2 BY MR. ALEXANDER:

3 Q The actuation of the lever is mechanical,
4 correct?

5 MR. KIKLIS: Objection. Objection.
6 Vague.

7 THE WITNESS: The actuation is electrical
8 mechanical action.

9 BY MR. ALEXANDER:

10 Q The action of the lever is electrical
11 mechanical action?

12 A The --

13 Q Is that your testimony?

14 A The actuation of the lever is an
15 electromechanical action. As can be seen in the
16 drawings in the patent itself.

17 Q Is the electrical aspect that you're referring
18 to the contact between the electrical shield and the
19 touchscreen?

20 MR. KIKLIS: Objection. Vague.

21 THE WITNESS: It is part of the system,
22 direct part of the system, which causes the -- the
23 actuation of the button.

24 BY MR. ALEXANDER:

25 Q What is part the system?

1 A The 720 -- just let me get the --

2 Q The lever, you're saying?

3 A -- drawings --

4 Q You're referring to the lever when you said,
5 "It is part of the system," you meant the lever is part
6 of the system?

7 A Yes.

8 Q Okay. I want to -- my question is only
9 talking about the lever.

10 A Okay.

11 Q Is there any electrical function of the lever
12 disclosed in the 075 patent?

13 MR. KIKLIS: Objection. Asked and
14 answered.

15 THE WITNESS: You can keep saying that
16 all you want, Counsel, but it's not true.

17 THE WITNESS: I need to dig through here
18 because I want to make sure I -- I'm going through 075
19 patent, if you're wondering. We just looked at this.

20 And your actual question was -- I need to
21 remember.

22 BY MR. ALEXANDER:

23 Q Do you need me to repeat my question?

24 A Yes, yes. Please do. I'm trying to think
25 through here, look at the notes.

1 Q So I'm asking only about the lever itself. Is
2 there any electrical function of the lever that's
3 disclosed in the 075 patent?

4 A Being it's part of the switch. I would say
5 yes.

6 Q Okay. Let's -- by switch, I don't think
7 switch is a term that's in the 075 patent, is it? So
8 tell me --

9 A I --

10 Q -- when you say switch, what you're talking
11 about?

12 MR. KIKLIS: Objection. Vague.

13 THE WITNESS: The mechanical actuation of
14 that electrical touch, physical touch, that goes onto
15 the screen. It's -- is a switch.

16 MR. ALEXANDER: Got it. You're refusing
17 to answer my question because I'm asking only about the
18 lever. So I guess the patent office will -- the judges
19 will make their assessment of your credibility.

20 THE WITNESS: I --

21 MR. ALEXANDER: I do want to give you the
22 opportunity to actually answer the question. So let me
23 come at it from a different direction, Mr. Keller.

24 BY MR. ALEXANDER:

25 Q Let's say, you could use the device that's

1 shown in the 075 patent, you could have the housing, and
2 you could actuate the lever, even if a mobile device was
3 not inserted into the housing, correct?

4 MR. KIKLIS: Objection. Argumentative.
5 Don't lecture the witness. We should maintain
6 professional environment here.

7 MR. ALEXANDER: I would really like to do
8 that, Counsel. And perhaps if you stopped coaching the
9 witness, he would answer the questions that are actually
10 asked, instead of the questions that you would like him
11 to answer.

12 MR. KIKLIS: I'm not doing anything of
13 the sort.

14 THE WITNESS: All right. All right. Are
15 we set?

16 MR. ALEXANDER: There's a question
17 pending.

18 THE WITNESS: Your last --

19 MR. ALEXANDER: If your counsel is done
20 talking.

21 THE WITNESS: And you, too.

22 So your question, to my understanding, is
23 if somebody pressed the lever 720, and there was not a -
24 - a device, a cell phone stuck in that spot there, would
25 something occur? Is that correct?

1 MR. ALEXANDER: No.

2 THE WITNESS: Oh.

3 BY MR. ALEXANDER:

4 Q I asked, if you didn't have a mobile phone
5 inserted into the housing, could you still actuate the
6 lever?

7 A The lever, I believe, would still -- it would
8 move. That is -- move and the electrical shield would
9 move, and 735 would move. And 730 would -- would bend,
10 as shown in the 7B. Let's see. Make sure I get our
11 drawings right here. Yes, as in 7B.

12 Does that answer the question?

13 Q It does. Would anything electrical occur in
14 that situation, where a mobile device was not present in
15 the housing?

16 A Just as in the passive version of the system,
17 nothing would happen. There's no electrical exchange to
18 a device, there is no physical exchange to a device. So
19 nothing would happen.

20 Q Okay. So there's nothing about the lever
21 itself that has any electrical function?

22 MR. KIKLIS: Objection. Asked and
23 answered.

24 THE WITNESS: When the -- when the
25 device, the cell phone, is removed, no, there cannot be

1 an electrical actuation of any sort that I see. Is
2 that --

3 MR. ALEXANDER: Okay.

4 THE WITNESS: -- the answer?

5 MR. ALEXANDER: I do believe that's a
6 correct answer. Thank you.

7 BY MR. ALEXANDER:

8 Q So let's look back at the Oxford Dictionary
9 definition of lever. Other than the answer you already
10 gave as to why you don't think this definition applies,
11 do you have any additional reason why this definition
12 doesn't reflect how a person of ordinary skill in the
13 art of the 075 patent would understand the term lever,
14 as of the filing date of the 075 patent?

15 MR. KIKLIS: Objection. Vague.

16 THE WITNESS: Since you're giving a
17 mechanical only device -- let me go back to the light
18 switch thing. When the light switch is hooked up to a
19 circuit the light turns on. If I'm holding a light
20 switch that's connected up to nothing, but click, well,
21 nothing happens.

22 I -- it's -- it doesn't change what it
23 is, it's still an actuator, and it actuates an
24 electrical switch, but because nothing's coming out of
25 it does not negate it, and it's now suddenly a fulcrum

1 to lift rocks. I don't see how the analogy of a
2 mechanical only lever here relates to this patent, as
3 you're showing in this Oxford Mechanical Engineering
4 Dictionary.

5 And I'm speaking that as a --

6 MR. ALEXANDER: Okay. So I --

7 THE WITNESS: -- mechanical engineer.

8 MR. ALEXANDER: -- I just want to make
9 sure I get all of your testimony here as to why this
10 definition, in your opinion, doesn't reflect how a
11 person of ordinary skill in the art would understand the
12 term lever.

13 BY MR. ALEXANDER:

14 Q Do you have any further reason, that you
15 haven't already stated, as to why this definition
16 wouldn't reflect the understanding that a person of
17 ordinary skill in the art would have regarding the term
18 lever at the relevant time?

19 A I'm not not answering your question, but I'm
20 seeing my -- what's it called -- my speech-to-text stuff
21 here, where it says I said capital premier. That's
22 really wrong. And I want to make sure that that is -- I
23 said mechanical engineer, and I want to make sure that
24 was corrected.

25 Now, Cortney, to your question, let's see. I

1 do not have any further comments on my -- want to
2 reflect.

3 MR. ALEXANDER: I think we've been going
4 a little over an hour. I think it's a fine time to take
5 a break.

6 THE WITNESS: All right.

7 MR. KIKLIS: That's fine with us.

8 THE WITNESS: 10 minutes?

9 MR. ALEXANDER: 10 minutes.

10 THE WITNESS: 10 minutes. All right.

11 THE REPORTER: Okay. Let me take us off
12 the record. We are now off the record. It is 1:40 p.m.
13 Eastern Standard Time.

14 (Off the record.)

15 THE REPORTER: We are now back on the
16 record. It is 1:59 Eastern Standard Time.

17 You may proceed.

18 BY MR. ALEXANDER:

19 Q All right. I'm going to put your declaration
20 back up, Mr. Keller, so you know, you can look at --

21 A Okay.

22 Q -- your paper copy.

23 A That is the 075, though, right?

24 Q Yeah, it is. Yeah. So you can feel free to
25 look at your paper copy.

1 A All right.

2 Q And let's -- give me a second. Okay. Yeah.
3 Paragraph 135 of your declaration. Let's turn to that,
4 please.

5 MR. KIKLIS: Is there a way to skip
6 forward on the document on this system? Do you know?
7 Or do we have to go page by page?

8 THE WITNESS: I haven't found a quick
9 way.

10 MR. ALEXANDER: Yeah, I don't know. Try
11 to -- you can -- yeah, you can type in the page number,
12 I believe.

13 MR. KIKLIS: Oh, you can? Oh, there's a
14 search function.

15 THE WITNESS: Oh, is that --

16 MR. ALEXANDER: But if you go to the
17 bottom, where I think you're seeing the right and left
18 scroll, you can actually click on the current page and
19 type in where you want to go.

20 THE WITNESS: Ah.

21 MR. ALEXANDER: So here it's page 104.

22 MR. KIKLIS: Oh. Thank you. Very
23 convenient.

24 THE WITNESS: Yes.

25 MR. ALEXANDER: Yeah, I'll give a plug

1 for Remote Legal. I've -- since we started doing remote
2 depositions I've found this platform to be actually
3 pretty handy. Free advertising, Gina.

4 BY MR. ALEXANDER:

5 Q All right. Mr. Keller, you with me at
6 paragraph 135 of your declaration?

7 A I am.

8 Q Okay. So Claim 10 is what you're talking
9 about here, and Claim 10 recites, among other things, "a
10 compressible pad disposed between the second portion of
11 the input mechanism and the portion of the surface of
12 the electrical shield," correct?

13 A Yes.

14 Q I don't really understand what you're pointing
15 to in Chu as satisfying the compressible pad limitation,
16 so I was hoping you could explain that to me.

17 A Okay. Let me read that claim real well, make
18 sure I --

19 Q Sure.

20 A I guess it helps to go -- well, no, I guess we
21 can show it right there. Figure 4 above. We're trying
22 to show that there is -- rephrase that.

23 Is your question asking -- what is your
24 question asking?

25 Q How do you say Chu discloses -- I guess I'll

1 back up.

2 Do you -- is it your opinion that Chu
3 discloses the compressible pad that is recited in Claim
4 10?

5 A Yes, I do believe it is there. And if we look
6 at Figure 4, so talks about electrical charge, all
7 right, and so it actually has -- we have to look at
8 Figure 4, we see the E -- let's look at the figure,
9 we'll start there.

10 So you see it's the E for electrical charge,
11 and shows arrows going both directions, because the
12 charge can either come or go, depending upon which has a
13 higher potential. That charge goes through the finger,
14 as shows with his arrows, through the button, as shows
15 with the arrows. Again, there's a E and more arrows.

16 And if this is hard to understand, because I'm
17 pointing to my screen, and you can't see me, but I'm
18 pointing to the screen where we're now down the shaft,
19 number 14, electrical charge is going through there,
20 again to an E. And then again there is a arrow up and
21 down that is below that bottom E, that goes through the
22 center, all the way through the probe pad.

23 And so since he's showing it always going
24 through the center, means there must be something that's
25 conductive through the center of that pad.

1 Q Okay. So if I -- do I understand you
2 correctly that you are not relying on Chu's probe pad
3 30, as being the compressible pad? Is that right?

4 A Oh, I was looking -- I was thinking about the
5 cushion. Excuse me. So then --

6 Q Well, okay. This is part of what I'm trying
7 to understand.

8 So is there an element in Chu's figures, be it
9 Figure 4 or Figure 5, whichever figure you want to look
10 at, does Chu show the element that you are saying
11 constitutes the claimed compressible pad?

12 A We should look at Figure 5, where -- so on the
13 next page.

14 Q Yeah.

15 A There -- there I have actually drawn up,
16 really nicely, in red color, producing a color version
17 of this, the probe pad that wraps around it, and there's
18 probe pad outer surface, and the compressible pad in the
19 inside of that.

20 Q Okay. So do I understand correctly, because
21 I'm glad you brought us to Figure 5, because this is
22 where I wanted to talk about also, the arrow for
23 compressible pad appears to me to be pointing to the
24 white space that would be in the interior of this, you
25 know, actuator that is not part of the probe pad 30; is

1 that right?

2 A It doesn't necessarily have to be a direct
3 part of the probe pad. And when I look at it, using
4 the, you know, drawing definitions, where the -- they're
5 slatted lines, that is a different material that appears
6 in there.

7 Now, the lines --

8 Q The white space, you're talking about,
9 correct?

10 A White space. Correct.

11 Q Okay. So is it your opinion that that white
12 space constitutes a compressible pad, correct?

13 A It seems like it must be, due to Figure 4 on
14 the previous page, where he's showing the electrical
15 charge goes through that.

16 Q Is there anything in Chu that discusses that
17 white space constituting anything other than empty
18 space?

19 A I don't remember. I need to look at my notes
20 here -- not notes, but this declaration. I'm trying to
21 remember.

22 Q Yeah, go ahead. And if you have anything
23 there that would address that, I would be interested.

24 A Not really. It does not talk about
25 specifically what is inside there which can conduct the

1 charge through it, that I remember offhand. But it's --
2 that he shows that electricity or charge does conduct
3 through there, makes me understand that it's not going
4 to be a air gap insulator sort.

5 Unfortunately, the way that he has it drawn
6 here, such as in Figure 5 or Figure 4, for the button or
7 the shaft, one cannot tell what type of material that it
8 is.

9 Q But there's no crosshatching or anything there
10 to identify it as a component, like he's done for other
11 components, like the probe pad 30, correct?

12 A That is correct. But also, he does not do any
13 hashing for the shaft nor the button.

14 Q But those elements are labeled and identified
15 in the specification, correct?

16 A Correct.

17 Q And there is no element label associated with
18 that white space that you've pointed to as the
19 compressible pad, and the annotated Figure 5 on page 105
20 of your declaration, correct?

21 A 105. 105, here. And the question -- could
22 you say it again as a question? I'm maybe not quite
23 understanding your connotation, what you're asking
24 there.

25 Q So Figure 5 on page 105 of your declaration,

1 you with me?

2 A I'm with you, yes.

3 Q Okay. And this is where you've annotated it,
4 and you have compressible pad. And the arrow is
5 pointing at the white space, correct?

6 A Understand.

7 Q Yeah. And my question was pretty simple, I
8 think. There's -- nothing in Chu labels that white
9 space with an element number, correct?

10 A I believe that is correct.

11 Q Is there anything else in Chu, other than the
12 arrow in Figure 4 that you pointed me to, that leads you
13 to believe that there is a material in that white space?

14 A Is there anything -- Figure 4, to me, shows
15 there must be something in that space. What the cushion
16 is made out of, or what causes the electroconductivity
17 to go through the center, where that cushion would need
18 to be, is -- I do not know.

19 It could be part of the probe pad, as far as,
20 you know, little half lines that go through it, the
21 squiggles or such, or whether it's a foam, I do not
22 know, other than it is shown that electricity passes
23 through that center, which means there should be some
24 conductive pad or extensions in there of some sort.

25 Q I'm going to put up another exhibit, so give

1 me a moment to make the change. All right. So I have
2 put up Chu. Do you see it on your screen?

3 A Yes, I do.

4 MR. ALEXANDER: All right. Let's go
5 ahead and mark this as Exhibit 6, please. And let me
6 give the court reporter a moment to make that marking.

7 THE REPORTER: Hang on, I'm just trying
8 to shrink it, the thing. Okay. Sorry about that.

9 (Exhibit 6 marked for identification.)

10 BY MR. ALEXANDER:

11 Q Okay. Let's turn to paragraph 41 of Chu. And
12 it's fine if you use your paper copy.

13 A Okay. There we are.

14 Q Are you there?

15 A Yes.

16 Q Okay. So in paragraph 41 it's talking about
17 Figure 4, right?

18 A Correct.

19 Q All right. And it says that when it's in the
20 actuated position, "electric charge E can be transferred
21 the finger of the user and the capacitive touchscreen 20
22 through the press button, the actuator shaft 14, and the
23 probe head 18, as shown by the arrows," correct?

24 A We lost you the last couple of words you said
25 there, through -- it didn't come through.

1 Q Sure. I'll try again. Partly I'm looking at
2 one document and away from the mic, so I'll try that
3 again.

4 So it's -- I'm looking at the second -- the
5 final sentence of paragraph 41. And it's talking about,
6 in that sentence, when Chu's actuator mechanism is in
7 the actuated position, correct?

8 A Correct.

9 Q And it says, "Electric charge E can be
10 transferred between the finger of the user and the
11 capacitive touchscreen 20 through the press button 16,
12 the actuator shaft 14, and the probe head 18, as shown
13 by the arrows," correct?

14 A Correct.

15 Q Okay. So Chu is telling us that the arrows
16 are showing the -- how the -- it's showing that the
17 charge goes through those elements, but the probe pad
18 18, that is shown in Figure 4, correct?

19 A As you're breaking up a lot again -- element
20 18. And speech-to-text isn't make sense. Could you say
21 that again? I think the audio was having an issue.

22 Q Figure 4 shows the probe head 18, correct?

23 A Correct.

24 Q And paragraph 41 says that the electric charge
25 E is going through the probe head 18, correct?

1 A Correct.

2 Q Probe head 18 comprises the probe pad 30 and
3 element 28; is that correct?

4 A 18. As in Figure 5.

5 Q Yes.

6 A That's what I see here too.

7 Q And element 28 is a sleeve; is that right?
8 You can look at paragraph 48, for example.

9 A Okay. Let me look that up. I see. Correct.
10 Sorry.

11 Q Is it your testimony that Chu would not
12 successfully transmit the charge if there was no
13 material inside that white space that you've labeled as
14 the compressible pad in your -- in Figure 5?

15 MR. KIKLIS: Objection. Misstates.

16 THE WITNESS: So you're asking if the
17 charge would not go through if a -- the pad itself is
18 conductive, conductive polymer, as stated in the patent.

19 Also, when I look at the copy that you
20 sent, which I guess is the original version of this
21 Figure 5, for the electronic version, there are little
22 dots in here filled in where the compressible pad would
23 be. I'm not sure if that's artifacts from the PDF or
24 what, but it shows something in there.

25 However, answering your question, I think

1 I did. I will repeat that electrical conduction should
2 still be able to happen whether that pad is there or
3 not, is my understanding. The -- sorry -- the cushion
4 is there or not.

5 Does that answer your question, or did I
6 ramble?

7 MR. ALEXANDER: No, I think so. I think
8 you answered the question. Let me see.

9 BY MR. ALEXANDER:

10 Q So Chu's Figure 4, and the arrows showing the
11 electrical transfer, that electrical transfer would
12 happen whether or not there is that cushion in the space
13 you've labeled as the compressible pad in your annotated
14 Figure 5, correct?

15 MR. KIKLIS: Objection. Misstates.

16 THE WITNESS: I believe, by seeing the
17 way this drawing is in Figure 4, that it goes through
18 the pad in the center, which, being that it's drawn that
19 way, my assumption would be that is the lowest
20 resistance, so there should be a pad there.

21 Now, would it work without that -- sorry
22 -- a cushion there. Now, without that cushion, would it
23 still work? Probably so because they talk about 18 pad
24 being a conductive polymer. Resistance would probably
25 be different.

1 BY MR. ALEXANDER:

2 Q Okay. So Figure 4 would still be accurate,
3 and Chu would work, even if there was no cushion in that
4 white space that you've labeled in Figure 5, correct?

5 MR. KIKLIS: Objection. Misstates.

6 THE WITNESS: It seems to me, as I just
7 mentioned, that it could work with or without. But
8 would it work better with the cushion? As he shows here
9 in Figure 4, apparently, he uses this cushion inside
10 there, or some type of cushion, to electrically transfer
11 the charge through the center.

12 If you look --

13 BY MR. ALEXANDER:

14 Q Okay. Well, just to make sure I'm not missing
15 something. You say the cushion shown in Figure 4, but
16 Figure 4 does not label anything that's identified as a
17 cushion, correct?

18 MR. KIKLIS: Objection. Asked and
19 answered.

20 THE WITNESS: It is not labeled there,
21 but is shown that something must be there to conduct the
22 electrical charge.

23 BY MR. ALEXANDER:

24 Q Okay. And that white space is not probe pad
25 30, correct?

1 A 30. We do not know if that is -- it is a main
2 solid structure where it's compressible, but it could be
3 gussets or something else. We just do not know. We
4 just know that it's --

5 Q Well, probe --

6 A -- conduct (indiscernible - simultaneous
7 speech).

8 Q Okay. Probe pad 30 is a labeled element,
9 correct?

10 A Correct. Figure 5 shows that better.

11 Q Right. And it has crosshatching for what
12 constitutes probe pad 30, correct?

13 A That is correct.

14 Q Okay. And that white space doesn't have the
15 crosshatching that is applied to probe pad 30, right?

16 A It just has little dots in there on my copy
17 and your copies, on Figure 5.

18 Q Right. And those little dots, I mean, I see
19 those over pretty much this whole figure; is that true
20 for you as well?

21 A That is not true.

22 Q You only see little dots inside that white
23 space, inside probe pad 30?

24 A I -- I see those little dots in the -- the
25 cushion area, but I also see a couple of those dots in

1 that shaft 14. So it's hard to tell from the -- if
2 those dots are artifacts or are there on purpose.

3 Q I see a lot of dots in the -- I guess it would
4 be the housing, looking for a label for it, that --

5 A The hatch --

6 Q -- the housing.

7 A Yeah.

8 Q Do you, as well?

9 A I see some dots in the hatches. But it
10 appears to me, since those dots are at angles if you can
11 -- if you notice, the hatching of that, those dots do
12 not appear to be random. Some of them are angled, so
13 they're following it. So it appears to me that that
14 hatching of the main structure, that there's probably
15 more hatches there than we see. So I'm not sure if that
16 is noise or not, or just maybe that was a light coloring
17 that did not show up when they copied this.

18 Which makes me wonder why those dots exist in
19 the cushion area under 30. And seems that something had
20 to be there to exist because we do not see any of those
21 dots outside of the drawing components themselves. It's
22 very clean otherwise.

23 Q Okay. Well, I see some outside the drawing
24 elements, but I understand that you may not.

25 So just so I can understand it, you're -- what

1 significance are you attaching to those dots?

2 A It's possible that we were, like, shaded with
3 a color or something of that sort.

4 Q Okay. Is it your opinion that those dots
5 reflect the existence of a cushion in that white space
6 that you've labeled as the compressible pad in you
7 annotated version of Figure 5?

8 A I feel that it could. I feel where the -- the
9 true description of it is, is in figure where -- Figure
10 4, where the electrical charge is shown going straight
11 through that area.

12 Q Okay. So your opinion -- I just want to
13 understand what your opinion is on this, right? So --

14 A Uh-huh.

15 Q -- are you able to give a yes or no on whether
16 your opinion is that the dots signify the presence of a
17 cushion in that white space that you've labeled the
18 compressible pad?

19 A I do not feel, on their own, that they would
20 be sufficient to sway me to say that there's a cushion
21 there, a conductive cushion. What does sway me is
22 Figure 4, where it shows the electrical charge going
23 through the finger, through the button, all the way
24 through the center, then through the cushion, and
25 through the pad to number 20. That's where I base my

1 opinion upon.

2 Q Okay. So you're not relying on the dots; is
3 that right?

4 A I am not relying on the dots. That is
5 correct.

6 Q Okay. So back to Figure 5. Element 28, which
7 we looked at earlier, it's called a sleeve, correct?

8 A Correct.

9 Q And that is not part of the white space that
10 you've labeled as the compressible pad, correct?

11 A On which drawing? Oh, here. Your question
12 was --

13 Q We can look at your -- we can go back to your
14 declaration if you want and look at the annotated --

15 A I -- I just was like, there's two parts where
16 your sentence got -- please just say it again, you don't
17 need to change anything, but it just got broken up.

18 Q Sure. Sleeve 18 is not part of the white
19 space that you've labeled as the compressible pad,
20 correct?

21 A Correct. I'm sorry. Sleeve 28.

22 Q Yeah. Did I say sleeve 18? Okay. Yeah.
23 Thank you. So I'll just repeat it for the record.

24 A Okay.

25 Q Sleeve 28 is not part of the white space that

1 you've labeled as the compressible pad, correct?

2 A To my understanding, that is correct.

3 Q Can we look at Figure 3 of Chu, please?

4 A 3, Chu. All right. I am there.

5 Q Do you see those Es around the finger of the
6 user?

7 A Yes.

8 Q There's one E inside the finger, right?

9 A Yes.

10 Q And then there are three Es outside the
11 finger, correct?

12 A Correct.

13 Q What do those Es outside the finger signify?

14 A I'm trying to remember that one. You mind if
15 I look this up?

16 Q Sure. Go ahead.

17 A Figure 3. Described in Figure 4, we know that
18 E is electrical charges, and there's different
19 electrical potentials in the air.

20 Q So is that what you think those Es in Figure 3
21 refer to, or the ones that are outside the use here,
22 they refer to electrical potential in the air?

23 A I would assume that's what they must be. I
24 was not able to find it in the patent.

25 Q Do you know why Chu illustrates those Es

1 around the user's finger?

2 A Does not appear that he described it here, but
3 talks about that there's electrical charges in the air,
4 the user is going to have a different potential than
5 what they're holding onto. So maybe he's just trying to
6 emphasize that.

7 Q Did you say that it -- that Chu talks about
8 that there's electrical charge --

9 A I am --

10 Q -- in the air?

11 A I am trying to remember if he does, or which -
12 - where I read about that, but I need to read number 4
13 more. Let's see. I'm not trying to waste time. I'm
14 trying to see here where he does actually -- meantime,
15 if you have a spot in the Chu where he talks about the
16 definition of his E in there, for this particular Figure
17 3.

18 Q Yeah, no. Well, he talks about Figure 3 right
19 before -- in paragraph 40, right before the passage we
20 were looking at. I don't know if he defines the Es
21 anywhere.

22 A Okay. Well, we're all assuming that the E is
23 electrical charges.

24 Q So do you know why he would -- do you have any
25 idea why he shows those Es around the finger in Figure

1 3?

2 MR. KIKLIS: Objection. Asked and
3 answered.

4 THE WITNESS: Other than there's
5 electrical charges in the air for building up static
6 electricity, I do not quite know why it is drawn that
7 way or included.

8 MR. ALEXANDER: Let's look at paragraph
9 55 of Chu. Well, actually, you know what before we do
10 that, I'm sorry to switch gears on you, but let's -- let
11 me close this. We'll probably come back to that.

12 BY MR. ALEXANDER:

13 Q All right. Let's switch back to Exhibit 1,
14 your declaration on the 075 patent. Again, feel free to
15 reference your hard copy.

16 A All right.

17 Q Let's look at your paragraph 132, which is on
18 page 102 of the exhibit.

19 A All right. Paragraph 132.

20 Q All right. And so here you're discussing
21 Claim 9, right? The 075 patent.

22 A Yes.

23 Q And you say that Figure -- "Chu's Figures 4
24 and 5 show that the portion of the probe pad 130 (sic)
25 that contacts the touchscreen is substantially smaller

1 than the remaining portion of the probe pad." That's in
2 paragraph 134. Do you see that?

3 A I'm pulling that up. I do.

4 Q Okay. Did you explain how -- because I see
5 you don't really have any -- you do show Chu's Figures 4
6 and 5, but there's no text explaining further your
7 opinion there. Could you explain to me how Figures 4
8 and 5 show that the portion of probe pad 30 that
9 contacts the touchscreen is substantially smaller than
10 the remaining portion of the probe pad?

11 A Sure. Looking at Figure 5, that is the state
12 where it is not touching a screen, and if you see, it is
13 the bottom of a curve, the bottom of a semicircle. When
14 that would be pressed down, obviously only the -- the
15 center part is going to be able to touch.

16 As one continues to press, the probe pad will
17 deform until more of the area is touching, as shown in
18 Figure 4, that I can basically not touch anymore. As
19 you can see in Figure 4 at the probe pad, not only as on
20 the curved area that expands too, there also is an outer
21 waist that goes around that shaft, actually, I guess it
22 goes around the -- that sleeve that is there.

23 So it starts off with a small area in the
24 center and then expands to the round half basketball
25 side part of the probe pad.

1 Q Okay. And so did you say that it -- you
2 mentioned the sleeve, and I'm not sure I caught that.
3 What's the relationship that you were describing between
4 the probe pad and the sleeve?

5 A Oh. I just mentioned that it is -- just
6 happens to be wider there, because it has -- the probe
7 pad must wrap around the sleeve, as shown in that.

8 Q You mentioned that the probe pad deforms, I
9 believe when the button is actuated --

10 A It --

11 Q -- correct?

12 A It -- yes. It deforms. The more you press
13 it, the more it's going to deform.

14 Q Why is that?

15 A It's a deformable Ostemer.

16 Q What's causing it greater deformation as -- I
17 think you said the more you press it the more it
18 deforms, so what's causing the greater deformation?

19 A The finger shown on the top of Figure 4. The
20 force that it puts into the mechanism.

21 Q How is the force of the finger applied to the
22 to the probe pad?

23 A Through the shaft. Well, there's the button -
24 - okay. Let me -- let me start again.

25 The finger presses the button, it's pushing

1 down through the shaft, which is attached to the -- the
2 probe head, which has the probe pad in it. When the
3 probe pad starts to touch the touchscreen 20, as shown
4 in Figure 4, it'll initially have a fairly small area.
5 But if additional pressure, distance, is pressed by the
6 finger, the elastomer probe pad will have to deform and
7 will expand in size.

8 Q Because the touchscreen is stationary?

9 A For the most part. So its deformation is --
10 from the touchscreen's point of view -- is that the
11 surface area increases, as far as being touched.

12 Q And what are you relying on for your
13 conclusion that the portion of the probe pad contact
14 touchscreen is substantially smaller than the remainder
15 of the probe pad?

16 A You broke up again in the beginning of your
17 sentence.

18 Q Sure. What are you pointing to for your
19 conclusion that the portion of the probe pad that
20 contacts the touchscreen is smaller than the remainder
21 of the probe pad?

22 A Again, your sentence got distorted when
23 talking but sounds like you're asking what am I going by
24 to say or to understand that the probe pad expands or
25 deforms when it's being depressed, and I look at Figure

1 5, the unactuated state, where it is in a unforced
2 state, we'll say, and then in Figure 4, when the
3 button's actually pressed down, and the touchscreen
4 stops, restricts its motion, and appears the deformable
5 element is the probe pad. And we can see that the probe
6 pad is deformed from its unpressed state.

7 Q Right. I do understand that. I was asking
8 about your opinion that it's substantially smaller than
9 the portion that does not contact. Do you understand my
10 question?

11 A Not specifically.

12 Q Okay. Is it your opinion that the portion of
13 the probe pad that contacts the touchscreen is
14 substantially smaller than the portion of the probe pad
15 that does not touch the touchscreens?

16 A During light touches, the probe pad is
17 definitely substantially smaller, as we're only talking
18 about the bottom curve. If a lot of pressure is
19 pressed, and again, we do not have any numbers to go by,
20 but if you press that really hard, being this is a
21 elastomer, it will expand and increase in size.

22 Does that answer the question?

23 Q So when it's substantially pressed, then
24 therefore the size of the -- the area of the probe pad
25 that's in contact with the touchscreen is increased. Is

1 it still true that the portion of the probe pad that is
2 in contact with the touchscreen is substantially smaller
3 than the portion of probe pad that is not in contact
4 with the touchscreen?

5 MR. KIKLIS: Objection. Vague.

6 THE WITNESS: That was a really long one.
7 I'm not sure how to answer that. Could you break that
8 up into subcomponents, the question?

9 BY MR. ALEXANDER:

10 Q Sure. When the -- let's talk about the
11 situation where the button is fully actuated.

12 A Okay.

13 Q Okay? In that scenario, is the -- is it your
14 opinion that the portion of the probe pad in contact
15 with the touchscreen is substantially smaller than the -
16 - give me one second. Let me -- let me make sure I'm --
17 I'm going to do the best I can, right, to --

18 A Yeah, Yeah.

19 Q -- to not make this more confusing than it has
20 to be. So let me -- give me a second and I'll --

21 A That's all right.

22 Q -- start over. All right. So I will give it
23 another shot. And we're still talking when the button
24 is fully actuated --

25 A Fully actuated.

1 Q -- you with me there?

2 A I am --

3 Q Okay.

4 A -- with you there.

5 Q In that situation, is it your opinion that the
6 portion of the probe pad in contact with the touchscreen
7 is substantially smaller than the remaining portion of
8 the probe pad?

9 MR. KIKLIS: Objection. Vague.

10 THE WITNESS: The surface area that is
11 being touched by the probe pad to the touchscreen in the
12 actuated state is still substantially smaller than what
13 the surface area of the probe pad is.

14 BY MR. ALEXANDER:

15 Q Got it. And so my question really was, what
16 are you relying on Chu in to reach that conclusion?

17 A I'm relying on Figure 4 and Figure 5, seeing
18 the size of the probe pad, and area that is touching the
19 touchscreen in Figure 4 versus the uncompressed Figure
20 5.

21 Q Got it. And you're counting the entire --
22 you're counting the full area of what you're calling the
23 probe pad, it wraps up around the sleeve, correct, as
24 shown in Figure 5?

25 A My understanding of your question was the

1 probe pad -- are the -- the probe pad. And the probe
2 pad does have the sides that wrap around. So I'm hoping
3 that I'm answering your question of probe pad in
4 general.

5 Q Yeah. I think I understood you. Thank you.
6 Can we turn to paragraph 59 of your
7 declaration, please?

8 A You said 59?

9 Q I did say 59, yeah. It's on page 50 of this
10 exhibit.

11 A All right. I am there.

12 Q All right. So in this paragraph, you talk
13 about -- you say that -- in the third sentence I'm
14 looking at, you say, "One goal of device designers is
15 always to increase the usability and consumer appeal for
16 their product while possible, allowing many different
17 types of Smartphones and touchscreens to be used,"
18 correct?

19 A Yes, I see that. Yes.

20 Q And you say that "A VR designer looking at
21 Kondo would readily realize and be motivated to increase
22 the usability and consumer appeal for their device by
23 making it work with both capacitive and resistive
24 screens, and therefore, would be led to Chu," correct?

25 A Yes.

1 Q And you're contrasting -- you stated --
2 earlier in this paragraph, you say that a mechanism like
3 Chu can work with both types of the screens, whereas an
4 electrical input mechanism like Kondo's can only work
5 with capacitive screens, right?

6 That's the second sentence of paragraph 59?

7 A Oh. Yes, I see that.

8 Q Okay. What did -- an electrical input
9 mechanism like Kondo's, what did you mean by that?

10 A Oh, the -- as used in the 075 patent.
11 Basically a passive mechanism where there's capacitive
12 touch, external capacitive touch.

13 Q And when you call Chu a mechanical input
14 mechanism, what do you mean by that?

15 A Sorry. Did I -- the wrong one?

16 Q No. I asked you about Kondo, but now I'm
17 asking you about Chu.

18 A Okay. What is the Chu question you just had,
19 then?

20 Q You called Chu a mechanical mechanism in that
21 same sentence, and I asked you what you meant by that.

22 A Oh, that's the electrical mechanical one.
23 Because the Chu one has motion in addition.

24 Q Okay.

25 A It's electromechanical.

1 Q All right. Okay. You call it mechanical,
2 right?

3 A Electromechanical.

4 Q You call it in your declaration a mechanical
5 input mechanism, correct?

6 A I -- what did I say -- oh, I guess I do.

7 Q Okay. So you say that a VR designer would be
8 motivated to basically make a Kondo work with resistive
9 touchscreens; is that correct?

10 A Yes.

11 Q Why would a person of ordinary skill have been
12 worried about making Kondo work with resistive
13 touchscreens when, by the time of the 075 patent,
14 resistive touchscreens were a very small percentage of
15 the touchscreen market?

16 A Back --

17 MR. KIKLIS: Hold on. Objection. Facts.
18 Misstates.

19 THE WITNESS: Back at that time, going 10
20 years back, head mount displays were relatively
21 expensive, \$2500, on up, some lower, some in \$600 range,
22 but still they were fairly expensive. For someone that
23 wants to use a cell phone as their display device, with
24 a significantly substandard resolution, when you combine
25 it between two eyes, they are basically going to be on

1 the cheap, say. So more of like a temporary head mount
2 or display viewer, but you're not going for top end.
3 And because you're not going for top end, you're
4 probably going to be using non-top-of-the-line or first
5 rate displays.

6 So one should also look at, instead of
7 just the capacitive touch, the newest versions, one
8 should look at what has been out there because that's
9 probably where it's going to be used more initially. As
10 some time goes on, capacitive got to be more. But these
11 were cheap head mounts, cheap head mount display, or
12 viewers at the time, and so one has to look at the lower
13 priced versions of the displays that were there.

14 BY MR. ALEXANDER:

15 Q Let me back -- let me ask you about that. I'm
16 not sure. When you say, "these were cheap head mounts,"
17 what head mounts were you talking about?

18 A Head mount displays that did not include the
19 displays themselves, or trackers either, obviously would
20 cost less than ones that have nice custom displays in
21 them. And because of that, they're -- your user is
22 normally going to be more limited on funds, you'd
23 expect. So because of these lower cost devices that
24 don't have displays built in, one would assume to have
25 to cater towards the non -- what's a way of saying this

1 -- people that buy the latest and greatest cell phone.

2 Q Sure. I understand what you're saying. Now,
3 are you aware of any cell phones that used resistive
4 touchscreens that have the processing power necessary to
5 run the type of applications that would be used in a VR
6 headset?

7 A I cannot even recall any different cell phones
8 that were -- that we used back then or that were used
9 back then. I don't recall any model numbers offhand.

10 Q Okay. Well, if there weren't any cell phones
11 that had sufficient processing power to run VR
12 applications and also used resistive touchscreens, would
13 you agree that a person of ordinary skill in the art
14 wouldn't be worried about designing an input mechanism
15 to work with a resistive touchscreen?

16 MR. KIKLIS: Objection. Vague. Scope.

17 THE WITNESS: That was a very long -- can
18 you shorten that or break it down into multiple parts?

19 BY MR. ALEXANDER:

20 Q You're not currently aware of any cell phone
21 that used a resistive touchscreen that had the
22 processing capabilities necessary to run applications
23 that would be used in a VR headset, correct?

24 MR. KIKLIS: Misstates. Objection.

25 THE WITNESS: I don't agree with what you

1 said. Like I said, I do not --

2 BY MR. ALEXANDER:

3 Q Then please identify -- please identify a cell
4 phone that used a resistive touchscreen. Let's start
5 there. Can you identify a single cell phone that used a
6 resistive touchscreen in 2014?

7 A As I just stated, I do not recall any, whether
8 capacitive or resistive, model numbers of any screen --
9 of any of them back at that time.

10 However, the expectations of the users is
11 going to vary. If they want to see static images, such
12 as the old View-master style, it may entertain somebody
13 for a short while. But the -- the longevity of these
14 type of systems was not very long, mostly due to the
15 displays were inadequate providing good experience.

16 Q What sort of applications were intended for
17 use with VR viewers in this timeframe of the -- you
18 know, the filing date of the 075 patent?

19 MR. KIKLIS: Objection. Vague. Scope.

20 THE WITNESS: It's -- I did not look into
21 it, but some of my recollections of back then were some
22 games. I don't remember what type of games. And
23 showing stereo imagery of some travel locations, things
24 like that. But I cannot recall more offhand.

25 BY MR. ALEXANDER:

1 Q You say stereo images of some traffic
2 locations? Did I understand you right? Travel?

3 A Travel, with a V.

4 Q Okay. What do you mean by that?

5 A What I remember is being shown -- there's -- I
6 don't remember what the actual context was, but I'm
7 going to use Paris as an example. Here's looking at
8 some building in Paris, and you've got a left eye view
9 and a right eye view, and here you can see a stereo
10 image of it. Basically like a View-master.

11 The thing that is nice with the -- with doing
12 that is you don't have to have a accelerometer in the
13 system to make things look good. You're not trying to
14 actually follow the headset locations or orientation.

15 Q Okay. Do you remember the timeframe of that
16 travel image application that you're referring to?

17 A I do not. All I know is long time ago.

18 Q Do you remember the name of it?

19 A No, I -- it might have been things that was
20 developed right in our own Computer Science Department.
21 I do not recall.

22 Q Do you know if it -- so when you say developed
23 in your own Computer Science Department, does that refer
24 to a product that was not released publicly?

25 A It could be. I'm just remembering of trying

1 these devices out.

2 Q Got it. So do I understand correctly that you
3 don't know one way or the other whether the travel image
4 application that you're referring to was a publicly
5 released product or not?

6 A I do not know.

7 Q Are you familiar with any VR viewers that have
8 been designed for underwater use?

9 A I have seen pictures of some, but I have not
10 developed any, nor actually had the pleasure of
11 handholding any type. I did do underwater --

12 Q Where have you seen pictures of some?

13 A I believe it was -- it's the augmented reality
14 ones. I think it was Scuba Diver Maga -- Scuba Diver
15 Magazine. But I do not recall if that was the location.
16 Might have even been one in the boating or yachting
17 magazines. I do not remember.

18 Q Do you recall the year in which that magazine
19 was published?

20 A I do not.

21 Q Do you recall if it was in the last five
22 years?

23 A I believe it was older than that.

24 Q 10 years?

25 A Possibly. I really don't remember. Never got

1 my hands on one, so I kind of forgot about it.

2 Q Was it a system that used a mobile device or
3 was it one that had a built-in display?

4 A I do not remember.

5 Q Do you remember if it was a publicly released
6 product?

7 A At least it was publicly disclosed because I
8 read it in a magazine.

9 Q Right. Sure. Yeah. I'll rephrase.
10 Do you recall if it was a commercially
11 available product that someone could go out and
12 purchase?

13 MR. KIKLIS: Objection. Scope.

14 THE WITNESS: I never got to see one
15 personally, is the best I -- answer I can give on that.

16 MR. ALEXANDER: All right. I think we've
17 been going a little over an hour. Let's go ahead and
18 take a 10-minute break.

19 THE WITNESS: Okay.

20 MR. KIKLIS: That's good with us.

21 THE REPORTER: All right. Let me take us
22 off the record. We are now off the record. It is 3:05
23 p.m., Eastern Standard Time.

24 (Off the record.)

25 THE REPORTER: We are back on the record.

1 It is 3:21 p.m., Eastern Standard Time.

2 You may proceed.

3 BY MR. ALEXANDER:

4 Q All right. Mr. Keller, I'm putting Exhibit 2
5 for this deposition back on the screen. That was the
6 Kondo reference. Feel free to refer to your paper copy.

7 A All right. That is here. Yeah. I've got the
8 correct one.

9 Q Great. Could you turn to paragraph 24,
10 please?

11 A All right. I am there.

12 Q So in this paragraph, in the second sentence,
13 Kondo says, "In other words, the user touching the panel
14 causes the human body (contact object) to act as the
15 impedance imparting body (capacitor or the like
16 capacitance)."

17 A I --

18 Q And then it --

19 A -- see that.

20 Q -- goes on to say, "While" -- okay -- "While
21 in-phase and same potential alternating currents are
22 applied to the four corners of the touch panel 1506 when
23 a finger or the like touches the touch panel 1506 the
24 current changes in accordance with the impedance of the
25 human body. Furthermore, the contact coordinates and

1 the coordinate system of the touch panel 1506 can be
2 calculated from the ratio of the currents detected at
3 the four corners." Did you see all that in paragraph
4 24?

5 A I do.

6 Q Do you believe that accurately describes how
7 projected capacitive touchscreens in mobile devices
8 operate?

9 A Let me read that again first.

10 Q Sure.

11 A What was your question? It's not fully
12 accurate.

13 Q Okay. Can you describe any inaccuracies,
14 please?

15 A It's -- I find it strange, "to act as an
16 impedance imparting body." It's a charge imparting
17 body, as we know. And let's see, where else? Which,
18 understandably, because it even says capacitor, and so
19 that's a charge, so letting out, intaking. It is weird
20 that it mentions alternating currents unless you happen
21 to be -- have electric field near you that is an
22 alternating current, because normally it's an AC
23 differential, but it could be. Yeah.

24 I keep using the word impedance instead of,
25 basically, electrical charge, which we measured in

1 voltage. So that's where I see that a translation
2 probably did not come through perfectly there.

3 Q Have you investigated whether that's a
4 translation problem?

5 A I have not investigated that.

6 Q You don't know whether that's a translation
7 problem or not, correct?

8 A That would be correct.

9 Q I think we've seen two versions of this
10 document with a certificate of translation accuracy from
11 two different folks, right?

12 A I believe so. But when you read the second
13 line in there, when it talks about the imparting body of
14 a capacitor when those -- it is a charge. Impedance is
15 -- you're well aware -- is like a resistance if it's a
16 DC circuit.

17 Q Do you know if this is an accurate description
18 of how a surface capacitive touchscreen operates?

19 A It does not appear to be fully accurate, due
20 to the -- I think it is an incorrect term, impedance.

21 Q Okay. So you think this description would
22 also have the same inaccuracies as it relates to a
23 surface capacitive touchscreen?

24 A I didn't make any distinguished differences
25 between a capacitive touchscreen and what you call here

1 a surface capacitive touchscreen.

2 Q Okay. I just want to make sure I understand
3 you correctly. You're saying that this passage that
4 we're looking at in paragraph 24 is also inaccurate as
5 it relates to the operation of a surface capacitive
6 touchscreen?

7 A I believe the word in paragraph 24, impedance,
8 should -- probably means charge, electrical charge. For
9 the most --

10 Q Okay.

11 A -- part the paragraph seems correct then.

12 Q Okay. I've put Chu back on the screen. Mr.
13 Keller, could you take a look at Figure 5 for me. Are
14 you there?

15 A Yes, I'm there. Figure 5.

16 Q If Chu included adding in that white space
17 underneath the probe pad, or above it, depending on the
18 orientation, would the padding cause the probe pad to
19 resist deformation?

20 A If Chu -- the question is, if Chu put padding
21 behind probe pad 30, would that change the
22 compressiveness? Is that --

23 Q Sure. That wasn't my wording, but that's a --
24 that's a fair, I think, rephrasing of it.

25 A Okay. Obviously, anything that is put in

1 there, besides air, is going to add some physical
2 resistance to deformation.

3 Q Okay. I'm working on putting your declaration
4 back up, that was Exhibit 1, your declaration on the 075
5 patent.

6 A All right.

7 Q Give me a minute, and I'll point you to a
8 paragraph. All right. Can you go to -- let's see. I'm
9 going to give you a page number, I think that'll be
10 easier. It's page 30 of the exhibit, going in the lower
11 righthand corner.

12 A All right. I am there.

13 Q Okay. Here, at the -- toward the bottom of
14 the page you have a lengthy quotation from the Chu
15 reference, correct?

16 A I guess it's lengthy.

17 Q Well, you have a quotation from the Chu
18 reference, correct?

19 A Okay. Yes.

20 Q Okay. I want to point you to the sentence
21 that begins at the -- I guess the third to last line,
22 you would say, "A human body is a," do you see that?

23 A Third line from the end. Yes, I see that.

24 Q "A human body is a good transferor and
25 transferee of electric charge because of the

1 electromagnetic field around the human body at all
2 times." Do you see that?

3 A I do.

4 Q What does Chu mean by that?

5 A Mostly because the salts in the waters of our
6 body makes for a fairly good conductor, which is why
7 it's not good to swim near boats in fresh water.

8 Q Why not? Just for my edification, so I can
9 avoid getting myself in trouble.

10 A All right.

11 MR. KIKLIS: Objection. Scope.

12 THE WITNESS: If there's wires,
13 electrical wires, in freshwater from one side -- for a
14 big potential difference from one side to the other, if
15 you happen to be doing this, you're the lowest
16 resistance across your -- in salt water you're much
17 closer to the resistance of the water, and so you may
18 not be the lowest resistance point, so you may not get
19 electric charges through your heart. Safety --

20 MR. ALEXANDER: Okay. So you think --

21 THE WITNESS: -- advice --

22 MR. ALEXANDER: -- Chu -- I'm sorry, I
23 didn't mean --

24 THE WITNESS: I said --

25 MR. ALEXANDER: -- to interrupt.

1 THE WITNESS: -- safety advice for the
2 day.

3 BY MR. ALEXANDER:

4 Q So in Chu, in that -- in that sentence, I
5 pointed you to, you think he's talking about the
6 electrical magnetic field in the human body, rather than
7 around the human body?

8 A Because of electromagnetic fields around the
9 body, we absorb it, and can have a different potential
10 than other items around us.

11 Q Okay. What is that electromagnetic field
12 around the human body at all times?

13 A Some of it is caused by increased potential
14 from walking, especially wintertime now, on carpets,
15 building up charges. And then there's the -- well,
16 actually, that's a very big one for these type of
17 devices. But also, we're basically a large capacitor.
18 The electromagnetic fields all around us can have
19 different effects to us. Small, but it's there.

20 Q Okay. Let's move forward in your declaration
21 to page 116, going by the lower righthand numbers.

22 A All right.

23 Q All right. This is where you start talking
24 about Claim 18, correct?

25 A It is Claim 18, correct.

1 Q Okay. You have some -- you believe that Claim
2 18 is not clear; is that correct?

3 A It is very confusing.

4 Q In paragraph 158, in the -- let's see, the
5 one, two -- the fourth sentence, it begins, "Because the
6 second surface," do you see that?

7 A "Because the second surface"?

8 Q Yeah. Do you see what I'm talking about?

9 A I do.

10 Q Okay. So here it's -- you say, "Because the
11 second surface is facing and disposed on the second
12 portion, it does not seem apparent how it could also
13 touch the touchscreen, as the claim requires."

14 I was reading Claim 18, and I didn't see where
15 it requires that the second surface face the second
16 portion, so I was wondering, one, if I missed something,
17 or if I didn't miss something, where you're getting that
18 requirement that it face -- the second surface face the
19 second portion?

20 A Let me read through here. I'm going to pull
21 up the actual patent 075 here, just be a little quicker,
22 okay?

23 Q Sure.

24 A The declaration I have, 18 is just spaced
25 apart. (Reading to self.) I have to read through.

1 "Because the second surface is facing" -- all right.

2 Let's go to page -- or to Figure 7A.

3 Q (Indiscernible - audio disruption).

4 A We heard nothing but static from you.

5 Q I'm with you. 7A.

6 A Okay. All right. Now let's follow down. So
7 on top there, number 1, there's a green section. "The
8 first portion accessible from exterior, user interface
9 (sic) with this portion." And that is in 18. Let's
10 just make sure we get this correct.

11 Q Well, let me -- let me actually stop you
12 before -- I mean, I don't want to -- I'll let you walk
13 through your 7A to your heart's content, but the first
14 thing I -- the question I actually asked that was
15 pending is whether Claim 18 requires that the second
16 surface of the electric shield face the second portion
17 of the -- I believe it's the input. But --

18 A Okay. Where are we? (Reading to self.)
19 Second surface. (Reading to self.) All right. So the
20 question is, does the second surface touch the second --
21 the shield -- let's see.

22 Q No. I think we're getting a little off track.
23 So maybe --

24 A Okay.

25 Q -- if you don't mind, I'll stop you there, I

1 can repeat the question.

2 A That would help.

3 Q Okay. So I'm starting from paragraph 158 of
4 your declaration, and I'm looking at the fourth
5 sentence. And it starts, "Because the second surface is
6 facing and disposed on the second portion, it does not
7 seem apparent how it could also touch the touchscreen as
8 the claim requires."

9 And what I asked you is, does Claim 18 require
10 that the second surface of the electric shield face the
11 second portion of the input device?

12 A (Reading to self.) According to reading the
13 Claim 18, "When the second surface is disposed on the
14 second portion in the interior, it is generally centered
15 on the horizontal direction between the left and right
16 regions, and when the second surface electrical field is
17 configured to contact a central portion of the
18 touchscreen," so according to this it's -- claims it
19 should touch that, correct?

20 Q It claims, but can you -- can you, just for
21 the sake of clarity, say -- when you say, "it should
22 touch it," or "it should touch that," can you tell me
23 what "it" and "that" are?

24 A Well, you can see why we're having difficulty
25 trying to understand what this claim is. In fact, I

1 think one of the better ways to explain why it's so
2 difficult to understand is if I read it. Which you
3 probably don't want one to do, but -- so that's why I
4 have --

5 Q Right now I'm just trying to understand. I
6 mean, when you say -- I mean, you say, "it is supposed
7 to touch that." Can you tell me what you meant when you
8 said that?

9 A Okay. The second surface of the electric
10 shield is configured to contact the second portion of
11 the touchscreen of the mobile device.

12 Q Okay. But -- okay. There's no requirement
13 that the second surface of the electrical shield face
14 the second portion of the input device, correct?

15 A It should. It has to make a contact.

16 Q Well, it says the second surface is disposed
17 on the second portion, right?

18 A To contact a central portion of the
19 touchscreen of the mobile electrical device, electronic
20 device, and selectively transfer a capacitive touch
21 input to the touchscreen, in response to user
22 interaction with the first portion. So they're -- it
23 appears it's going to have to touch there, so --

24 Q It's going to have to touch the touchscreen,
25 correct?

1 A What is your "it" that you're using this time?

2 Q The electric shield, the second surface of the
3 electric shield is contacting the touchscreen, correct?

4 A My understanding.

5 Q Maybe I -- let me ask a different question,
6 because maybe I've misunderstood, or maybe we have a
7 significantly different understanding of some of these
8 claim terms.

9 In paragraph 158 of your declaration, when you
10 say --

11 A Okay.

12 Q -- the second surface is facing and disposed
13 on the second portion of -- and I believe you're
14 referring to the second portion of the input device,
15 correct, based on the preceding sentence?

16 A Of the input device shown as -- excuse me --
17 as there's the -- give me a second here. On the number
18 -- okay. The question was what again?

19 Q All right. Let me back up a sentence in
20 paragraph 158, so I'm looking now at the third sentence
21 of paragraph 158. And you say, "But the second surface
22 is disposed on the second portion of the input device,"
23 correct?

24 A Correct.

25 Q When you refer to the input device there, are

1 you referring to the touchscreen?

2 A I've read this. Hold on. What is your fourth
3 word of the sentence here? It said -- when you refer to
4 Pit Bulls?

5 MR. KIKLIS: What?

6 THE WITNESS: That's what my text-to-
7 speech thing says here. Could you say the sentence
8 again?

9 MR. ALEXANDER: It's all right. As
10 you've probably figured out by now the text-to-speech is
11 not perfect, and that's why we have the court reporter
12 here --

13 MR. KIKLIS: Yeah.

14 MR. ALEXANDER: -- who will generate the
15 final transcript.

16 THE WITNESS: Yeah. When I read it --

17 BY MR. ALEXANDER:

18 Q I read your third sentence of paragraph 158.
19 You've read your third sentence of paragraph 158,
20 correct?

21 A Yes.

22 Q Is the input device you are referring to in
23 that sentence the touchscreen?

24 A I don't remember. (Reading to self.) This
25 was such a difficult claim to try to understand. I've

1 got to read the -- if we look on page 1 --

2 Q Well, right now I'm just trying to understand
3 what you mean by input device, not what the claim means.

4 So --

5 A I'm trying to remember, too.

6 Q -- let's start with what you mean by input.

7 A I'm trying to remember exactly because it's
8 very difficult. (Reading to self.) All right. That is
9 going to be -- the second surface is the mechanism that
10 is shown in 7A, which I believe we're showing here as
11 30, the one that deforms when the lever is pressed.

12 Q Okay. In your next sentence, and the fourth
13 sentence of paragraph 158, you say, "Because the second
14 surface is facing and disposed on the second portion."
15 So the second surface of the electric shield is facing
16 and disposed on the second portion of the input device,
17 right? That's what you're saying? The second surface
18 of the electrical shield is facing and disposed on the
19 second portion of the input device?

20 A When you're asking the question, because the
21 second surface of what is facing -- I'm not sure, the
22 second surface of what that is. There's the --

23 Q Well, this is your report, right? This is
24 your -- I'm sorry -- your declaration?

25 A Uh-huh. That's -- I tried to understand Claim

1 18 the best I could, and because it's so confusing --

2 Q Well, I mean, Claim 18, I mean, you can say
3 Claim 18 is confusing if you want to, but it's not
4 confusing on what the second surface refers to, right?
5 It's -- this is actually stated in the claim, a second
6 surface of the electric shield, right? So you don't
7 have any doubt about that, do you?

8 A You did not get my question correct. I asked,
9 or tried to explain, there's second surface of the
10 electric shield or second surface of the mechanism.
11 That's what I was asking.

12 Q Does Claim 18 -- does Claim 18 refer to the
13 second surface of a mechanism? Is there another
14 instance of second surface in Claim 18? That's what I'm
15 asking you. It seems to be you're suggesting that Claim
16 18 uses second surface in a context. If that -- if you
17 think that's the case, please point me in Claim 18 to
18 where you're getting that from.

19 A That is not what I stated.

20 Q Okay. Let me try this a different way. I
21 don't think anything in Claim 18 requires the second
22 surface of the electric shield to face the second
23 portion of the input device. Do you agree or disagree
24 with that?

25 A (Reading to self.) Say it again, please.

1 Q I don't think anything in Claim 18 requires
2 that a second surface of the electric shield face the
3 second portion of the input device. Do you agree or
4 disagree with that?

5 A I disagree with that.

6 Q Okay. Please point me to the claim language
7 in Claim 18 that you believe requires the second surface
8 of the electric shield to face the second portion of the
9 input device.

10 MR. KIKLIS: Objection. Asked and
11 answered.

12 THE WITNESS: Because the Claim 18 is so
13 confusing, one has to go to the specification, to try to
14 see if I can understand what it is alluding to. When I
15 go to that --

16 BY MR. ALEXANDER:

17 Q Before we go to the specification, I'd like
18 you to answer my question about the claim language. Is
19 there any specific claim language in Claim 18 that you
20 believe requires the second surface of the electric
21 shield to face the second portion of the input device?

22 MR. KIKLIS: Objection. Asked and
23 answered.

24 THE WITNESS: I have to --

25 MR. ALEXANDER: I don't know if you're

1 just trying to get a rise out of me, Counsel, but this
2 is getting ridiculous.

3 MR. KIKLIS: Say what you will, but it's
4 true. Asked and answered. Objection.

5 THE WITNESS: Claim 18 is very --

6 MR. ALEXANDER: Your expert clearly does
7 not understand his own declaration. So if you want to
8 rely on the answers that have been given, that's fine,
9 but he has not answered the question that is pending
10 right now.

11 MR. KIKLIS: I disagree. You're being
12 argumentative. And again, the objection stands. He's
13 already explained it. Objection. Asked and answered.

14 THE WITNESS: Claim 18, as I mentioned,
15 is a very difficult one to try to understand. It's very
16 confusing. When reading through it, it's confusing. So
17 one naturally goes to the specification to try to
18 understand what it is explaining. And when --

19 BY MR. ALEXANDER:

20 Q So you're not able to point to any claim
21 language in Claim 18 that requires the second surface of
22 the electric shield to face the second portion of the
23 input device --

24 MR. KIKLIS: Objection.

25 MR. ALEXANDER: -- correct?

1 THE WITNESS: So your exact --

2 BY MR. ALEXANDER:

3 Q Are you okay, Mr. Keller?

4 A Are you okay, Mr. Cortney?

5 MR. KIKLIS: Objection. Argumentative.

6 MR. ALEXANDER: I'm asking a serious
7 question.

8 THE WITNESS: Yes.

9 BY MR. ALEXANDER:

10 Q Are you capable of continuing?

11 A Yes. I was reading --

12 MR. KIKLIS: Objection. Argumentative.

13 THE WITNESS: You asked me if I saw
14 anything in Claim 18 that states -- what did you state
15 exactly? Oops, it's passed by. And so I was reading
16 through Claim 18 to find exactly what you stated there.

17 MR. ALEXANDER: Okay. Great.

18 THE WITNESS: All right. Being that it
19 is too difficult to understand what it is saying, I do
20 not understand Claim 18 for when it talks about the
21 different surfaces. So to understand, understand Claim
22 18, I have to go to the specification. And the
23 specification has images, drawings, such as 7A, which
24 helps me to understand.

25 And so the specification, drawing 7A

1 specifically, makes me feel that -- let's get your exact
2 terminology. Please state your question exactly, and
3 then I can answer that.

4 MR. ALEXANDER: Well, I asked you to
5 point to the language in Claim 18, and instead you're
6 wanting to look at the specifications. I actually
7 didn't ask you anything about the specification. So as
8 far as I understand, there's no question pending at the
9 moment.

10 THE WITNESS: Okay.

11 MR. ALEXANDER: I think I'm almost done.
12 I'd like to take a short break to check my notes. I
13 might have a few more questions, but I think we're
14 getting close to the conclusion, from my perspective.

15 THE WITNESS: Okay.

16 MR. KIKLIS: 10 minutes? How many
17 minutes you need?

18 MR. ALEXANDER: 10 minutes is plenty.

19 MR. KIKLIS: Okay.

20 THE WITNESS: Thank you.

21 MR. KIKLIS: That works fine.

22 THE REPORTER: Okay. I will take us off
23 the record. We are off the record. It is 4:05 p.m.,
24 Eastern Standard Time.

25 (Off the record.)

1 THE REPORTER: We are back on the record.

2 It is 4:17 p.m., Eastern Standard Time.

3 You may proceed.

4 MR. ALEXANDER: Mr. Keller, I don't have
5 any further questions for you now, subject to any
6 questions your counsel may ask you on redirect.

7 THE WITNESS: Okay.

8 MR. KIKLIS: Okay. Let's take a break.
9 I'll need about 10 minutes.

10 THE REPORTER: Okay. We are going off
11 the record. It is 4:18 p.m., Eastern Standard Time.

12 (Off the record.)

13 THE REPORTER: We are back on the record.
14 It is 4:25 p.m., Eastern Standard Time.

15 You may proceed.

16 MR. KIKLIS: Petitioner, Google has no
17 questions at this time. This deposition is closed.

18 Thank you very much, everybody.

19 THE REPORTER: Please don't get off the
20 record. Give me one second.

21 All right. Before we get off the record
22 I just need to confirm, will the witness be reading and
23 signing the transcript?

24 MR. KIKLIS: To be decided.

25 THE REPORTER: Okay. And it is my

1 understanding that the transcript is going to be ordered
2 by Mr. Alexander, and it will be ready for January 26 of
3 2024. Is that correct, Mr. Alexander?

4 MR. ALEXANDER: Yes.

5 THE REPORTER: Okay. And Mr. Kiklis,
6 will you be ordering?

7 MR. KIKLIS: Yes. I'll have to get back
8 to you on that.

9 THE REPORTER: So you're unsure if you're
10 ordering a copy?

11 MR. KIKLIS: We will order a copy of the
12 transcript, but let me touch base with my client, and
13 we'll get back with you. Okay?

14 THE REPORTER: Okay. So I'll put down
15 that you will be ordering, but you're not sure about a
16 reading?

17 MR. KIKLIS: About timing, yeah.

18 THE REPORTER: Okay. And timing?

19 MR. KIKLIS: Yes.

20 THE REPORTER: Okay. Perfect. I'm going
21 to take us off the record now. Give me one second. We
22 are now off the record, it is 4:27 -- one second.

23 We are now off the record, it is 4:27
24 p.m., Eastern Standard Time.

25 (Proceedings concluded at 4:28 p.m.)

1 (Read and sign requested.)

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1 CERTIFICATE OF REPORTER

2

3 I, Gina Nilio, hereby certify:

4 That the foregoing proceedings were taken
5 before me at the time and place therein set forth;

6 That the proceedings were recorded by me and
7 thereafter formatted into a full, true, and correct
8 transcript of same;

9 I further certify that I am neither counsel
10 for nor related to any parties to said action, nor in
11 any way interested in the outcome thereof.

12

13 DATED, this 25th day of January 2024.

14

15



16

17

Gina Nilio, CER-2150

18

Certified Electronic Reporter

19

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21

22

23

24

25

1 A C K N O W L E D G E M E N T

2

3 I do hereby certify that having been first
4 duly sworn to testify to the truth, I gave the above
5 testimony on January 12, 2024.

6

7 I further certify that the foregoing
8 transcript is a true and correct transcript of the
9 testimony given by me at the time and place specified.

10

11

12

KURTIS KELLER

14

15 Sworn to before me this ____ day of _____, 20__

16

17

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19

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25

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