1 IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
2 WACO DIVISION

3 ALIGN TECHNOLOGY, INC. *
* June 22, 2026
4 VS. *
* CIVIL ACTION NO. 6:24-CV-187
5 CLEARCORRECT OPERATING, *
LLC, ET AL. *
6

BEFORE THE HONORABLE ALAN D ALBRIGHT
7 JURY TRIAL PROCEEDINGS
Volume 1 of 7
8

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ALIGN – EXHIBIT 2041
ClearCorrect Operating, LLC. v. Align Technology, Inc. IPR2025-00820

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09:01 1 (Hearing begins.)
09:01 2 THE BAILIFF: All rise.
09:01 3 THE COURT: Good morning, everyone. You
09:01 4 may be seated. Thank you.
09:01 5 My understanding is we have a couple
09:01 6 of --
09:01 7 Oh, I'm sorry. Jen, will you call the
09:01 8 case.
09:01 9 DEPUTY CLERK: A civil action in Case
09:01 10 6:24-CV-187, Align Technology, Incorporated, versus
09:01 11 ClearCorrect Operating, LLC, et al. Case called for a
09:01 12 jury trial proceeding.
09:01 13 THE COURT: Why don't we go ahead and
09:01 14 have each side announce everyone who is going to be at
09:01 15 your table, and then when I bring the jury in --
09:01 16 there's something -- let's go ahead and I'll have them
09:01 17 do it then. We don't need to do that now. I don't
09:01 18 think you have to do it twice on the record. So that
09:01 19 way everyone can kind of stand up when you introduce
09:01 20 yourself when the jury comes in.
09:02 21 So, Mr. Durst, is there anything for the
09:02 22 plaintiff?
09:02 23 MR. DURST: Your Honor, we are ready to
09:02 24 proceed.
09:02 25 THE COURT: Okay. And for defendant?

09:02 1 MR. MUELLER: Two quick things,
09:02 2 Your Honor.
09:02 3 THE COURT: Sure.
09:02 4 MR. MUELLER: Good morning, Your Honor.
09:02 5 Joe Mueller on behalf of the defendants. Just two
09:02 6 quick things.
09:02 7 First, we would just respectfully
09:02 8 request, as in our other trials with Your Honor, a
09:02 9 running objection with respect to pretrial motions that
09:02 10 we lodged for the Daubert motions, for example, but we
09:02 11 understand those to be definitive rulings. And we
09:02 12 would just respectfully request a running objection for
09:02 13 the motions that we lost before trial.
09:02 14 THE COURT: Sure.
09:02 15 MR. MUELLER: And the second and final
09:02 16 thing, Your Honor, with respect to the description of
09:02 17 Straumann, the Straumann companies, the defendants,
09:02 18 Your Honor granted a motion in limine precluding
09:02 19 discussion of the details of the dental implant
09:02 20 business which is not relevant to this case.
09:02 21 I would just note that because we have no
09:02 22 objection to the plaintiff saying that Straumann sells
09:03 23 products, including dental implants. That happened in
09:03 24 jury selection. We have no objection to that. We just
09:03 25 want to make sure that doesn't open the door to what

09:03 1 Your Honor precluded on the marketing practices and so
09:03 2 on, the dental implants, which have nothing to do with
09:03 3 the case.
09:03 4 So I just wanted to note that we don't
09:03 5 object to just the simple statement that Straumann
09:03 6 sells products, including dental implants, provided it
09:03 7 doesn't open the door.
09:03 8 THE COURT: Yes, ma'am.
09:03 9 MS. DURIE: Thank you, Your Honor.
09:03 10 I presume that the request will go both
09:03 11 directions with respect to --
09:03 12 THE COURT: No. I'm only going to do it
09:03 13 one -- I'm kidding. Yes. That's the -- of course.
09:03 14 MS. DURIE: Completely understood,
09:03 15 Your Honor. With respect to Straumann, all I intend to
09:03 16 say is that they are in the dental implants --
09:03 17 MR. MUELLER: And that's fine,
09:03 18 Your Honor.
09:03 19 THE COURT: And if I can have each of
09:03 20 you -- just you two come up to the bench for a second.
09:03 21 (Bench conference.)
09:03 22 THE COURT: So it's not just you two
09:04 23 because it's here. But I didn't want to say this out
09:04 24 loud.
09:04 25 While I was on my trip to Brazil, I

09:04 1 ruptured my eardrum, right ear. I can't hear out of my
09:04 2 right ear. So it's -- I just wanted -- and you are
09:04 3 welcome to -- it's just if I turn my head when you're
09:04 4 up here, that's why.
09:04 5 And also, it has caught my -- when I was
09:04 6 in court last week, it's causing me some problems when
09:04 7 I talk, doing things.
09:04 8 I think I'm fine, but I wanted you to
09:04 9 know, and you can certainly let everyone on the team
09:04 10 know. But also, because the witness is to my right, so
09:04 11 I'm -- ordinarily if I can't hear something, I worry
09:04 12 that it's not audible, I'm just going to -- it's up to
09:04 13 you all listening to hear whether or not you think the
09:04 14 jury can hear because I -- ordinarily I can actually
09:04 15 hear the person, but I won't be able to do that. But I
09:04 16 just wanted you all to know if I act odd at all, why
09:04 17 I'm -- it will be I'm trying to hear. I can hear you
09:05 18 out of my left ear.
09:05 19 MR. MUELLER: I'm sorry to hear that.
09:05 20 MS. DURIE: Thank you.
09:05 21 THE COURT: So I'm going to line the jury
09:05 22 up.
09:05 23 MS. DURIE: Yes.
09:05 24 (Bench conference concludes.)
09:10 25 THE BAILIFF: All rise.

09:10 1 THE COURT: Please remain standing for
09:10 2 the jury.
09:10 3 (Jury entered the courtroom.)
09:10 4 THE COURT: Thank you. You may be
5 seated.
09:11 6 Jen, will you call the case, please?
09:11 7 DEPUTY CLERK: A civil action in Case
09:11 8 6:24-CV-187, Align Technology, Incorporated, versus
09:11 9 ClearCorrect Operating, LLC. Case called for a jury
09:11 10 trial proceeding.
09:11 11 THE COURT: Counsel, are you prepared to
09:11 12 go forward?
09:11 13 MS. DURIE: We are, Your Honor.
09:11 14 THE COURT: Would you do me the --
09:11 15 Mr. Mueller, I assume so?
09:11 16 MR. MUELLER: Yes, Your Honor.
09:11 17 THE COURT: Would you do me the favor of
09:11 18 introducing -- reintroducing your trial team, the folks
09:11 19 who are going be standing up in front of the jury to
09:11 20 the jury, and we will get started.
09:11 21 MS. DURIE: Of course, Your Honor.
09:11 22 Thank you very much, and good morning,
09:11 23 everyone. My name is Daralyn Durie. I represent the
09:11 24 plaintiff in this case, Align Technology.
09:11 25 And I'd like to introduce my colleagues

09:11 1 to you: Michael Tubach, Tim Durst, Brian Nash, Rich
09:11 2 Hung, as well as from Align Technology, Avi Kopelman
09:12 3 and Dr. Chunhua Li.
09:12 4 Thank you.
09:12 5 THE COURT: Mr. Mueller?
09:12 6 MR. MUELLER: Good morning, ladies and
09:12 7 gentlemen. It's nice to see you again.
09:12 8 Let me reintroduce myself and my
09:12 9 colleagues. My name is Joe Mueller, and with me are
09:12 10 Todd Zubler, Vinita Ferrera, Travis Underwood, Jordan
09:12 11 Hirsch, and these are the folks who will be, along with
09:12 12 me, examining some of the witnesses in the case. We
09:12 13 also have with us as our corporate representative
09:12 14 Ms. Laura Sterling.
09:12 15 Thank you, Your Honor.
09:12 16 THE COURT: You bet.
09:12 17 Ladies and gentlemen of the jury, the
09:12 18 first stage in a jury trial is the opening argument.
09:12 19 The opening argument I like to think of as a roadmap or
09:12 20 a blueprint for what the lawyers believe they're going
09:12 21 to be able --
09:12 22 And, Mr. Mueller, are you going to do
09:12 23 your opening immediately after theirs?
09:12 24 MR. MUELLER: Yes. I am, Your Honor.
09:12 25 THE COURT: Okay.

09:12 1 I like to think of it as just a roadmap
09:12 2 for you all. And it's important but it's also
09:13 3 important for you to understand that it is not evidence
09:13 4 in this case. The evidence in this case will not begin
09:13 5 until the plaintiff calls their first witness and that
09:13 6 first witness is sworn.
09:13 7 At the end of the trial, I'm going to
09:13 8 instruct you that you can only consider the evidence
09:13 9 when you are deliberating. So, again, while what the
09:13 10 counsel are about to tell you is important and
09:13 11 hopefully entertaining, it is not to be considered by
09:13 12 you when you begin your deliberations.
09:13 13 With that being said, counsel, would you
09:13 14 like any warning?
09:13 15 MS. DURIE: If I could have a five-minute
09:13 16 warning, Your Honor.
09:13 17 THE COURT: So 40 and 5?
09:13 18 MS. DURIE: Yes.
09:13 19 THE COURT: Okay. I'd be happy to do
09:13 20 that.
21 OPENING STATEMENT ON BEHALF OF THE PLAINTIFF
09:13 22 MS. DURIE: Thank you.
09:13 23 And again, good morning. This case is
09:13 24 about a company that earned its place in the market
09:13 25 through almost three decades of hard work, of

09:14 1 trial-and-error experimentation, of innovation, and of
09:14 2 investment. That company is the plaintiff in this
09:14 3 case, my client, Align Technology.
09:14 4 Before Align, orthodontics involved goop.
09:14 5 Some of you may remember this. It involved metal
09:14 6 braces and metal palate expanders. Today it's a whole
09:14 7 new world. We have digital scanners to take a digital
09:14 8 impression. And we can move teeth with these
09:14 9 custom-made clear aligners. We're here in court today
09:14 10 to protect the years and years of work and investment
09:14 11 that led to these innovations.
09:14 12 We're here because another company came
09:15 13 into the market late, started off behind, and fell
09:15 14 further behind and took a shortcut and used our
09:15 15 proprietary technology, technology on which we were
09:15 16 awarded patents by the United States government. That
09:15 17 company is the defendant in this case, Straumann.
09:15 18 Straumann is a company based in
09:15 19 Switzerland that sells, among other products, dental
09:15 20 implants. They decided they wanted to get in on the
09:15 21 business, and they bought a company here to try to
09:15 22 compete with Align.
09:15 23 But as I said, they started off behind
09:15 24 and they fell further behind. And when they got caught
09:15 25 infringing patents, rather than accepting

09:16 1 responsibility for their actions, they turned around
09:16 2 and blamed us for the consequences of their own
09:16 3 actions. And they filed what are called counterclaims,
09:16 4 accusing Align of being a monopolist, accusing us of
09:16 5 anticompetitive conduct responsible for their harms.
09:16 6 But what the evidence is going to show is
09:16 7 that internally Straumann recognized exactly what was
09:16 8 going on. Their problems were the result of their own
09:16 9 decisions, lack of product innovation, aligners that
09:16 10 often didn't fit right, and poor leadership, what their
09:16 11 CEO referred to himself as self-inflicted wounds.
09:17 12 I am enormously proud to represent Align
09:17 13 Technology in this case. And one of the reasons that I
09:17 14 am so proud is because Align has truly transformed the
09:17 15 provision of dental care.
09:17 16 You're going to hear early in this case
09:17 17 from two orthodontists, Dr. Mitra Derakhshan and
09:17 18 Dr. Maureen Valley. And part of what they're going to
09:17 19 talk to you about is the importance of oral health and
09:17 20 the way in which Align and Invisalign have transformed
09:17 21 oral health. Because to be sure, it's partly about
09:17 22 aesthetics, and it's partly about confidence that comes
09:17 23 from having a smile that you're proud of.
09:17 24 But it also matters to your oral health,
09:18 25 to your ability to brush your teeth, floss. It

09:18 1 prevents gum disease. It can help avoid tooth loss.
09:18 2 And we are learning more and more about how oral health
09:18 3 is critically important to overall health, to gut
09:18 4 health, even to brain health.
09:18 5 So these innovations have made a huge
09:18 6 difference in terms of access to oral healthcare and
09:18 7 health outcomes.
09:18 8 Now, I said this is a patent case. And
09:18 9 this case is about five patents that we were awarded by
09:18 10 the United States government for our inventions. Four
09:18 11 of these patents involve the material that is used to
09:18 12 make these clear plastic aligners, and Dr. Li is the
09:18 13 lead inventor on those patents.
09:18 14 The other patent involves technology in
09:18 15 this scanner, this intraoral scanner. And the lead
09:19 16 inventor on that patent is Dr. Avi Kopelman.
09:19 17 Now, I'm going to talk to you this
09:19 18 morning about why it is that Straumann infringes on our
09:19 19 patents, on our intellectual property.
09:19 20 Now, Straumann denies that they infringe.
09:19 21 They're going to tell you that they don't use our
09:19 22 inventions. But I think they're also going to say even
09:19 23 if we do, the patents are invalid. They're no good.
09:19 24 And so I'm going to touch briefly on that as well.
09:19 25 And finally, I'm going to respond to this

09:19 1 allegation that we did anything wrong by virtue of our
09:19 2 fair competition with Straumann.
09:19 3 But before we get into the details of
09:19 4 infringement, I want to take a step back and I want to
09:19 5 talk a little bit about how it is that we got here.
09:20 6 So Align was founded back in 1997 by two
09:20 7 college friends who had this remarkable new idea that
09:20 8 instead of braces, maybe they could use clear plastic
09:20 9 aligners that were custom 3D printed. This was in the
09:20 10 very early days of 3D printing technology in 1997.
09:20 11 Custom 3D printed for every individual.
09:20 12 Now, this required a ton of change in how
09:20 13 you thought about orthodontics because rather than
09:20 14 going back to the orthodontist every few weeks and
09:20 15 having them fiddle with the wires, you had to plan out
09:20 16 the whole course of treatment and then make this set of
09:20 17 custom aligners that you would wear for a week or two,
09:20 18 then put in the next one, then put in the next one, and
09:20 19 take you through your whole treatment journey.
09:20 20 In 1998, the company had about 25
09:21 21 employees. This is a picture from the very early days.
09:21 22 And they were working on this technology and on trying
09:21 23 to bring all of this together. And in 1999, Align came
09:21 24 out with Invisalign, which was the first-ever clear
09:21 25 aligner to use to straighten teeth.

09:21 1 Now, since then, there have been a whole
09:21 2 series of innovations, new materials that have been
09:21 3 used in the aligner itself. In 2006, this digital
09:21 4 scanner first came onto the market.
09:21 5 In 2008, Align came out with a product
09:21 6 for teenagers so that teenagers, especially, for
09:21 7 example, who were playing sports, where having metal in
09:21 8 your mouth was a problem, would have access to clear
09:21 9 aligner technology too.
09:21 10 They came out with new ways to apply
09:21 11 force to the teeth to be able to move them in the bone.
09:21 12 They started doing clinical studies with respect to new
09:22 13 materials. They came out with an outcome simulator so
09:22 14 that you could see what the treatment was going to look
09:22 15 like and how your teeth would look at the conclusion of
09:22 16 that treatment.
09:22 17 They came out with new material. We're
09:22 18 going to talk more about that.
09:22 19 New scanners. New scanners that could
09:22 20 not only scan your teeth, but with respect to this,
09:22 21 check for cavities at the same time and see cavities
09:22 22 without the need necessarily to get x-rays.
09:22 23 They came out with a virtual care device
09:22 24 so that rather than having to go back to the
09:22 25 orthodontist, you could use your phone to take a

09:22 1 picture of your mouth and your doctor could see it
09:22 2 remotely. Super helpful if you're in a rural area, for
09:22 3 example, and it's hard to get to the orthodontist.
09:22 4 A palate expander system for kids whose
09:22 5 mouths need to be made larger.
09:22 6 And new scanners and yet more scanners.
09:23 7 A continuous history over almost 30 years of product
09:23 8 innovation.
09:23 9 This kind of innovation does not come
09:23 10 cheap. Just since 2017, Align has spent 2.2 --
09:23 11 whoops -- billion dollars on investments.
09:23 12 Can you check? We're losing the color on
09:23 13 the slides.
09:23 14 Do you know? I apologize, Your Honor.
09:23 15 THE COURT: No problem.
09:23 16 (Off-the-record discussion.)
09:23 17 MS. DURIE: May I approach the screen,
09:23 18 Your Honor, just for one sec?
09:24 19 THE COURT: Sure, of course.
09:24 20 (Off-the-record discussion.)
09:24 21 MS. DURIE: That's not very legible, but
09:24 22 if it were legible, what it would say is that in
09:24 23 addition to that $2.2 billion in R&D, in research and
09:24 24 development and lab work since 2017, Align has also
09:24 25 spent $1.4 billion in education and in marketing.

09:24 1 The reason that education is so important
09:24 2 is because this is new for a lot of doctors, and Align
09:24 3 spends a lot of time and effort teaching doctors about
09:24 4 this technology, helping them with their practices to
09:24 5 modernize and digitize them, and doing direct outreach
09:24 6 to patients so that patients know that this is an
09:24 7 available option.
09:24 8 Now, you don't have to take my word for
09:24 9 how important and how innovative this is. This is
09:25 10 Dr. Bryan Taylor. Now, he has a practice here in town
09:25 11 called Brazos Braces, and he was actually hired by the
09:25 12 defendant Straumann in this case.
09:25 13 And what he says on his website, he says:
09:25 14 Invisalign info. There's never been a better time to
09:25 15 straighten your teeth with the most advanced clear
09:25 16 aligner in the world. Our office is proud to be a
09:25 17 certified provider of Invisalign clear aligners, which
09:25 18 give you a clear, convenient, and comfortable option to
09:25 19 achieve the smile you've always wanted.
09:25 20 Now, it's not surprising that when you
09:25 21 have a company that has been as successful as Align has
09:25 22 been, a lot of other folks are going to want in on the
09:26 23 action. And that is exactly what has happened. A huge
09:26 24 number of other companies have come onto the market
09:26 25 also offering clear aligner products. One of those

09:26 1 companies is Straumann.
09:26 2 Straumann acquired a company called
09:26 3 ClearCorrect, that you're going to hear about, as well
09:26 4 as a company called Bay Materials. ClearCorrect made
09:26 5 aligners. Bay Materials made the material.
09:26 6 Now, I told you that Invisalign came out
09:26 7 in 1999. ClearCorrect came out with a clear aligner in
09:26 8 2006. In 2019, Align came out with SmartTrack. That
09:26 9 was a new material for making these clear plastic
09:26 10 aligners that was a breakthrough. Before this, these
09:26 11 retainers, these aligners, had a tendency to crack and
09:26 12 break. It was hard to get the right amount of both
09:27 13 stiffness and flexibility.
09:27 14 Dr. Li and her colleagues spent eight
09:27 15 years and tested over 260 materials in order to develop
09:27 16 a new material for making these aligners. And that new
09:27 17 material was a multi-layer material that had layers of
09:27 18 two different plastics.
09:27 19 One of the plastics was relatively rigid.
09:27 20 You're going to hear it was a copolyester. The other
09:27 21 plastic was much more flexible. You're going to hear
09:27 22 it referred to as TPU, polyurethane, thermoplastic
09:27 23 polyurethane. And so you got the advantages both of a
09:27 24 material that was relatively rigid and strong and a
09:27 25 material that was more flexible that could sustain that

09:27 1 force over a longer period of time.

09:27 2 Now, Bay Materials recognized the

09:27 3 importance of this innovation. This is an internal Bay

09:28 4 Materials document. The parties produced documents in

09:28 5 the course of litigation. And they're reflecting on

09:28 6 this.

09:28 7 I apologize, this is hard to read. It

09:28 8 wasn't supposed to be. But I'll read it.

09:28 9 It says: Our earlier knowledge (2016) of

09:28 10 Invisalign's SmartTrack aligner was built on their MSDS

09:28 11 and CAS number disclosures.

09:28 12 That's our data sheets basically for our

09:28 13 material.

09:28 14 In the MSDS documents, SmartTrack is

09:28 15 identified with multi-layer aromatic thermoplastic

09:28 16 polyurethane/copolyester.

09:28 17 That's the same material that is the

09:28 18 material in SmartTrack.

09:28 19 And then in 2018, Bay Materials came out

09:28 20 with Zendura FLX, which was their multi-layer material.

09:28 21 And when we look at what it was made of -- this is from

09:28 22 one of their documents -- they describe their

09:29 23 multi-layer material, Zendura FLX, as being made of

09:29 24 thermoplastic polyurethane, TPU, and copolyester, just

09:29 25 like the Align SmartTrack material.

09:29 1 And they talked about the advantages and
09:29 2 the importance of this. This is from a Straumann
09:29 3 document. And what they said is: Combining the
09:29 4 properties of both flexible and rigid resins in a
09:29 5 multi-layered film allows for greater tear resistance,
09:29 6 lower initial force, more consistent and longer
09:29 7 sustained force, and a more precise fit. All
09:29 8 advantages of this multi-layer material with both these
09:29 9 hard and soft layers.
09:29 10 It wasn't just the material. Something
09:29 11 similar happened with scanners. We came out with
09:29 12 scanners, the iTero. It was initially launched in
09:29 13 2006. There was a new generation in 2015. Straumann
09:29 14 then came out with a scanner in 2019. We came out with
09:30 15 one in '24. They came out with a newer version shortly
09:30 16 thereafter.
09:30 17 So with that, by way of background, I
09:30 18 want to talk to you a little bit about patent
09:30 19 infringement and why it is that Straumann infringes.
09:30 20 And I want to start by talking a little
09:30 21 bit about what a patent is because patents are critical
09:30 22 to our system of innovation in this country. They're
09:30 23 what protect and what stimulate that innovation so much
09:30 24 so that they are in Article 1 of the United States
09:30 25 Constitution, to promote the progress of science and

09:30 1 arts by securing to inventors the exclusive right to
09:30 2 their inventions.
09:30 3 If you make an invention, if you have an
09:30 4 idea, if you do some experimental work, you have a
09:30 5 choice. You can choose to keep it secret -- formula
09:30 6 for Coca-Cola is one of the classic examples of that
09:30 7 kind of secret -- and not file for a patent on it.
09:30 8 Or you have the option to go to the
09:31 9 United States Patent Office and make your invention
09:31 10 public, add to the sum of human knowledge. And in
09:31 11 exchange for that disclosure, you are awarded a patent
09:31 12 that gives you the exclusive right to that invention
09:31 13 for a period of time.
09:31 14 And I think we are swapping out to get a
09:31 15 better set of the slides here.
09:31 16 Thanks. And can you just click on it so
09:31 17 I can activate the clicker?
09:31 18 Perfect. Thank you. Sorry about that.
09:31 19 So you can think of a patent as being
09:31 20 like a deed to a piece of property. The patent is the
09:31 21 thing that defines the boundaries of your property
09:32 22 right. So if you're lucky enough to own a house,
09:32 23 somewhere at the registrar's office, there's a deed and
09:32 24 it specifies where the lot lines are. You can think of
09:32 25 a patent as being like the lot lines for your

09:32 1 invention.

09:32 2 And if we take a look -- I'm just going

09:32 3 to skip over that.

09:32 4 If we take a look at the end of the

09:32 5 patent, and you'll have copies of these to look at,

09:32 6 there is what are called claims. And those claims are

09:32 7 what provide those lot lines and define the boundaries

09:32 8 of the intellectual property that you own.

09:32 9 So this is Claim 1 of one of the patents

09:32 10 that you're going to be asked to consider in the case.

09:32 11 This is Claim 1 of the '613 patent.

09:32 12 Can I get -- can I get it, Mr. Smith, so

09:32 13 that I can click to the next slide?

09:32 14 So I want to talk a little bit about how

09:32 15 it is that you would decide whether there is

09:33 16 infringement of a claim like that. So imagine that you

09:33 17 have an idea to come up with strawberry shortcake. You

09:33 18 might file a patent on strawberry shortcake, and it

09:33 19 would be a dessert that has three layers:

09:33 20 strawberries, whipped cream, and cake. And that would

09:33 21 be your patent claim.

09:33 22 So let's say --

09:33 23 Can I get the clicker?

09:33 24 There we go. Sorry.

09:33 25 So let's say somebody else came along and

09:33 1 they started selling strawberry shortcake. It had
09:33 2 cake, it had strawberries, and it had whipped cream.
09:33 3 And the question was: Does this infringe your patent
09:33 4 claim? How would you know the answer to that question?
09:33 5 You have to compare the product to the claim.
09:33 6 So in this example, you would say: Does
09:33 7 it have three layers? Yes. It does.
09:33 8 Does it have strawberries? Yes. It
09:33 9 does.
09:33 10 Does it have whipped cream? Yes. It
09:34 11 does.
09:34 12 And does it have cake? Yes. It does.
09:34 13 And if all of those requirements are met,
09:34 14 then it infringes.
09:34 15 Importantly, you do not compare the
09:34 16 product that was made by the inventor with the product
09:34 17 that is made by the company that is accused of
09:34 18 infringement. You don't compare the products. You
09:34 19 compare the patent to the product in order to determine
09:34 20 whether there is patent infringement.
09:34 21 So here, all of those requirements are
09:34 22 met, and you would say that there is infringement.
09:34 23 So what about the actual issue here that
09:34 24 you're going to be asked to decide? The claim of the
09:34 25 '613 patent is to be compared to the product at issue,

09:34 1 and the product at issue here is Straumann's aligner
09:34 2 made from that multi-layer material called Zendura FLX.
09:35 3 So the claim here has a number of
09:35 4 requirements. I have pulled out the ones that you're
09:35 5 going to hear us talking about. You'll have all of
09:35 6 them, but I've pulled out the ones you're going to hear
09:35 7 us talking about.
09:35 8 And the claim requires three or more
09:35 9 layers, a hard layer that is copolyester, a soft layer
09:35 10 that is a thermoplastic polyurethane elastomer.
09:35 11 So the first question for you is going to
09:35 12 be, does Zendura FLX have those layers? And the answer
09:35 13 to that question, you've already seen. It's in their
09:35 14 own documents. The answer to that question is yes. It
09:35 15 is multi-layer, and it is made out of those two types
09:35 16 of material.
09:35 17 So what is Straumann going to say about
09:35 18 that? I don't think they're going to disagree with
09:35 19 what I just said, but I do think they're going to say
09:35 20 that that soft layer doesn't satisfy this requirement
09:35 21 about what's called elongation at break.
09:36 22 So what is this about? This is a soft,
09:36 23 flexible material. "Elongation at break" means how
09:36 24 much can you pull it apart before it breaks. Okay? So
09:36 25 elongation at break of 200 percent, can you double it?

09:36 1 Can you pull it 200 percent before it breaks? If you
09:36 2 can pull it more than 200 percent, it's got more than
09:36 3 200 percent elongation at break.
09:36 4 And I think they're going to get up here
09:36 5 and tell you their soft layer doesn't have that.
09:36 6 However, if you look at the data sheet for their soft
09:36 7 layer, it's right there. It does. It's [redacted] percent.
09:36 8 And we're going to have a materials
09:36 9 scientist come up here and explain to you that in fact
09:36 10 it does satisfy that requirement.
09:36 11 Now, there's one other important thing
09:36 12 about this claim that I want to talk about, which is
09:36 13 this requirement of having three or more layers.
09:37 14 Because we've talked about a hard layer. We've talked
09:37 15 about a soft layer. And you may be asking yourself,
09:37 16 what about that third layer?
09:37 17 The third layer in the patent can be
09:37 18 anything. It could be hard, it could be soft, it could
09:37 19 be something else entirely. It doesn't matter. And
09:37 20 you may be asking yourself, well, that seems sort of
09:37 21 strange. Doesn't the order of these layers matter?
09:37 22 And the answer to that question is no. You need a hard
09:37 23 layer; you need a soft layer. Altogether there needs
09:37 24 to be three layers.
09:37 25 So I'll give you an example. I ride

09:37 1 motorcycles, and I have riding jeans. And my riding
09:37 2 jeans are denim on the outside, so they're kind of soft
09:37 3 and flexible. And they're lined with Kevlar. And the
09:37 4 idea is if you lay the bike down -- I have not tested
09:37 5 this principle, but this is the idea. You lay the bike
09:37 6 down, it's going to protect you, right? Because the
09:37 7 Kevlar's a lot tougher. It's not going to shred the
09:37 8 way denim will.
09:37 9 Now, I think it's a pretty cool
09:38 10 invention. Imagine somebody filed for a patent on
09:38 11 that. And somebody else came along and saw it and
09:38 12 thought that's pretty cool. I'm just going to turn it
09:38 13 inside out. And I'm going to put Kevlar on the
09:38 14 outside, and I'm going to have denim on the inside.
09:38 15 And maybe that would be a little bit softer against
09:38 16 your skin. But it's still taking advantage of the
09:38 17 invention. It's still jeans that are denim and Kevlar.
09:38 18 So if that happens, you can go back to
09:38 19 the Patent Office. Patent examination takes place over
09:38 20 a long period of time. So you file an application in
09:38 21 the Patent Office. Patent examiners look at it and
09:38 22 decide what claims you are entitled to based on the
09:38 23 disclosure that you made.
09:38 24 And if you see that someone else is using
09:38 25 your invention, you're allowed under the rules to go

09:38 1 back to the Patent Office and say, that's actually
09:38 2 using our invention. And if you do that, the patent
09:38 3 examiner will look and will compare what you are now
09:39 4 saying you invented with what you said you invented
09:39 5 when you filed the patent application and make a
09:39 6 decision about whether you should be awarded that
09:39 7 claim.
09:39 8 And that's what happened here. We saw
09:39 9 that Straumann was using our invention. We went back
09:39 10 to the Patent Office and applied for this claim. The
09:39 11 patent examiner took a look at it, took a look at what
09:39 12 we had filed all the way back when we first filed our
09:39 13 patent application, and arrived at a conclusion that,
09:39 14 yes. This was part of what we invented. And yes. We
09:39 15 were entitled to this claim.
09:39 16 And so for purposes of infringing this
09:39 17 claim -- and I don't think you're going to hear
09:39 18 Straumann's counsel disagree with this -- you need a
09:39 19 hard layer. You need a soft layer. Because each of
09:39 20 those provides the critical material properties.
09:39 21 Overall you need three layers, but it doesn't matter in
09:40 22 what order you have them. So that's the materials
09:40 23 patents.
09:40 24 I want to touch very briefly on the other
09:40 25 patent you're going to be asked to consider, which is a

09:40 1 patent that relates to this scanner. It's a system for
09:40 2 scanning a patient's teeth, and we sort of nickname it
09:40 3 the "eraser patent" because the idea is you take a full
09:40 4 scan, and the orthodontist looks at it and there's
09:40 5 something wrong with part of it. And rather than
09:40 6 having to retake the entire scan, which is kind of
09:40 7 uncomfortable from a patient perspective, you can go in
09:40 8 and just rescan that one little portion and slot it
09:40 9 into the original image rather than having to take the
09:40 10 scan all over again.
09:40 11 So the question is going to be, does
09:40 12 Straumann use that? And answer is they do. This is a
09:40 13 Straumann video.
09:40 14 Now, I want to make clear, I've
09:40 15 superimposed an eraser on here. The eraser is not part
09:41 16 of the original Straumann video. But this video
09:41 17 basically shows the same thing. It shows that you can
09:41 18 take a scan. You can identify a portion of it that you
09:41 19 want to get rid of. You can erase it. That's the part
09:41 20 that's not part of the video. And then in the video,
09:41 21 you can slot back in a new scan of just that little
09:41 22 portion.
09:41 23 And we'll have someone come in and show
09:41 24 you that video in full and explain to you how that
09:41 25 works.

09:41 1 So you're also going to be asked to make
09:41 2 a decision about whether Straumann's scanner is using
09:41 3 that part of our scanner invention.
09:41 4 So that's the infringement question that
09:41 5 you're going to be asked to decide. And if you find
09:41 6 that Straumann has infringed our property rights in our
09:41 7 patents, then the question is going to be, what damages
09:41 8 should Straumann pay for that past infringement?
09:41 9 Now, the law says that the way that you
09:41 10 evaluate patent damages is you imagine that instead of
09:42 11 just infringing, Straumann had come to us and asked for
09:42 12 our permission to be able to use our patents, our
09:42 13 inventions, in order to compete with us. And you may
09:42 14 think to yourself, well, that never would have
09:42 15 happened. And of course you're right, but what the law
09:42 16 says is we imagine that that happened. And we look to
09:42 17 what the parties would have agreed to as payment for
09:42 18 the use of that invention at that time.
09:42 19 And you're going to hear testimony from
09:42 20 an economist who did an analysis of that question and
09:42 21 has concluded that $73.4 million is the amount that the
09:42 22 parties would have agreed to for past damages in order
09:42 23 for Straumann to be able to use those inventions to
09:42 24 compete against us.
09:42 25 So I said Straumann is going to come up

09:42 1 and tell you they don't infringe. And I think they're
09:42 2 also then going to say, well, even if we do infringe,
09:43 3 the patents are invalid, that they're no good, and that
09:43 4 they should be taken away from us and taken away from
09:43 5 our inventors.
09:43 6 Now, you may remember last week you saw a
09:43 7 video that Judge Fogel was in -- that probably now
09:43 8 feels like a long time ago -- in which he explained
09:43 9 that to prove invalidity, to prove that a patent issued
09:43 10 by the United States government is invalid, they have
09:43 11 to prove that by clear and convincing evidence because
09:43 12 we presume that the patent examiners did their job.
09:43 13 And you may remember that he also
09:43 14 explained in that video that when an application comes
09:43 15 in, it's assigned to a patent examiner who is someone
09:43 16 with a background in the specific field in the
09:43 17 technology to evaluate the application and make a
09:43 18 decision as to whether the application should issue.
09:44 19 That happened here.
09:44 20 And in this case, there were actually a
09:44 21 number of different trained patent examiners who looked
09:44 22 at these questions. Three people across the various
09:44 23 materials patents and then someone different with
09:44 24 respect to the scanner patent.
09:44 25 And what Straumann wants you to believe

09:44 1 is that every single one of these people didn't do
09:44 2 their job. That's why they have such a high burden to
09:44 3 prove to you that that is true.
09:44 4 Now, I don't know exactly what they're
09:44 5 going to say about why they contend these patents are
09:44 6 invalid. One thing I do know, they're going to come up
09:44 7 here and tell you that Dr. Li, the inventor of the
09:44 8 materials patents, misrepresented to the Patent Office
09:44 9 the eight years of work that she had done and the
09:44 10 experiments that she had done coming up with the
09:45 11 material, the breakthrough material in these clear
09:45 12 plastic aligners. That's not right.
09:45 13 And Dr. Li is going to take the stand,
09:45 14 and she is going to tell you that what she told the
09:45 15 Patent Office was 100 percent true and that we
09:45 16 absolutely deserve the patents that we were awarded for
09:45 17 these inventions.
09:45 18 And that brings us to the final issue in
09:45 19 this case. So we filed this lawsuit for patent
09:45 20 infringement against Straumann. And they turned around
09:45 21 and filed antitrust counterclaims accusing us of being
09:45 22 a monopolist.
09:45 23 Now, I want to note, they hadn't said
09:45 24 anything about this before we caught them infringing
09:45 25 our patents. And you're going to see in the documents,

09:45 1 when they were talking internally, they never blamed
09:46 2 Align for their problems until they got caught
09:46 3 infringing.
09:46 4 But here we are. And so I need to talk
09:46 5 to you about these allegations. Because the truth is
09:46 6 we compete, and we compete with them fair and square.
09:46 7 Just because we are successful does not
09:46 8 mean that we have done anything wrong.
09:46 9 H-E-B, amazing company, right? Everybody
09:46 10 loves H-E-B, right? Great products, great prices,
09:46 11 great service. Their competitors may not love them.
09:46 12 That doesn't mean they've done anything wrong.
09:46 13 You're going to see that among clear
09:46 14 aligners, Invisalign is far and away right now the most
09:46 15 popular choice. That's not surprising. We've been in
09:46 16 the market for almost 30 years. We've invested over
09:46 17 $2 billion in research and development to develop these
09:47 18 products. We've spent $1.4 billion educating
09:47 19 orthodontists about that product and educating patients
09:47 20 about this as an option.
09:47 21 So it's not surprising that a lot of
09:47 22 people, when they want a clear aligner, come in and ask
09:47 23 for Invisalign by name. And there's nothing wrong with
09:47 24 that.
09:47 25 So I want to talk to you about three

09:47 1 things in connection with these allegations being made
09:47 2 by Straumann.
09:47 3 Theme No. 1, who are the competitors?
09:47 4 Because first and foremost, the folks that we are
09:47 5 competing with, that we were competing with from the
09:47 6 very beginning on Day 1, that at that point were
09:47 7 100 percent of the market, and the folks that we
09:47 8 continue to compete with to this day are braces. That
09:47 9 is our number one competitor. And yes. We compete
09:48 10 with other clear aligner companies too.
09:48 11 Point No. 2, when you look at what
09:48 12 actually happens in the market, we compete fairly. We
09:48 13 compete -- we compete vigorously. That's good for
09:48 14 consumers. That's what the antitrust laws are supposed
09:48 15 to want, we compete fairly.
09:48 16 And finally, that what Straumann is
09:48 17 complaining about is a consequence of their own
09:48 18 decisions.
09:48 19 So first, this question of what is the
09:48 20 market? The market pretty straightforwardly, we think,
09:48 21 is the market for teeth straightening. You need to get
09:48 22 your teeth straightened, what are you going to use?
09:48 23 Maybe you use braces. Maybe you use clear aligners.
09:48 24 Straumann says no. Straumann says the
09:48 25 market is doctor-directed clear aligners. In other

09:48 1 words, they're trying to say that clear aligners, the
09:48 2 technology that we pioneered, is its own special
09:49 3 market.
09:49 4 So the question at the end of the day for
09:49 5 you is going to be, do aligners compete with braces or
09:49 6 not?
09:49 7 Well, in order to answer this question,
09:49 8 all you really have to do is look at Straumann's own
09:49 9 documents. This is a Straumann annual report from
09:49 10 2024. An annual report is a document that you publicly
09:49 11 make, if you're a public company, available to your
09:49 12 investors. And you're required to be truthful in your
09:49 13 annual report.
09:49 14 And we can take a look here at what they
09:49 15 said: Clear aligners, a discreet alternative to
09:49 16 traditional braces, offer effective teeth straightening
09:49 17 while enhancing aesthetic appeal. Such innovations
09:49 18 have broadened the teeth-straightening market to
09:49 19 include adults who might otherwise avoid conventional
09:49 20 braces while remaining a popular choice for teenagers
09:50 21 with misaligned teeth.
09:50 22 Straumann's own documents recognize that
09:50 23 the market here is a teeth-straightening market. Why
09:50 24 is that?
09:50 25 You're going to hear testimony from

09:50 1 Dr. Jena. He's a doctor. He's an MD. He sees
09:50 2 patients. He's also an economist, and he studies
09:50 3 healthcare economics. And he's going to come here and
09:50 4 explain that when you're thinking about whether
09:50 5 products are in the same market, when you're thinking
09:50 6 about whether they compete with each other, you ask
09:50 7 yourself, do the products do a similar thing? Do the
09:50 8 products do that similar thing for similar kinds of
09:50 9 customers? Do they do it in a similar way, and are
09:50 10 they sold for a similar price? They don't have to be
09:50 11 the same, right, but are they similar?
09:50 12 So you can imagine, you know, you've got
09:51 13 a headache. And you go to, you know, the local
09:51 14 pharmacy, and you want something for your headache.
09:51 15 They've got Advil. They've got Tylenol. They've got
09:51 16 Excedrin. They're not all identical. Each of them
09:51 17 works in a slightly different way, but they're all pain
09:51 18 medicine. They're all things that you might take for a
09:51 19 headache. They're all in the market for headache
09:51 20 remedies.
09:51 21 So the question for you here is going to
09:51 22 be, again, as I said, do braces and aligners compete
09:51 23 with each other?
09:51 24 Remember I told you about Dr. Taylor, the
09:51 25 guy from Brazos Braces here in town who Straumann hired

09:51 1 to come testify in this case for them. If we take a
09:51 2 look at his website, what does he say? Types of
09:51 3 braces. There are traditional metal braces. There are
09:51 4 clear ceramic braces, and there are clear aligners.
09:51 5 All essentially different types of braces, different
09:52 6 ways that you can straighten your teeth.
09:52 7 That's exactly right.
09:52 8 And you're also going to hear the price
09:52 9 of braces and aligners is pretty similar on average.
09:52 10 Now, look, the range varies a lot because it depends on
09:52 11 how crooked your teeth are and how much movement is
09:52 12 required. So it's a pretty big range. But you're
09:52 13 going to hear the average for both aligners and braces
09:52 14 winds up being pretty similar.
09:52 15 So do they compete with each other? We
09:52 16 think the answer to that question is going to be
09:52 17 questionably yes.
09:52 18 And this is really important because
09:52 19 Straumann's going to come in here and show you and say,
09:52 20 oh, Align dominates the market. They have a huge
09:52 21 percentage of the market. Look at how much of the
09:52 22 market they have.
09:52 23 And if you're only talking about clear
09:52 24 aligners, yeah, I mean, we pioneered the product. It's
09:53 25 not surprising that most clear aligners are Invisalign

09:53 1 aligners, relative to all of these new companies coming
09:53 2 in and trying to compete with us.
09:53 3 But if you look at the actual
09:53 4 teeth-straightening market, braces are -- there's way
09:53 5 more people who use braces today than there are clear
09:53 6 aligners. They're never going to show you that.
09:53 7 They're never even going to argue that we dominate that
09:53 8 market or we're a monopolist in that market, because
09:53 9 we're not. And that's just not a credible position.
09:53 10 And so in order to be able to make out
09:53 11 this claim, they have to convince you that this is
09:53 12 true. And that's why they've taken what I think you're
09:53 13 going to find is a pretty surprising position with
09:53 14 respect to what actually competes with what.
09:53 15 So what's the next question? And to be
09:53 16 clear, if you agree with us on what the market is, if
09:53 17 you agree with us that braces and aligners compete with
09:53 18 each other, we're done. They don't even have a claim.
09:54 19 THE COURT: Counsel, you have five
09:54 20 minutes.
09:54 21 MS. DURIE: Thank you.
09:54 22 But I want to address the rest of their
09:54 23 argument because it's important. Because they're going
09:54 24 to come up here and show you a bunch of internal
09:54 25 documents and say, oh, you guys were talking, talking

09:54 1 about, you know, putting a moat around your business
09:54 2 and about, you know, all of this competition and trying
09:54 3 to squelch the competition.
09:54 4 And I want to suggest to you it's not
09:54 5 that surprising that internally companies use that kind
09:54 6 of language. It's business. Of course we want to
09:54 7 compete and of course we want to win.
09:54 8 But the question is, in the real world
09:54 9 when you look at what actually happened, did we compete
09:54 10 fairly? And the answer to that question is yes.
09:54 11 So what is Straumann complaining about?
09:54 12 First thing they're complaining about is volume
09:54 13 discounts. We have loyalty programs, okay? The more
09:54 14 you buy, the more you save. And they're going to come
09:54 15 in here and tell you there's something wrong with that.
09:54 16 I would suggest to you there's something
09:54 17 right about that. We are charging lower prices. That
09:55 18 is procompetitive. That is a good thing from a
09:55 19 consumer point of view and from an antitrust point of
09:55 20 view. That's not a bad thing.
09:55 21 And then they're going to come in and
09:55 22 they're going to say, well, you have programs -- sorry,
09:55 23 you have programs that basically provide marketing
09:55 24 resources to doctors and that help doctors transform
09:55 25 their practices from being analog to being digital.

09:55 1 And yes, doctors come to us and they say,
09:55 2 Hey, we want to switch to Invisalign. We want to make
09:55 3 investments. Will you help us?
09:55 4 And when we do that, we want to make sure
09:55 5 that the doctors are using that investment that we are
09:55 6 making in them for Invisalign. But there's not a bait
09:55 7 and switch where a customer comes in and says, I want
09:55 8 Invisalign because they've seen all of our marketing
09:55 9 and then get sold something else again.
09:55 10 Again, that's good for doctors. We're
09:55 11 making investments in them, and it's ultimately good
09:55 12 for patients too.
09:55 13 And then finally, Straumann complains
09:55 14 that our scanner here makes it too hard to order their
09:56 15 products.
09:56 16 Now, I want to be clear. You can use our
09:56 17 scanner to order any competing product that you want.
09:56 18 You can create an industry standard file format. You
09:56 19 can export it, and you can use it to order aligners
09:56 20 from any one of our competitors.
09:56 21 Their complaint is it takes too many
09:56 22 buttons. You have to click too many times.
09:56 23 Now, you're going to hear testimony. It
09:56 24 takes less than a minute. It is not a big deal at all.
09:56 25 You know, one way you know this is not actually a

09:56 1 problem: One out of every five ClearCorrect digital
09:56 2 orders comes from one of our scanners.
09:56 3 There's a lot of scanners out there.
09:56 4 Okay? One out of every five comes from our scanner.
09:56 5 That's more orders than they get from theirs, okay? So
09:56 6 it's not that hard.
09:56 7 And, finally, Straumann's failures were
09:57 8 caused by self-inflicted wounds. A lot of these other
09:57 9 companies have been doing just fine. Growing revenue
09:57 10 year over year, competing with us, clear aligners.
09:57 11 Straumann is the one company that is suffering, the one
09:57 12 company that is failing. And it is trying to blame
09:57 13 that failure on us.
09:57 14 But you will see in their own internal
09:57 15 documents, in 2020 when they were analyzing this, what
09:57 16 were our pain points? Insufficient product capacity,
09:57 17 lack of product innovation, aligner material is not
09:57 18 best in class, our aligners do not fit, our software
09:57 19 does not cover all customer needs.
09:57 20 In July of 2022, what did their CEO say?
09:57 21 Many of the reasons for our shortfall are
09:57 22 self-inflicted wounds, lack of leadership, blocking
09:57 23 customer accounts, treatment planning quality still not
09:57 24 where it should be.
09:57 25 And in December of 2024, had they solved

09:58 1 the problem? No. Their production cost was twice as
09:58 2 high as everybody else. They were behind their
09:58 3 competitors on treatment planning. They had scattered
09:58 4 decision-making and a lack of standardization.
09:58 5 Their own documents tell the tale for why
09:58 6 it is that they are not being successful in the market.
09:58 7 And one thing you will see is nowhere in
09:58 8 any of these documents do they blame that failure on
09:58 9 us.
09:58 10 Ladies and gentlemen, this is a tale of
09:58 11 two companies. One company that has pioneered a
09:58 12 revolutionary new product that has truly transformed
09:58 13 the practice of dentistry. Another company that was
09:58 14 caught with its hand in the cookie jar and is trying to
09:58 15 shift blame and responsibility to someone else.
09:58 16 We really look forward to presenting the
09:58 17 evidence to you on our case. And thank you so much for
09:58 18 your attention this morning.
09:58 19 THE COURT: Thank you, ma'am.
09:59 20 Mr. Mueller.
09:59 21 MR. MUELLER: Your Honor, may we just set
09:59 22 up for a minute?
09:59 23 THE COURT: Of course.
09:59 24 OPENING STATEMENT ON BEHALF OF THE DEFENDANT
09:59 25 MR. MUELLER: Good morning again, ladies

09:59 1 and gentlemen.

09:59 2 Ladies and gentlemen, this is a case

09:59 3 about competition. At the heart of this case is the

09:59 4 question of whether the competition that Align has

09:59 5 engaged in is fair or unfair. And we intend to show

09:59 6 and the evidence will establish that Align has locked

09:59 7 in customers, created a closed system, harmed

09:59 8 competition, suppressed competitors, including

10:00 9 ClearCorrect, and that the real victim in this case is

10:00 10 ClearCorrect.

10:00 11 We are going to show that over a period

10:00 12 of years, Align planned and executed a strategy of

10:00 13 suppressing competition to preserve a dominant market

10:00 14 position in the dental aligner market.

10:00 15 Now, in jury selection you may recall, I

10:00 16 used the analogy of two students on the schoolyard and

10:00 17 one student mistreating another student and then

10:00 18 finally making an allegation, a false allegation, of

10:00 19 stealing a lunch. And at that point -- at that point,

10:00 20 the second student provided the full story and said,

10:00 21 that allegation is false. In fact, here's what's

10:00 22 really been happening. I'm the real victim here.

10:00 23 That's this case.

10:00 24 In this case, Align has been subjecting

10:00 25 the industry generally, and ClearCorrect specifically,

10:00 1 to anticompetitive conduct for years. On top of that,
10:01 2 Align in this lawsuit is making allegations of patent
10:01 3 infringement that are not correct. We will show that.
10:01 4 There is no infringement of any of the patents in this
10:01 5 case.
10:01 6 ClearCorrect and its parent Straumann are
10:01 7 here to say, enough. Enough. And we're here to
10:01 8 provide the full story, the full set of facts to all of
10:01 9 you.
10:01 10 Now, let's get started with a discussion
10:01 11 of the clear aligner marketplace in the United States.
10:01 12 Now, Ms. Durie said a few times that this
10:01 13 is the wrong way to look at it, that you should look at
10:01 14 the teeth-straightening market, including wire braces.
10:01 15 Ladies and gentlemen, you may recall
10:01 16 during jury selection, I asked you all a few questions
10:01 17 about purchasing vehicles, and some of you own trucks,
10:01 18 some of you don't. But those of you who own trucks, at
10:01 19 least some of you had specific reasons for purchasing a
10:01 20 truck. There were functional reasons why trucks were
10:02 21 different than other vehicles, even though all the
10:02 22 vehicles could transport you from Point A to Point B.
10:02 23 Now, it's correct that wire braces can
10:02 24 transport teeth, move teeth, straighten teeth. But
10:02 25 it's also correct that there are functional

10:02 1 distinctions between wire braces and clear aligners,
10:02 2 just like there's functional distinctions between
10:02 3 trucks and passenger cars and motorcycles.
10:02 4 The argument that's being made by Align
10:02 5 in this case is the equivalent of saying that rather
10:02 6 than look at the truck market, you should look at the
10:02 7 entire vehicle market. And even if a particular
10:02 8 company had 90 percent or 85 percent of the truck
10:02 9 market, don't worry about that. There's a larger
10:02 10 vehicle market.
10:02 11 And they might even say if you go down to
10:02 12 a vehicle dealership, you're going to see some
10:02 13 passenger cars and some trucks on the lot. Just like
10:02 14 at Dr. Taylor's braces shop, you might see some wire
10:02 15 braces and clear aligners.
10:03 16 But ladies and gentlemen, that's not the
10:03 17 question. The question is in the distinct market of
10:03 18 clear aligners, just like the distinct market of
10:03 19 trucks, does Align have a dominant position? And they
10:03 20 do.
10:03 21 Here's the revenue numbers, and you'll
10:03 22 see there's no real dispute about this. On the bottom,
10:03 23 clustered near the bottom, are various other clear
10:03 24 aligner companies. One of those is ClearCorrect.
10:03 25 ClearCorrect aligners are one of the

10:03 1 other clear aligner offered to the marketplace, and you
10:03 2 can see those companies are clustered near the bottom
10:03 3 in terms of annual revenues. Far above is Align and
10:03 4 its Invisalign product.
10:03 5 Now, credit where credit is due.
10:03 6 Invisalign is a good product, and part of their success
10:03 7 is due to that being a quality product. But that's not
10:03 8 the only reason. That's not the only reason.
10:03 9 Other reasons why they have achieved and
10:03 10 maintained this dominant market position in the U.S.
10:04 11 market for clear aligners is because of anticompetitive
10:04 12 conduct, and we're going to prove that in this trial
10:04 13 piece by piece, document by document, witness after
10:04 14 witness.
10:04 15 We are going to show that the real victim
10:04 16 here is ClearCorrect, which has been victimized by the
10:04 17 anticompetitive conduct of Align.
10:04 18 Now, just as background before we get
10:04 19 into some of the details, here's an overview of the
10:04 20 process for clear aligners. And I'll note at the
10:04 21 outset, Align does not hold patents on the basic idea
10:04 22 of a clear aligner. You may have had the impression
10:04 23 that there's something wrong with making clear aligners
10:04 24 and offering a competitive product. There's not.
10:04 25 Okay? There's not.

10:04 1 You will see that the patents in this
10:04 2 case are very specific, and they have very specific
10:04 3 requirements. Other companies are allowed to make
10:04 4 clear aligners and offer competitive products in the
10:04 5 marketplace. Align doesn't own the basic idea of any
10:04 6 type of clear aligner.
10:04 7 Here, we see a doctor discussing
10:04 8 treatment options with a patient. And in this case
10:05 9 when I say "doctor," I'm referring to dentists and
10:05 10 orthodontists who prescribe dental treatments.
10:05 11 The doctor will use what's called an
10:05 12 intraoral scanner, and Ms. Durie said a few words about
10:05 13 those, to scan the mouth of the patient and to scan the
10:05 14 topography, the shape of the teeth.
10:05 15 The scanner has a wand. It's connected
10:05 16 to a console. And that is the scanner equipment.
10:05 17 Now, then, there needs to be an aligner,
10:05 18 a plastic aligner which is designed to start to
10:05 19 straighten the teeth over time, and a patient will use
10:05 20 multiple aligners over the course of a treatment
10:05 21 program. Each aligner is designed to move the teeth a
10:05 22 bit more, and so progressively, the aligners move the
10:05 23 teeth into a straighter shape.
10:05 24 They are made of materials, and the
10:05 25 materials used in aligners are critical to this case.

10:05 1 We're going to talk a lot and present evidence about
10:05 2 the different types of materials that can be used in
10:05 3 aligners.
10:06 4 It's a fascinating area of technology,
10:06 5 and we're going to do our best to give you as much
6 information as we can.
10:06 7 It turns out that the materials used in
10:06 8 aligners, it can be quite unpredictable how they're
10:06 9 going to interact with each other, and it's difficult
10:06 10 and takes hard work and research and development to
10:06 11 find an effective composition of materials that will
10:06 12 work well, that will be safe and effective for
10:06 13 patients. And so you're going to learn a lot about
10:06 14 that over the course of the trial.
10:06 15 Those materials are formed through a
10:06 16 thermoforming process into the appropriate shape, and
10:06 17 we will take you through that process as well,
10:06 18 including how the ClearCorrect aligners, the ones that
10:06 19 are accused of infringement, are made. They're made in
10:06 20 Round Rock, and we're going to take you inside that
10:06 21 Round Rock facility and show you precisely how they are
10:06 22 made.
10:06 23 So let's go through some of the facts in
10:06 24 the case and put these on a timeline to give you the
10:06 25 chronology, and we're going to start with the

10:06 1 development of Invisalign's products, including some of
10:06 2 the technology that's relevant to this case.
10:07 3 Now, in 1997, we have the founding of
10:07 4 Align. And as Ms. Durie said, Align was launched to
10:07 5 try to commercialize clear dental aligners. And again,
10:07 6 credit where credit is due, it was a -- we have no
10:07 7 quarrel with their founding of the company or their
10:07 8 efforts to launch the aligners into the industry.
10:07 9 After the initial version of Invisalign,
10:07 10 they wanted to improve it, and they went to a company
10:07 11 called Bay Materials, Bay Materials, for help in
10:07 12 finding materials that would be better for the next
10:07 13 generation of Invisalign after the initial version.
10:07 14 Bay Materials was a company started in
10:07 15 California by a gentleman named Ray Stewart, who
10:07 16 started out of his garage. He was a materials
10:07 17 scientist. He's now retired. And he had worked for
10:07 18 decades on various types of material compositions for a
10:07 19 whole wide range of industries.
10:07 20 So Bay Materials over time did
10:08 21 specialized research on materials for different types
10:08 22 of devices.
10:08 23 Here's a picture of John Lahlouh. I'll
10:08 24 say a few more words about him in a bit. He's going to
10:08 25 be a witness in this trial. This picture's not from

10:08 1 the founding. It's from later on in the company's
10:08 2 history. But you can see some equipment that
10:08 3 Mr. Lahlouh is working with and some of the raw
10:08 4 materials used in the composition's design by Bay
10:08 5 Materials.
10:08 6 Back in 1999, Align went to Bay Materials
10:08 7 for help with their aligners, and they worked together
10:08 8 on a material that became known as EX30. And this was
10:08 9 used in next generation of Invisalign. EX30 had a
10:08 10 single layer of materials that would be used in dental
10:08 11 aligners, and that will be in contrast to some
10:08 12 multi-layer materials that we'll talk about in a bit.
10:08 13 So Align goes to Bay Materials for help
10:08 14 with the EX30, and that becomes incorporated into the
10:09 15 updated version of Align's aligners in 2001. At that
10:09 16 point, the companies went their separate ways, and
10:09 17 Align, to its credit, continued to do research and
10:09 18 development, continued to try to find a next generation
10:09 19 after that.
10:09 20 And they worked with more than a dozen
10:09 21 companies over a decade. So a dozen different
10:09 22 companies on various aspects of creating a next
10:09 23 generation to follow the EX30 version of Invisalign.
10:09 24 And after about a decade of research with
10:09 25 all those other companies with whom they consulted,

10:09 1 they arrived at something they called SmartTrack. And
10:09 2 this is a press release from October of 2012. The
10:09 3 actual product was launched, as Ms. Durie said, in
10:09 4 2013. It was announced in 2012.
10:09 5 And here, this says that Align is
10:09 6 announcing SmartTrack, the next generation of
10:09 7 Invisalign clear aligner material. 2012, SmartTrack.
10:10 8 Now, critically, critically, this
10:10 9 material has something that's known as a soft-hard-soft
10:10 10 configuration. I'll say that again. It's important.
10:10 11 It's a multi-layer material, soft-hard-soft. And let
10:10 12 me try to show you a visual to explain exactly what I
10:10 13 mean.
10:10 14 Here, we have a patient's mouth, and if
10:10 15 you look closely, there's actually a clear plastic
10:10 16 aligner on the teeth on the bottom and the top.
10:10 17 There's -- so there's aligners in this patient's mouth
10:10 18 right now.
10:10 19 If we were to look at one of those
10:10 20 aligners and focus on one of the caps, so to speak, for
10:10 21 a tooth and cut it in half, it would have, if it was
10:10 22 using SmartTrack, the soft -- indicated by pink --
10:10 23 hard -- indicated by blue -- soft configuration.
10:11 24 Soft-hard-soft.
10:11 25 Now, these are all plastics, and they're

10:11 1 not pink and blue. They're clear. But they are
10:11 2 different materials. Soft on the outer layers and hard
10:11 3 on the inner layer. That was the SmartTrack material.
10:11 4 I'm going to contrast that later with
10:11 5 what ClearCorrect arrived at and what Bay Materials
10:11 6 developed for an alternative technology, but let me
10:11 7 pause on one point right now.
10:11 8 Ms. Durie said, and she's right, that for
10:11 9 a patent infringement case, the ultimate question is
10:11 10 the comparison of what we call the claims in the
10:11 11 patent, which is the section at the end. You take the
10:11 12 claims that are being asserted by the plaintiff and you
10:11 13 compare them to the accused product to see if all the
10:11 14 requirements in the claims are met.
10:11 15 That is the proper analysis, and that's
10:11 16 what we're going to do to show noninfringement.
10:11 17 But there's a backstory and a context to
10:11 18 this case, and Ms. Durie herself compared SmartTrack,
10:12 19 this product right here, with what's used in
10:12 20 ClearCorrect.
10:12 21 And so you're going to see that even
10:12 22 though it is 100 percent right that an infringement
10:12 23 analysis requires a comparison of the claims to the
10:12 24 products, the product-to-product comparison is relevant
10:12 25 to other issues in this case. And the truth is this

10:12 1 product, the soft-hard-soft product, is the opposite,
10:12 2 the opposite of what ClearCorrect does, as you will
10:12 3 see.
10:12 4 So Align, after developing SmartTrack,
10:12 5 applied for patents on soft-hard-soft. And they
10:12 6 submitted a sworn declaration from Dr. Li to the Patent
10:12 7 Office in the early years when they were applying for
10:12 8 patents on soft-hard-soft. And it said: Align
10:12 9 produced the SmartTrack material, also referred to
10:12 10 herein as ST30, which is a product according to the
10:12 11 instant claims, the claims in the patent, comprising a
10:12 12 layered material with a hard copolyester layer between
10:13 13 two soft layers of thermoplastic polyurethane
10:13 14 elastomer.
10:13 15 That's what I just showed you. The two
10:13 16 hard layers on the outside, the soft layer -- I'm
10:13 17 sorry. The two soft layers on the outside and the hard
10:13 18 layer in between. Soft-hard-soft. And they told the
10:13 19 Patent Office the two soft layers with a hard
10:13 20 copolyester between.
10:13 21 So these are the early patent
10:13 22 applications that they filed and what they said to the
10:13 23 Patent Office in that time period.
10:13 24 Now, let's switch gears and talk about
10:13 25 the development of what became the accused product in

10:13 1 this case. I mentioned to you earlier that in the late
10:13 2 1990s, that Align had gone to Bay Materials, and then
10:13 3 they had gone their separate ways after the EX30
10:13 4 project.
10:13 5 Well, it turns out that Bay Materials, on
10:13 6 its own, did further work on materials that could be
10:14 7 used in dental aligners. They did further independent
10:14 8 development when they went their own way.
10:14 9 Mr. Lahlouh, John Lahlouh, who will
10:14 10 testify in this case, is going to explain what
10:14 11 happened. And he's going to explain to you a
10:14 12 development process that stretched over years.
10:14 13 You heard Ms. Durie say that -- made an
10:14 14 accusation, I should say, that there was a shortcut
10:14 15 taken, a shortcut taken by the defendants. Just keep
10:14 16 that in mind, shortcut, as we walk through this
10:14 17 evidence and as you hear the testimony in this case.
10:14 18 Here's a lab notebook from John Lahlouh.
10:14 19 And if you look carefully at the date, it's
10:14 20 August 12th, 2002. And you can see it right there.
10:14 21 That's 24 years ago.
10:14 22 In that notebook, which came in -- a lab
10:14 23 notebook which also talks about alternatives to EX30,
10:14 24 the material used in the Align product that Bay
10:15 25 Materials had consulted for, now Bay Materials has

10:15 1 moved on to alternatives.

10:15 2 So here, we have this lab notebook, and

10:15 3 it has as the title of this page Multi-Layered

10:15 4 Construction. It also says a three-layer construction.

10:15 5 Now, do you recall Ms. Durie talked about

10:15 6 multi-layer construction using two different materials?

10:15 7 Well, here, we have a multi-layer construction using

10:15 8 two different materials. And how do we know that?

10:15 9 It's right there. If you look on the right-hand side

10:15 10 of the page, do you see there's two materials listed?

10:15 11 There's a Surlyn in the outer layers and another

10:15 12 material, Selar, in the middle. Two different

10:15 13 materials in a three-layer construction. And the

10:15 14 materials on the outer layers, the Surlyn, are hard.

10:15 15 2002, 24 years ago. Handwritten lab

10:15 16 notebook, three-layer construction, hard layers. Hard

10:16 17 layers on the outside.

10:16 18 This is different than SmartTrack.

10:16 19 SmartTrack has soft layers on the outside and the hard

10:16 20 layer on inside. This is talking about a multi-layer

10:16 21 construction with hard layers on the outside. 24 years

10:16 22 ago.

10:16 23 Now, Bay Materials was a small company

10:16 24 then and remains a relatively small shop today. In the

10:16 25 15 years or so that followed that lab notebook,

10:16 1 Mr. Lahlouh and his colleagues worked on a wide variety
10:16 2 of projects in various industries. They worked on
10:16 3 everything from bulletproof vests to cladding for the
10:16 4 sides of naval ships, to prevent rusting of the metal
10:16 5 on the sides of the ships, to battery technology. They
10:16 6 worked on some plastic used in thermometers for turkeys
10:16 7 for when you're cooking. Wide variety of industries.
10:16 8 But periodically, over time, Mr. Lahlouh
10:17 9 and his colleagues returned, returned to the idea of
10:17 10 new materials for dental aligners. And over time, over
10:17 11 time, Mr. Lahlouh and his colleagues refined, refined
10:17 12 that germ of the idea you can see way back in 2002,
10:17 13 refined it to become a hard-soft-hard configuration for
10:17 14 dental aligners.
10:17 15 They did that, you will learn, before
10:17 16 SmartTrack was even introduced to the market. And of
10:17 17 course, SmartTrack is the opposite. SmartTrack is
10:17 18 soft-hard-soft.
10:17 19 In 2018, after years of work -- no
10:17 20 shortcuts here. This is years of work starting back
10:17 21 24 years ago -- Bay Materials announced Zendura FLX.
10:17 22 They announced the commercial release of Zendura FLX, a
10:17 23 new material engineered specially for fabricating clear
10:17 24 aligner appliances.
10:17 25 And Mr. Lahlouh is going to tell you all

10:17 1 about the independent development work that led to
10:18 2 this. And he'll tell you that he was familiar with
10:18 3 Align. He was familiar with Align's aligners, and he
10:18 4 even looked at Align patents.
10:18 5 To copy? No. Quite the opposite. To
10:18 6 strike his own path, a path that he had been on for
10:18 7 years and years and years and develop his own
10:18 8 technology. So he and his colleagues developed Zendura
10:18 9 FLX, a new material engineered specially for
10:18 10 fabricating clear aligner appliances.
10:18 11 Zendura FLX is used in the ClearCorrect
10:18 12 aligners that are accused of infringement in this case,
10:18 13 and that's why it's so important to the issues in the
10:18 14 case. Zendura FLX is the material used in the
10:18 15 ClearCorrect aligners that are accused of infringement
10:18 16 in this case.
10:18 17 Now, let's talk about ClearCorrect.
10:18 18 ClearCorrect was founded in 2006, 20 years ago, in
10:18 19 Houston. And it has been based in Texas ever since.
10:18 20 The headquarters today is in Round Rock, and this is
10:19 21 actually a picture of a celebration photo from a few
10:19 22 months ago for the 20th anniversary of the company.
10:19 23 Now, if you look closely at the building,
10:19 24 you can see right below ClearCorrect, it says: A
10:19 25 Straumann Group brand.

10:19 1 And it is correct that Straumann acquired
10:19 2 ClearCorrect years ago. It's also correct that
10:19 3 Straumann acquired Bay Materials at a different point
10:19 4 in time. And so Straumann is the parent company of
10:19 5 both Bay Materials and ClearCorrect.
10:19 6 It's also correct that Straumann is a
10:19 7 Swiss dental company. That's all true. And we're
10:19 8 going to call witnesses, including Ms. Sterling from
10:19 9 Straumann, to explain what Straumann is and what
10:19 10 Straumann does.
10:19 11 But it's interesting that the plaintiff
10:19 12 and Ms. Durie in her opening statement only uses the
10:19 13 term "Straumann" to refer to the defendants. The
10:19 14 defendants include ClearCorrect. Straumann may be its
10:19 15 parent company, but ClearCorrect is a Texas company
10:20 16 headquartered in Round Rock. And the products at issue
10:20 17 in this case on the aligner side are ClearCorrect
10:20 18 aligners made using Zendura FLX material.
10:20 19 So we think it's important to be careful
10:20 20 and precise in referring to what's happening with
10:20 21 respect to the parties and the facts. And the truth
10:20 22 is, the aligners being made here are ClearCorrect
10:20 23 aligners manufactured right up the road in Round Rock.
10:20 24 The fact that Straumann is the parent
10:20 25 company doesn't change the basic fact that ClearCorrect

10:20 1 is a Texas operation which makes these aligners here
10:20 2 and does so using Zendura FLX material from Bay
10:20 3 Materials.
10:20 4 Now, in 2020, ClearCorrect which, again,
10:20 5 had been around since 2006, launched the aligners made
10:20 6 using the Zendura material. They called it as a
10:20 7 tradename ClearQuartz, but it was the Bay Materials
10:21 8 Zendura FLX material that was used in there. And it
10:21 9 used, as I said, the hard-soft-hard configuration, the
10:21 10 very opposite of what SmartTrack does with
10:21 11 soft-hard-soft.
10:21 12 I'll also note you might think that
10:21 13 because Straumann is the parent company today, Bay
10:21 14 Materials and ClearCorrect, that Bay Materials only
10:21 15 supplies Zendura FLX to ClearCorrect today. It doesn't
10:21 16 supply Zendura FLX to other clear aligner companies out
10:21 17 in the marketplace. Well, they do. They actually
10:21 18 supply it to anyone who wants to use it, even if that
10:21 19 other company is a direct competitor to ClearCorrect.
10:21 20 Bay Materials is an open shop. It'll
10:21 21 sell to any clear aligner company in the industry. So
10:21 22 it supplies to ClearCorrect. It also supplies to
10:21 23 ClearCorrect competitors.
10:21 24 So that's the development story, and
10:21 25 that's the backdrop for many of the technical issues in

10:21 1 the case. And as you can see, the two parties here,
10:21 2 Align on the one hand, ClearCorrect on the other, were
10:22 3 on different technological paths. One ended up with
10:22 4 soft-hard-soft, that's Align. One ended up with
10:22 5 hard-soft-hard, that's ClearCorrect, using the Bay
10:22 6 Materials Zendura FLX material.
10:22 7 Okay. Now, the way they should have
10:22 8 worked is that both parties compete on a level playing
10:22 9 field and let the best product win out on quality, on
10:22 10 price. Level playing field. In our American system,
10:22 11 we certainly believe in robust competition, but we also
10:22 12 believe in a level playing field.
10:22 13 And what should have happened here is
10:22 14 exactly that. But instead what has happened here is at
10:22 15 every turn, Align has been tilting the playing field in
10:22 16 unfair ways to achieve what you see here, their
10:22 17 dominant market position in the U.S. market for clear
10:22 18 dental aligners.
10:22 19 So let's look at how they did it. And
10:22 20 here's the timeline we just went through, and I want to
10:22 21 now zoom in on 2011 when Align purchased a company
10:23 22 called Cadent. So they purchased a company called
10:23 23 Cadent. There's nothing wrong with acquiring a
10:23 24 company, and they did it. It had a scanning business.
10:23 25 So at that point, Align began to offer

10:23 1 the scanners, which had previously -- the mouth
10:23 2 scanners, which previously had been sold by Cadent.
10:23 3 And Align began marketing these as the iTero scanners.
10:23 4 But what they did with those scanners was to begin to
10:23 5 lock in, lock in doctors to Invisalign. You'll see
10:23 6 that over time, they used these scanners with the wand
10:23 7 and the console to lock in doctors and therefore their
10:23 8 patients into Invisalign.
10:23 9 So let's look at exactly how they did it,
10:23 10 okay?
10:23 11 In 2012, they announced SmartTrack, the
10:23 12 soft-hard-soft.
10:23 13 Here's 2013, an internal e-mail: As
10:23 14 we're preparing for serious competition in three to
10:23 15 five years -- by the way, they were right. Serious
10:23 16 competition was coming in three to five years. Five
10:24 17 years was Zendura FLX being launched.
10:24 18 Internal e-mail: As we're preparing for
10:24 19 serious competition in three to five years, an iTero
10:24 20 customer is a locked-in Invisalign customer.
10:24 21 Align's own words, "locked in."
10:24 22 And they went on to say quite candidly:
10:24 23 We should be locking in every Invisalign customer into
10:24 24 iTero now.
10:24 25 ITero's the scanner.

10:24 1 THE COURT: Mr. Mueller, if you'd hold on
10:24 2 one second.
10:24 3 If anyone is sitting at counsel table and
10:24 4 you have a phone on, you need to turn it off because
10:24 5 we're getting feedback through the mics and we're
10:24 6 having a hard time hearing Mr. Mueller. So anyone
10:24 7 who's sitting in front of the bar starting where
10:24 8 Mr. Nash is forward, if you have a phone on, you need
10:24 9 to turn it off, please.
10:25 10 I'm sorry for interrupting.
10:25 11 (Off-the-record discussion.)
10:25 12 MR. MUELLER: Okay. So 2013, we see this
10:25 13 e-mail regarding lock in.
10:25 14 2017, here's an internal sales
10:25 15 presentation, a presentation to salespeople inside
10:25 16 Align. And this was based on some plans that began in
10:25 17 2017. This particular presentation was a bit later.
10:25 18 It talks about competition being here.
10:25 19 This, again, an internal sales
10:25 20 presentation. Look who's at the center, ClearCorrect,
10:25 21 recognizing that competition is here.
10:25 22 And what do they want to do? Build the
10:25 23 moat around your business.
10:25 24 This is literally a slide they showed to
10:25 25 their own sales force, confidential - for internal use

10:25 1 only. We received this as part of the documents that
10:25 2 we received in this litigation. Confidential - for
10:25 3 internal use only, build the moat around your business.
10:25 4 Now, Ms. Durie compared Align at one
10:25 5 point to H-E-B, the grocery store. You ask yourself,
10:26 6 have you ever seen a moat at H-E-B? And of course the
10:26 7 answer is no.
10:26 8 This moat was designed to protect from --
10:26 9 protect Align from competition. It was designed to
10:26 10 keep dentists and orthodontists inside the moat in this
10:26 11 closed system and to keep all the other competitors
10:26 12 outside the moat unable to compete on a level playing
10:26 13 field. That's what this was about.
10:26 14 And again, you don't have to take it from
10:26 15 me. The CEO, Joe Hogan, said: We have such a huge
10:26 16 share of the market, why do we want to give them this
10:26 17 option?
10:26 18 By the way, we have such a huge share of
10:26 19 the market. Recall the effort to try to expand the
10:26 20 market to include wire braces? Here's the CEO himself
10:26 21 saying: We have such a huge share of the market.
10:26 22 And he's obviously referring to dental
10:26 23 aligners.
10:26 24 Why do we want to give them this option?
10:26 25 And the option that he's referring to is making

10:26 1 Invisalign interoperable with other companies'
10:26 2 scanners.
10:26 3 What they did -- what they did, the moat,
10:27 4 was the following: They told dentists and
10:27 5 orthodontists, we're not going to supply you Invisalign
10:27 6 anymore unless you use our scanner, iTero. We're not
10:27 7 going to give you the ability to offer your patients
10:27 8 Invisalign unless you use our scanner.
10:27 9 Now, scanners are costly and they take up
10:27 10 some space in an office, and you can't have a bunch of
10:27 11 different scanners in your office. So effectively,
10:27 12 this was forcing doctors to use iTero, and then it
10:27 13 turns out iTero is more difficult to use with other
10:27 14 aligners than Invisalign.
10:27 15 So forcing them to use iTero or else lose
10:27 16 the supply of Invisalign -- that's another way to put
10:27 17 it. If you don't buy the iTero, no more Invisalign.
10:27 18 Once you have the iTero, it's more difficult to use
10:27 19 with other aligners. So it's sort of a one-two punch.
10:27 20 You have to use our scanner, and the scanner doesn't
10:27 21 work as well with other aligners than Invisalign.
10:27 22 And they were quite candid, again, in
10:27 23 internal communications. If you want to do Invisalign,
10:28 24 you're forced to buy iTero and live with it.
10:28 25 And the response was: I think that

10:28 1 pretty much sums it up, Dan.
10:28 2 These are, by the way, e-mails among
10:28 3 executives at Align.
10:28 4 Here's the CEO again receiving an e-mail
10:28 5 from a colleague of his. "My point," Mr. Pudipeddi
10:28 6 said to the CEO, "is that iTero and Invisalign are in a
10:28 7 closed ecosystem."
10:28 8 That's exactly what they wanted. They
10:28 9 wanted to close the system, lock in doctors, and
10:28 10 prevent doctors and patients from having fair access to
10:28 11 competitive products like ClearCorrect.
10:28 12 They were quite candid. Again, the
10:28 13 barriers to competition were the goal. This is their
10:28 14 own words: Create barriers to switch - protects from
10:28 15 competition.
10:28 16 In these internal communications, which
10:28 17 they presumably didn't think would see the light of
10:28 18 day, but they have and they will over the course of
10:28 19 this trial, they were very candid. Protect from
10:28 20 competition, create a barrier to switch to other
10:29 21 products. This is the opposite of a level playing
10:29 22 field.
10:29 23 They forced customers to agree to
10:29 24 provisions that were exclusionary. Here's a provision
10:29 25 that says: Good standing. Good standing in the eyes

10:29 1 of Invisalign and Align means not diverting prospective
10:29 2 patients into non-Invisalign treatment.
10:29 3 And they said if you don't maintain good
10:29 4 standing, they would even remove you from the Find a
10:29 5 Doctor tool on their website.
10:29 6 Again, in their own communications, they
10:29 7 were candid about what they were trying to do.
10:29 8 Here, this says: Lock in DSOs. Those
10:29 9 are dental service organizations. Lock them in.
10:29 10 So these are all anticompetitive
10:29 11 activities, and you're going to hear about this in
10:29 12 detail, I can promise you, starting today about exactly
10:29 13 what they did. This harmed the entire market.
10:29 14 But with respect to Zendura FLX and
10:29 15 ClearCorrect, Align took this campaign of
10:30 16 anticompetitive conduct to the next level and
10:30 17 specifically targeted Zendura.
10:30 18 So when they learned of it being launched
10:30 19 in 2018, they started to test it. And there's nothing
10:30 20 wrong with that. You're allowed to test competitive
10:30 21 products out in the marketplace, sometimes called
10:30 22 reverse engineering. That's fine. Everybody is
10:30 23 allowed to do that.
10:30 24 But what you do with that information in
10:30 25 terms of whether you target someone unfairly is a whole

10:30 1 other matter. Here, after conducting some testing,
10:30 2 they said: It's the best material we've seen so far.
10:30 3 Now, remember Ms. Durie made a few
10:30 4 criticisms of the ClearCorrect aligners. Well, here
10:30 5 they are internally saying Zendura FLX is the best
10:30 6 material we've seen so far.
10:30 7 And they were very, very specific in what
10:30 8 it was, and they acknowledged that Bay Materials had
10:30 9 reverse, the reverse of SmartTrack, hard-soft-hard.
10:30 10 SmartTrack was soft-hard-soft. So this is the
10:31 11 opposite. They're recognizing that Bay Materials had
10:31 12 the reverse approach.
10:31 13 Mr. Hogan was worried. He said: I'm
10:31 14 really worried about marginalizing SmartTrack. I am
10:31 15 just looking for any area of leverage for SmartTrack
10:31 16 versus this material. Looking for leverage against
10:31 17 this new competitive product.
10:31 18 And then he said -- or he received an
10:31 19 e-mail from his colleague, the vice president of
10:31 20 research and development, Srini Kaza: Unless we can
10:31 21 stop with IP, they will keep coming.
10:31 22 IP stands for intellectual property, and
10:31 23 patents are a form of intellectual property. So unless
10:31 24 we can stop with IP, they will keep coming.
10:31 25 They viewed it as a big threat.

10:31 1 Here's another internal presentation, and
10:31 2 they describe it as Bay Materials hard-soft-hard
10:31 3 structure. They didn't say this is some copy of our --
10:31 4 or knockoff of soft-hard-soft. They said this is the
10:31 5 Bay Materials hard-soft-hard. And they viewed it, in
10:32 6 their own words, as a big threat to the superiority of
10:32 7 SmartTrack.
10:32 8 Now, when Straumann acquired Bay
10:32 9 Materials, Mr. Hogan e-mailed Mr. Pudipeddi, and he
10:32 10 said: Read this over. This is a press release about
10:32 11 the acquisition. They're the best competitor we have,
10:32 12 referring to Straumann.
10:32 13 He also said to Mr. Pudipeddi -- this is
10:32 14 the CEO of the company: I just wanted to get this
10:32 15 asset off the market. Meaning Bay Materials and
10:32 16 Zendura FLX. Again, that's not a level playing field.
10:32 17 That's trying to remove the competition in unfair ways.
10:32 18 So what did they do? Well, they went
10:32 19 back to the Patent Office. They went back to the
10:32 20 Patent Office. And recall, years before, they had
10:32 21 submitted a sworn declaration to the Patent Office
10:32 22 saying that they had produced the SmartTrack material
10:32 23 with the two soft layers and a hard layer in the
10:32 24 middle. And that was true. That was true.
10:32 25 They went back to the Patent Office and

10:32 1 tried to stretch the claims, stretch the claims to get
10:32 2 new claims to go after Zendura FLX. And they submitted
10:33 3 new applications in a new declaration.
10:33 4 Now, this is our red line, so to speak,
10:33 5 showing the differences between the earlier declaration
10:33 6 that was made to the Patent Office and the new
10:33 7 declaration, and there were lots of changes. And we're
10:33 8 going to take a hard look at those over the course of
10:33 9 this trial to see if those new statements in the
10:33 10 changed declarations were well supported.
10:33 11 And let me make two points right now.
10:33 12 We think you will see that Align had
10:33 13 ample data that was relevant to the veracity and the
10:33 14 truthfulness of these statements that was not provided
10:33 15 to the Patent Office. That was not provided to the
10:33 16 Patent Office. You're going to have to consider the
10:33 17 question why.
10:33 18 The second thing is that I do want to
10:33 19 know -- Ms. Durie said, well, when a company sees that
10:33 20 someone's using their invention, they can go to the
10:33 21 Patent Office and file a new application.
10:33 22 I want to make one thing crystal clear.
10:33 23 Align never went to the Patent Office and said, we
10:34 24 think Zendura FLX is infringing. We'd like to make
10:34 25 sure you agree with that.

10:34 1 They never said that. Not once.
10:34 2 The Patent Office had utterly no idea,
10:34 3 none, none, that the patents that they were applying
10:34 4 for were going to be used against Zendura FLX and
10:34 5 ClearCorrect. There was not a hint of that in any
10:34 6 statement made to the Patent Office, not once, not
10:34 7 ever. The Patent Office had no idea whatsoever what
10:34 8 Align would one day do with the patents that they were
10:34 9 applying for in that time period.
10:34 10 Now, based on things like that changed
10:34 11 declaration, asserted patents did issue, and those are
10:34 12 the material patents in this case.
10:34 13 And you will see, ladies and gentlemen,
10:34 14 that despite trying to stretch the claims to get IP to
10:34 15 knock Zendura off the market, they failed. The claims
10:34 16 are not met. And the reason why is you need to look at
10:34 17 these very carefully.
10:34 18 Each of these claims has very particular
10:35 19 requirements that need to be met. And these
10:35 20 requirements, these requirements originated from
10:35 21 research and development that culminated in the
10:35 22 soft-hard-soft configuration. And it's not surprising
10:35 23 that they are a better fit for soft-hard-soft and that
10:35 24 they don't fit the hard-soft-hard material used by
10:35 25 ClearCorrect.

10:35 1 And just to give you one example of one
10:35 2 claim, we have this language here on "elongation at
10:35 3 break of greater than about 200 percent." You will see
10:35 4 the overwhelming evidence of testing that occurred
10:35 5 before this lawsuit was filed and after is that the
10:35 6 elongation at break of the ClearCorrect aligners and
10:35 7 the materials in them is less than, less than this
10:35 8 requirement. There's no infringement.
10:35 9 Now, let me ask Mr. John Lahlouh to stand
10:35 10 up for just a moment. Because in this case, Align is
10:35 11 not just arguing that there is infringement, but they
10:35 12 are arguing that there was willful infringement.
10:36 13 Willful infringement.
10:36 14 Mr. Lahlouh was at Bay Materials -- has
10:36 15 been at Bay Materials for almost 25 years, and he was
10:36 16 centrally involved in the work that led to Zendura FLX.
10:36 17 That 2002 notebook was his. He's had a
10:36 18 distinguished materials scientist career for decades on
10:36 19 a whole wide range of industries, including the
10:36 20 materials used in dental aligners. And you're going to
10:36 21 hear, you're going to hear that the Zendura FLX
10:36 22 material reflected his own hard work and his own
10:36 23 innovation as well as that of his colleagues.
10:36 24 Now, Align has told us that they are
10:36 25 going to call him as part of --

10:36 1 THE COURT: Can he sit -- can he sit
10:36 2 down?
10:36 3 MR. MUELLER: Yes. You can sit down,
10:36 4 Mr. Lahlouh.
10:36 5 (Laughter.)
10:36 6 MR. MUELLER: Thank you.
10:36 7 Align has told us that Mr. Lahlouh will
10:36 8 be called as part of their case, which they have every
10:36 9 right to do. They have every right to do. But that
10:36 10 means he's going to be cross-examined before he has a
10:36 11 chance for us to ask him some additional questions to
10:36 12 make sure you receive the full story of what he's done.
10:37 13 And all I'll ask you is just, if you
10:37 14 could, make sure you listen to his full story, his full
10:37 15 story, including when we get a chance to ask him some
10:37 16 questions about all the work he did and all the facts
10:37 17 that are relevant to the development of Zendura FLX.
10:37 18 I think you're going to find that he's a
10:37 19 good man who did the right thing at every turn and that
10:37 20 Zendura FLX reflects his own hard work and his own
10:37 21 innovation and that he took nothing, nothing from
10:37 22 Align.
10:37 23 Now, the same is true for the other
10:37 24 patent in this case. This involves a very particular
10:37 25 scanner feature. And to be clear, this patent doesn't

10:37 1 cover the basic idea of an intraoral scanner. Those
10:37 2 have been around for decades.
10:37 3 This covers a very specific feature used
10:37 4 in certain scenarios when after an initial scan, one of
10:37 5 the teeth is physically moved in a patient's mouth and
10:37 6 there needs to be a rescan. In that scenario, this
10:37 7 claim is directed to a very specific way of doing even
10:37 8 that. You have to use a particular type of surface
10:37 9 data.
10:37 10 And you will hear that the scanners that
10:38 11 Straumann sells don't use that very specific type of
10:38 12 rescan approach, doesn't use the surface data required
10:38 13 by that very particular approach for that very specific
10:38 14 scenario. So there too, there is no infringement.
10:38 15 One more note on the scanners. In sharp
10:38 16 contrast to the iTero scanner that Align sells, where
10:38 17 Align says to doctors, you have to use our scanner if
10:38 18 you want Invisalign, and then you will see the evidence
10:38 19 will show that that scanner is more cumbersome to use
10:38 20 with other aligners, that's part of their effort to
10:38 21 create that closed system and lock in customers, lock
10:38 22 in doctors.
10:38 23 In contrast, Straumann, which its scanner
10:38 24 business came from a company that was called Dental
10:38 25 Wings. And in product literature, they described it as

10:38 1 the Dental Wings Open System, Open System.
10:39 2 That was true for the original Dental
10:39 3 Wings products and is true today for the scanners at
10:39 4 issue in this case. They're open products.
10:39 5 ClearCorrect will sell a dentist dental
10:39 6 aligners even if they don't buy their scanner, okay?
10:39 7 And the Straumann scanner will work just as well with
10:39 8 any company's aligner. It's an open system. Open on
10:39 9 the supply of aligners. Open on the supply of
10:39 10 scanners.
10:39 11 And that's the way it's done in this
10:39 12 industry by other companies as well, with one
10:39 13 exception. Align. Align is the closed system company.
10:39 14 Align is the lock-in company. And Align has that
10:39 15 dominant market position in substantial part because of
10:39 16 its lock-in closed system approach.
10:39 17 Now, Ms. Durie showed you this clause in
10:39 18 the patent, the patent clause in the Constitution,
10:39 19 which says: To promote progress of science and the
10:39 20 useful arts.
10:39 21 And I'd like to ask you to consider, as
10:39 22 you hear the evidence in this case, is this set of
10:39 23 patent claims being made by Align here really to
10:40 24 promote the progress of science and the useful arts?
10:40 25 And I suggest to you the evidence will show it's not.

10:40 1 It's not. It's yet another step in the continuing
10:40 2 campaign to suppress competition from companies like
10:40 3 ClearCorrect.
10:40 4 And in the end, ladies and gentlemen,
10:40 5 ClearCorrect is the victim here. This is Ms. Durie's
10:40 6 slide, and she showed that ClearCorrect has lost money
10:40 7 in certain time periods. And that's true. That's
10:40 8 true.
10:40 9 It's not because they have a bad product.
10:40 10 You've heard and seen about documents that will be
10:40 11 introduced where Align recognizes how good that product
10:40 12 is and describes it as the best competitor out there in
10:40 13 terms of Straumann and describes the material itself as
10:40 14 a competitive threat.
10:40 15 ClearCorrect and the other companies
10:40 16 shown here -- there's one company missing. The other
10:40 17 companies shown here are suffering because of the
10:40 18 anticompetitive conduct of Align. ClearCorrect and
10:40 19 Straumann owe Align nothing for the patent claims
10:40 20 because there's no infringement for these patents.
10:41 21 None. ClearCorrect and Straumann owe zero.
10:41 22 But we are going to ask for compensation
10:41 23 for the anticompetitive conduct of Align.
10:41 24 We will present an economist named
10:41 25 Dr. Ray Perryman, and he will demonstrate and he will

10:41 1 show that even a very conservative estimate of the harm
10:41 2 suffered by ClearCorrect is in the hundreds of millions
10:41 3 of dollars because of lost sales attributable to the
10:41 4 anticompetitive conduct of Align. Anticompetitive
10:41 5 conduct that for years and years and years has been
10:41 6 unfairly tilting the playing field through this closed
10:41 7 system and these lock-in strategies.
10:41 8 And on top of all that, patent claims
10:41 9 that are not well founded. No infringement by Align --
10:41 10 I'm sorry, no infringement by ClearCorrect or
10:41 11 Straumann. And the real victim here is ClearCorrect.
10:41 12 This is a case, this is a case about
10:41 13 competition. What's fair and what's not. This is a
10:41 14 case about what Invisalign and Align have done to
10:42 15 maintain what you see here. Because if we go back one
10:42 16 slide, did you notice there was one company missing?
10:42 17 THE COURT: Counsel, you have two
10:42 18 minutes.
10:42 19 MR. MUELLER: Thank you, Your Honor.
10:42 20 Align. All of the numbers you see here
10:42 21 reflect those companies clustered at the bottom. The
10:42 22 missing company is Align, and Align is where Align is
10:42 23 not just because Align makes a good product. It does.
10:42 24 And credit where credit is due. Align is where Align
10:42 25 is because of the anticompetitive conduct.

10:42 And, ladies and gentlemen, after the
10:42 evidence is in, after we have presented documents and
10:42 witness testimony on all the issues in this case, we're
10:42 going to return to you and we're going to ask you to
10:42 right the wrongs, hold Align accountable for its
10:42 anticompetitive conduct, reject, reject their baseless
10:42 patent claims because there is no infringement, none,
10:42 the patents in this case.
10:42 We're going to ask you to hold them
10:42 accountable under federal and Texas state antitrust law
10:43 for locking in customers, creating a closed system,
10:43 suppressing competition, stacking the deck, and tilting
10:43 the playing field.
10:43 Once you have all the evidence, we will
10:43 ask you to return a verdict in favor of the defendants.
10:43 Thank you very much, ladies and
10:43 gentlemen.
10:43 THE COURT: Thank you, sir.
10:43 Ladies and gentlemen of the jury, we're
10:43 going to take our morning recess now. Before we part,
10:43 I have a couple of instructions I'm going to give you
10:43 about what to do while we're not -- while you all are
10:43 together but you're not with us.
10:43 The first is you may not discuss anything
10:43 about the case amongst yourselves. When we finish with

10:43 1 the trial, you'll have the opportunity to deliberate,
10:43 2 but you will have all the evidence at that point. So I
10:43 3 would ask you during the day and then when you go home
10:43 4 tonight, you can certainly tell your spouses and family
10:43 5 you were at trial and had a great judge and all the
10:43 6 stuff people say, but you can't talk about the
10:44 7 evidence. That's number one.
10:44 8 Number two, I'm told by my sons there's
10:44 9 something called social media. I'm unfamiliar with it
10:44 10 personally, but I'm told it exists. Some of you may or
10:44 11 may not engage in it. That -- it's fine for you to
10:44 12 continue to engage in it, but please don't look up
10:44 13 anything about the case on social media. And
10:44 14 especially please don't post anything about the case
10:44 15 during the trial.
10:44 16 And you're thinking, who would do that?
10:44 17 The reason I'm telling you is because someone did that.
10:44 18 And, finally, when you go home, if you're
10:44 19 tempted -- you've heard all this stuff about all these
10:44 20 amazing products. You may think, gosh, it'd be very
10:44 21 helpful for me to go do a little independent research.
10:44 22 You absolutely may not do that. The
10:44 23 lawyers have invested years in preparing the evidence
10:44 24 that they want you to hear and consider. And again, at
10:44 25 the end of the trial, I will instruct you that that's

10:44 1 the only thing that you may consider. So it would be
10:45 2 wasted time on your part to go do an independent
10:45 3 investigation.
10:45 4 Now, the good news is from now on every
10:45 5 time we break, I'm going to just say, please remember
10:45 6 my instructions, and not go through all this.
10:45 7 But with that being said, we'll have 10
10:45 8 or 15 minutes of recess. We'll take up our first
10:45 9 witness the plaintiff puts on when we return. And then
10:45 10 we'll go as close to lunch as -- as it takes us. And
10:45 11 then we'll see where we go from there in terms of
10:45 12 another witness or not.
10:45 13 So again, please don't discuss the case
10:45 14 while you're in the jury room.
10:45 15 THE BAILIFF: All rise.
10:45 16 (Jury exited the courtroom.)
10:45 17 THE COURT: Thank you. You may be
10:45 18 seated.
10:45 19 I thought the openings were very good. I
10:46 20 actually did not regret giving either of you
10:46 21 45 minutes, which I thought over the weekend I probably
10:46 22 would. And so thank you for that.
10:46 23 When we get back, we'll start with the
10:46 24 first witness, who is Dr. Derakhshan.
10:46 25 MS. DURIE: Derakhshan.

10:46 1 THE COURT: Okay. Is there anything we
10:46 2 need to take up before we break?
10:46 3 MS. DURIE: Not from our perspective,
10:46 4 Your Honor.
10:46 5 MR. MUELLER: No, Your Honor. Thank you.
10:46 6 THE COURT: Okay. We'll be back in --
10:46 7 please be back and ready to go by 11:00.
10:46 8 MS. DURIE: Thank you.
10:46 9 THE BAILIFF: All rise.
10:46 10 (Recess taken.)
11:03 11 THE BAILIFF: All rise.
11:03 12 THE COURT: Please remain standing for
11:03 13 the jury.
11:03 14 (Jury entered the courtroom.)
11:03 15 THE COURT: Thank you. You may be
11:03 16 seated.
11:03 17 Counsel, you may call your first witness,
11:03 18 please.
11:03 19 MS. DURIE: Thank you, Your Honor. The
11:03 20 plaintiff calls Dr. Mitra Derakhshan.
11:03 21 (The witness was sworn.)
11:03 22 DIRECT EXAMINATION
11:03 23 BY MS. DURIE:
11:04 24 Q. Good morning.
11:04 25 A. Good morning.

11:04 1 Q. Could you please introduce yourself to the
11:04 2 jury?
11:04 3 A. Sure. Hello. I'm Dr. Mitra Derakhshan. I'm
11:04 4 an orthodontist as well as Align Technology's executive
11:04 5 vice president and chief clinical officer.
11:04 6 Q. How long have you worked at Align?
11:04 7 A. Almost 26 years.
11:04 8 Q. What -- what do you do? You said you're the
11:04 9 chief clinical officer. What does that mean?
11:04 10 A. I really focus about teaching around the
11:04 11 science of Invisalign. Anything also around clinical
11:04 12 education, running the clinical studies, working with
11:04 13 our product development team, and just in general focus
11:04 14 on the science of Invisalign.
11:04 15 Q. So I want to talk about Align in a sec, but if
11:04 16 you could initially just tell us a little bit about
11:04 17 your own background.
11:04 18 A. Yeah, sure. I went to dental school at the
11:04 19 University of Michigan. So it's getting a doctorate
11:05 20 degree in dental surgery. And then I did a master's
11:05 21 degree at the University of Illinois in Chicago.
11:05 22 Q. And what -- what is orthodontics?
11:05 23 A. Orthodontics is really about -- the science
11:05 24 about moving teeth or moving teeth through bone. But
11:05 25 since it involves bone, it's also about treating the

11:05 1 bite, treating the jaws, and really improving oral
11:05 2 health.
11:05 3 Q. Why did you decide to go into orthodontics?
11:05 4 A. Well, first and foremost, I love helping
11:05 5 people. And it was really a passion of mine to really
11:05 6 focus on something where I could impact people's lives.
11:05 7 And I know that really by changing a smile on someone,
11:05 8 I can really make a difference, whether it's just from
11:05 9 the way they present themselves, it could be the way
11:05 10 they could, you know, better brush and floss, have
11:05 11 better oral health.
11:05 12 And we all know now that that oral health, the
11:05 13 mouth, is the gateway to the body. And I could
11:05 14 actually make a bigger impact in the overall health of
11:05 15 the human beings.
11:06 16 Q. Do you still practice as an orthodontist
11:06 17 today?
11:06 18 A. I do. I occasionally practice, yes.
11:06 19 Q. And tell us a little bit about that.
11:06 20 A. Yeah. I work in an office out in Maryland,
11:06 21 and also I do some clinical research in one of our
11:06 22 offices out in California.
11:06 23 Q. And why do you still see patients if you're
11:06 24 employed at Align?
11:06 25 A. Well, first, I love it. I mean, I love -- you

11:06 1 know, that's what I went to, you know, school for, that
11:06 2 passion to meet patients from all ages, whether they're
11:06 3 kids, teens, adults, and really make an impact.
11:06 4 But I also think it's important to, you know,
11:06 5 use the product, see what's happening in the office,
11:06 6 and really test a lot of what we innovate and continue
11:06 7 to innovate at Align.
11:06 8 Q. How did you come to work at Align?
11:06 9 A. I was studying for my dental boards, and
11:06 10 actually one of my classmates, who's also an
11:06 11 orthodontist, was telling me about this company. And I
11:06 12 went to visit them. They were looking for
11:07 13 orthodontists.
11:07 14 And I was just blown away and fascinated by
11:07 15 this new way of teeth straightening that could be
11:07 16 really done digitally, you know, through computers and
11:07 17 also through clear plastic. And it was just something
11:07 18 I really wanted to be a part of. Just there's a --
11:07 19 this new alternative to braces.
11:07 20 Q. How big was Align when you joined?
11:07 21 A. We were probably about less than 100 people or
11:07 22 so.
11:07 23 Q. And tell us just a little bit about those
11:07 24 early days.
11:07 25 A. Yeah. I mean, you know, you could imagine we

11:07 1 were a start-up. We were all just working together,
11:07 2 trying to figure out how do you move teeth, how do you
11:07 3 move teeth with plastic, just coming up with a lot of
11:07 4 different ideas and, you know, developing the software,
11:07 5 developing, you know, principles of tooth movement that
11:07 6 were similar to braces.
11:07 7 But also just trying to educate doctors
11:07 8 because, you know, this was a new way to teeth
11:08 9 straightening, and we had to get out there and educate
11:08 10 the profession about how to do this.
11:08 11 Q. What did Align's solution have in common with
11:08 12 braces at that time?
11:08 13 A. Well, as a doctor, in the end, for me, it's
11:08 14 about giving you the outcome that you want. And so
11:08 15 whether I'm going to use braces, whether I'm going to
11:08 16 use clear aligners or Invisalign, that's what's most
11:08 17 important or what's most similar. It's getting you
11:08 18 that quality outcome with a product that I can do based
11:08 19 on the treatment plan that I make for you.
11:08 20 Q. And what was different, from your point of
11:08 21 view, about braces and aligners?
11:08 22 A. Well, I think, you know, if we -- if you've
11:08 23 seen braces and, you know, there's an aligner, the
11:08 24 obvious is one is, you know, metal and they're glued to
11:08 25 teeth. And the other one is, you know, clear plastic

11:08 1 and removable.
11:08 2 Q. Did the Invisalign system as it came to be
11:08 3 involve anything other than just the aligners?
11:09 4 A. Oh, yes. I mean, you know, that's -- the end
11:09 5 product or the aligner is, you know, what you end up
11:09 6 putting in your mouth to move your teeth, but there's a
11:09 7 whole lot of innovation and sophistication behind that.
11:09 8 You need software, computer software, that
11:09 9 digitally models the teeth from beginning to end. You
11:09 10 need manufacturing to be able to fabricate and make the
11:09 11 aligners. There's a lot that goes into different
11:09 12 features into the aligners so we could be able to treat
11:09 13 all different types of cases. There's, you know, how
11:09 14 do we get models of your teeth and processing those
11:09 15 models. So there's a lot. It's really a full system.
11:09 16 Q. What about treatment planning? Can you just
11:09 17 tell us how that works?
11:09 18 A. Yeah. Treatment planning is when we receive a
11:09 19 3D representation of the model of your teeth. We
11:09 20 basically take your initial position based on the
11:09 21 doctor's treatment plan of how they want to move your
11:10 22 teeth and we map that out. We basically create like a
11:10 23 little roadmap in a computer program, moving your teeth
11:10 24 stage by stage or bit by bit until you get the final
11:10 25 result.

11:10 1 Q. You should have a binder in front of you
11:10 2 there. If you can turn to DTX-433 in your binder.
11:10 3 Can you tell us what that is?
11:10 4 A. Yes. This is the Invisalign system textbook.
11:10 5 It's the first textbook on the Invisalign system.
11:10 6 MS. DURIE: We offer DTX-433.
11:10 7 MR. MUELLER: No objection, Your Honor.
11:10 8 THE COURT: Admitted.
11:10 9 MS. DURIE: And if -- is it received?
11:10 10 I'm sorry.
11:10 11 And if I could please have you publish,
11:10 12 Mr. Smith, the first page of DTX-433.
13 BY MS. DURIE:
11:10 14 Q. And you've got a physical copy of a book next
11:10 15 to you that's PTX-898. Can you hold that up for the
11:10 16 jury and just explain to them what this is?
11:10 17 A. Yes. This is an Invisalign textbook. It's a
11:11 18 textbook that basically talks a lot about how to use
11:11 19 Invisalign, how -- what's the science behind
11:11 20 Invisalign. And part of the reason why we put this
11:11 21 textbook together, in addition to Professor Tuncay, is
11:11 22 really a way to educate, educate our doctors on how to
11:11 23 use our products and our innovations.
11:11 24 Q. Are you one of the people who wrote the book?
11:11 25 A. Yes. I have some chapters in the book myself.

11:11 1 Q. So does Align still do doctor education today?
11:11 2 A. Oh, definitely. I mean, education is at the
11:11 3 core of what we do.
11:11 4 Q. And what is it that you do?
11:11 5 A. We have different forms of education. We
11:11 6 might run large events. We have sometimes webinars.
11:11 7 We have, you know, digital websites around education.
11:11 8 We might have small study groups.
11:11 9 But education is where we, you know, help our
11:12 10 doctors understand how to use our products, maybe treat
11:12 11 different types of patients. They might be just
11:12 12 treating adult patients with Invisalign, and they want
11:12 13 to learn how to use them on kids and teens. But also
11:12 14 since we're continually innovating and bringing out new
11:12 15 features to market, we also spend a lot of time
11:12 16 educating our doctors on our new features.
11:12 17 Q. About how much money has Align spent on
11:12 18 clinical education and marketing over the life of the
11:12 19 company?
11:12 20 A. Yeah. At least around $1.4 billion. A lot of
11:12 21 investment.
11:12 22 Q. So let's talk a little bit about teeth
11:12 23 straightening.
11:12 24 Just as an orthodontist at a high level, just
11:12 25 how does that work?

11:12 1 A. Yeah. I mean, teeth straightening is -- you
11:12 2 know, it's about aligning your teeth or moving your
11:12 3 teeth to an end desired state that you want, really
11:12 4 straightening them, but it's not just about aesthetics.
11:12 5 There's a lot around function, your bite, improving
11:12 6 your bite position, and ultimately making it easier for
11:13 7 you to be able to brush and floss, keep your teeth in
11:13 8 healthy gums, and have an overall good oral health.
11:13 9 Q. So for you personally in your practice as an
11:13 10 orthodontist, what treatment options do you offer?
11:13 11 A. It could be braces, Invisalign. It could be a
11:13 12 combination of both.
11:13 13 Q. And how do you decide whether you're going to
11:13 14 offer braces or Invisalign or a combination of both?
11:13 15 A. Yeah. There's -- I mean, it's a clinical
11:13 16 judgment. There's a lot of different factors that go
11:13 17 into it. I talk to my patients, you know, based on,
11:13 18 you know, what they may want. I also look at, you
11:13 19 know, what type of treatment plan we want to attempt,
11:13 20 and then in the end, we're going to choose whichever
11:13 21 product is right for the patient and for that case.
11:13 22 Q. Why might a patient choose braces today?
11:13 23 A. They may for different reasons. Maybe they
11:14 24 may feel that they might not want to wear a removable
11:14 25 appliance. That could be just one simple example.

11:14 1 Q. In your own practice, how do the prices of
11:14 2 braces and clear aligners relate to each other?
11:14 3 A. We price them fairly similar because
11:14 4 ultimately, in the end, it's a way of teeth
11:14 5 straightening. They're both appliances that I can use
11:14 6 for teeth straightening, and so I'm really providing
11:14 7 you the option.
11:14 8 Q. And what is the rough split between braces and
11:14 9 clear aligners in your practice?
11:14 10 A. Yeah. I probably do about 70 to 80 percent
11:14 11 Invisalign and maybe 20 to 30 percent braces.
11:14 12 Q. So let's talk a little bit more about
11:14 13 Invisalign. And I think you've got a couple of clear
11:14 14 plastic aligners up there on the table next to you.
11:14 15 Can you just hold one of them up for the jury
11:14 16 and just explain to us what we're seeing here? This is
11:14 17 PTX-894.
11:15 18 A. Yeah. This is a clear aligner, an Invisalign
11:15 19 clear aligner, and these usually come in a series or a
11:15 20 set. And what you do is you -- basically, they snap or
11:15 21 snugly fit onto your teeth, and they'll slowly move
11:15 22 your teeth aligner by aligner, which you wear maybe one
11:15 23 to two weeks or what your doctor asked you on how to
11:15 24 wear it, and they're going to move your teeth from
11:15 25 where they started to the end position that your doctor

11:15 1 wants to get to.

11:15 2 MS. DURIE: Your Honor, we offer PTX-894.

11:15 3 MR. MUELLER: No objection.

11:15 4 THE COURT: Admitted.

11:15 5 BY MS. DURIE:

11:15 6 Q. So we have down here, Doctor, a model of some

11:15 7 larger teeth. And with the Court's permission, I would

11:15 8 ask you to step down from the witness box to be able to

11:15 9 demonstrate this using the teeth that are here.

11:15 10 MS. DURIE: Would that be acceptable?

11:15 11 THE COURT: We're good. Yes.

11:16 12 MS. DURIE: Thank you.

11:16 13 BY MS. DURIE:

11:16 14 Q. So could you just explain to us what we're

11:16 15 seeing here in this model?

11:16 16 A. Yeah. So this is an example of --

11:16 17 Q. I can hold it.

11:16 18 A. So this is a set of teeth, and this is a

11:16 19 representation of the --

11:16 20 THE COURT: I don't think that's on.

11:16 21 A. So this is a set -- you know, a set of teeth

11:16 22 and a set of gums. And, for example, if you had some

11:16 23 crooked teeth, you came in and you wanted to get your

11:16 24 teeth straightened, you know, we would have a

11:16 25 discussion about it. We would take a 3D model of this,

11:16 1 send it. And then once the aligners are fabricated,
11:16 2 you'll receive a set of aligners.
11:16 3 THE COURT: Ma'am, if you'll slow down
11:16 4 just a little bit.
11:16 5 THE WITNESS: Keep talking. Is that
11:16 6 better?
11:16 7 THE COURT: If you'll just slow down a
11:16 8 little. Thank you.
11:16 9 THE WITNESS: Yes. Thank you.
11:16 10 A. Then we'll take -- you'll place the aligner,
11:17 11 and you can see that using some gentle constant force
11:17 12 or pressure, which is how we move teeth, whether
11:17 13 through braces or aligners, through that gentle
11:17 14 constant pressure we will slowly move your teeth into
11:17 15 place.
11:17 16 Now, this is just one aligner, but you could
11:17 17 imagine you have a series of these, and they're slowly,
11:17 18 gently putting pressure and moving your teeth until
11:17 19 they become straight.
11:17 20 BY MS. DURIE:
11:17 21 Q. Great. Thank you.
11:17 22 Thank you. So from a patient perspective,
11:17 23 just can you walk us through the process of getting
11:17 24 Invisalign?
11:17 25 A. Yeah. Sure. You know, if you're interested,

11:17 1 usually what happens is, you know, you'd go to a
11:17 2 doctor's office, a dentist or an orthodontist. We
11:17 3 probably start with a dental exam, asking you, you
11:18 4 know, what you want to change about your teeth. We
11:18 5 might take some x-rays, and we have a conversation.
11:18 6 And we talk to you about, you know, your different
11:18 7 options, put together a treatment plan, and then decide
11:18 8 if we want to treat you with braces or Invisalign.
11:18 9 Q. Does the dentist or orthodontist take an
11:18 10 impression of your teeth?
11:18 11 A. Yes. If we -- we're going to start treatment,
11:18 12 we can take an impression, which is a physical
11:18 13 impression. So maybe some of you have had dental work
11:18 14 done, maybe a crown or a bridge. You might remember a
11:18 15 dentist sometimes puts some goop into a tray and sticks
11:18 16 it in your mouth for about two minutes to form and it's
11:18 17 to kind of harden up. You could have an impression
11:18 18 done like that.
11:18 19 Q. And is there an alternative way to have the
11:18 20 equivalent of an impression of your teeth?
11:18 21 A. Yeah. I mean, with innovation and technology,
11:19 22 now there's scanners that are available where
11:19 23 essentially you could do that digitally or through a
11:19 24 digital impression.
11:19 25 MS. DURIE: And if I may approach,

11:19 1 Your Honor, just to move this around.
11:19 2 BY MS. DURIE:
11:19 3 Q. If I could direct your attention to PTX-893,
11:19 4 can you just tell us what that is?
11:19 5 A. Yeah. That's an iTero scanner.
11:19 6 Q. And what does that do?
11:19 7 A. You can see there's a computer screen and then
11:19 8 a wand, and you will take the wand and essentially we
11:19 9 take a picture of your teeth using some cameras. And
11:19 10 you'll see a 3D model, a representation of your teeth,
11:19 11 on that computer screen.
11:19 12 Q. What happens once the treatment plan is ready?
11:19 13 A. Once the treatment plan is ready, I as the
11:19 14 doctor will see the treatment plan in software called
11:19 15 ClinCheck software. I'll get a chance to review it. I
11:19 16 can make any changes that I want. And once I'm ready,
11:20 17 I approve -- approve that treatment plan.
11:20 18 Q. Can anyone prescribe Invisalign?
11:20 19 A. No. You need to be a certified dentist or an
11:20 20 orthodontist.
11:20 21 Q. And other than ordering Invisalign, is there
11:20 22 anything else this scanner can be used for?
11:20 23 A. Oh, yeah. Lots of stuff. You know, it's --
11:20 24 it's a great scanner. I actually love the scanner.
11:20 25 You can just get a 3D model and use it a lot for

11:20 1 patient education, patient visualization.
11:20 2 One thing we can do is we can take, you know,
11:20 3 your scan, for example, if you come to visit us
11:20 4 regularly, and show you changes that are going on maybe
11:20 5 with your gum health.
11:20 6 I use it -- I can use it to order retainers
11:20 7 from labs. I can use it for other clear aligners. I'm
11:20 8 not -- I'm not a dentist per se, but I know the
11:20 9 dentists that I work with, they use it to order
11:20 10 restorative work.
11:20 11 So, you know, you could do a lot with that --
11:20 12 a scanner.
11:21 13 MS. DURIE: If we could please put up
11:21 14 PDX-2.4 demonstrative.
11:21 15 BY MS. DURIE:
11:21 16 Q. Can you please tell us what we're seeing here
11:21 17 on the screen, and it should be up on your screen.
11:21 18 A. Yes. This is just a snapshot of a timeline of
11:21 19 the Align innovations over the years.
11:21 20 Q. There's a reference there to Invisalign G3.
11:21 21 Can you explain what that is briefly?
11:21 22 A. Yeah. That was one of our early innovations
11:21 23 around optimizing the force systems in how do we move
11:21 24 teeth. You know, it's -- we want to move teeth as
11:21 25 effectively and as comfortably on patients as possible.

11:21 1 Q. Now, briefly with respect to the material that
11:21 2 these aligners are made of, there's a reference here in
11:21 3 1999 to PC30. Can you just briefly tell us what that
11:21 4 was?
11:21 5 A. Yeah. PC30 was the first material that was
11:21 6 used to move teeth.
11:22 7 Q. How was that?
11:22 8 A. It was an okay material. It -- it had a lot
11:22 9 of cracking. It broke a lot. It moved teeth okay. It
11:22 10 wasn't as effective as we would have liked.
11:22 11 Q. I see then in 2001, there's a reference to
11:22 12 EX30. What was that?
11:22 13 A. Yeah. That was the next material that we used
11:22 14 to move teeth.
11:22 15 Q. And how did that do?
11:22 16 A. It was okay. It was a single-layer material.
11:22 17 It moved teeth, but we knew that there's got to be a
11:22 18 better way to move teeth. And really, we're -- moving
11:22 19 teeth is all about gentle constant force. And we were
11:22 20 looking at how can we move teeth that same way that you
11:22 21 can move it with braces.
11:22 22 Q. If we move forward to 2013 and the SmartTrack
11:22 23 material, what was the significance of that from a
11:22 24 clinical perspective?
11:22 25 A. Oh, this was a breakthrough. It was -- it --

11:22 1 you could see the impact on the predictability of tooth
11:22 2 movement and the efficacy in the way it could move
11:22 3 teeth, but also in the way that the material would fit,
11:23 4 the way the material would feel, and even just the
11:23 5 comfort of the material from patients.
11:23 6 Q. Now, did Align test SmartTrack before making
11:23 7 it available to the public?
11:23 8 A. Yes.
11:23 9 Q. Were you involved in those clinical trials?
11:23 10 A. Yes.
11:23 11 Q. How many patients were treated in those
11:23 12 clinical trials?
11:23 13 A. Over 1,000 patients.
11:23 14 Q. And were the trials successful?
11:23 15 A. Yes.
11:23 16 Q. Can you tell us a little bit about what your
11:23 17 personal reaction was when you saw the results of those
11:23 18 clinical trials?
11:23 19 A. Yeah. I think we were all excited and
11:23 20 actually amazed. I mean, you know -- you know, our R&D
11:23 21 teams spend eight years. They test hundreds of
11:23 22 materials. And you go -- you go to a clinical trial,
11:23 23 and you see the results and you're like, wow, we have
11:23 24 this great material that's going to make patients'
11:23 25 lives better. It's going to make treatment more

11:23 1 efficient for them. It's going -- it's more
11:23 2 comfortable for them.
11:23 3 And so it's super exciting.
11:23 4 Q. Do you know how much money Align has invested
11:24 5 in research and development over the life of the
11:24 6 company?
11:24 7 A. Yeah. Over $2 billion.
11:24 8 Q. That was billion with a B?
11:24 9 A. Yes, billion with a B.
11:24 10 Q. Has Align received any United States patents
11:24 11 for its innovations?
11:24 12 A. Yes. We have actually over 400 patents.
11:24 13 Q. If I could ask you to turn in your binder to
11:24 14 JTX-78, what do we see here?
11:24 15 A. This is a website in which we have the list of
11:24 16 our patents for the Invisalign system, which is our
11:24 17 clear aligner system, as well as our iTero scanner.
11:24 18 MS. DURIE: We offer JTX-78.
11:24 19 MR. MUELLER: No objection, Your Honor.
11:24 20 THE COURT: Admitted.
11:24 21 MS. DURIE: If we could please publish
11:24 22 the first page.
23 BY MS. DURIE:
11:24 24 Q. I see here there's a heading for Invisalign
11:24 25 and then a list of patents. What are we looking at

11:24 1 here?
11:24 2 A. This is the list of patents that are basically
11:25 3 covered for the Invisalign system as well as our
11:25 4 SmartTrack material.
11:25 5 MS. DURIE: And if we could flip forward
11:25 6 to Page 3, please.
7 BY MS. DURIE:
11:25 8 Q. I see there a list, says the iTero, and
11:25 9 there's a list of patents. What are we looking at
11:25 10 here?
11:25 11 A. Same. This is our public page in which -- is
11:25 12 available that lists all of our patents around our
11:25 13 scanners and our scanning technology.
11:25 14 Q. And does Align tell people about this web
11:25 15 page?
11:25 16 A. Yes, we do.
11:25 17 Q. Could your turn in your binder to PTX-1269?
11:25 18 Do you see where I am?
11:25 19 A. Yes.
11:25 20 Q. What is PTX-1269?
11:25 21 A. This is a use and care instructions that come
11:25 22 with your set of aligners.
11:25 23 MS. DURIE: We offer PTX-1269.
11:25 24 MR. MUELLER: No objection.
11:25 25 THE COURT: Admitted.

11:25 1 MS. DURIE: And if we could please go to
11:25 2 the bottom of Page 13 and publish that.
3 BY MS. DURIE:
11:25 4 Q. What do we see here?
11:25 5 You can see it on the screen. It's on the
11:26 6 screen.
11:26 7 A. This shows basically our CE marking or a lot
11:26 8 of our regulatory marking, as well as you could see a
11:26 9 direct link or URL to our patent page, our patent
11:26 10 marking.
11:26 11 Q. So the product insert directs people to the
11:26 12 website?
11:26 13 A. Exactly.
11:26 14 Q. Can you please turn in your binder to
11:26 15 PTX-1338?
11:26 16 Tell me when you're there.
11:26 17 A. Yes.
11:26 18 Q. What is this?
11:26 19 A. This is the iTero user manual.
11:26 20 MS. DURIE: We offer PTX-1338.
11:26 21 MR. MUELLER: No objection.
11:26 22 THE COURT: Admitted.
11:26 23 MS. DURIE: And if we can please turn to
11:26 24 Page 3 and publish Page 3.
25 BY MS. DURIE:

11:26 1 Q. What are we seeing here?
11:26 2 A. Yes. Similar to what we just saw with
11:26 3 Invisalign, but this is for our scanning. It shows the
11:26 4 same, the URL and how to take a look at all of our
11:26 5 patents around our scanning technology.
11:26 6 Q. And if you can please turn in your binder to
11:26 7 PTX-1141, 1148, and 1149. What are these?
11:27 8 A. These are many -- these are many of the awards
11:27 9 that we've received for our Invisalign system as well
11:27 10 as our scanner system, but I think what we're most
11:27 11 proud of is these are a lot of peer-reviewed awards.
11:27 12 So these are industry peer-reviewed awards
11:27 13 that have basically, you know, honored our technology
11:27 14 and our innovations.
11:27 15 MS. DURIE: We offer PTX-1141, 1148, and
11:27 16 1149.
11:27 17 MR. MUELLER: No objection.
11:27 18 THE COURT: Admitted.
19 MS. DURIE: And if we could please show
20 PDX-2.5.
21 BY MS. DURIE:
11:27 22 Q. Dr. Derakhshan, is this some of the awards
11:27 23 that Align has won?
11:27 24 A. Yes.
11:27 25 Q. Now, I want to --

11:27 1 MS. DURIE: We can take that down.
2 BY MS. DURIE:
11:27 3 Q. I want to talk to you for a minute about
11:27 4 competition. What other products compete with
11:27 5 Invisalign aligners?
11:27 6 A. Well, you know, it's first and foremost
11:27 7 braces. It's about teeth straightening, right, and the
11:27 8 choice that doctors have to teethen (sic) straight or
11:28 9 patients have to straighten teeth.
11:28 10 Q. Are you familiar with other clear aligner
11:28 11 companies other than Align?
11:28 12 A. Yes, I am.
11:28 13 Q. What are some of those companies?
11:28 14 A. Angel Aligner, Spark, ClearCorrect, uLab.
11:28 15 Q. Are those products sold in the U.S.?
11:28 16 A. Yes.
11:28 17 Q. Now, where is Straumann located?
11:28 18 A. Straumann's based out of Switzerland.
11:28 19 Q. Where do they have facilities?
11:28 20 A. They have facilities all around the world, you
11:28 21 know, including Costa Rica, Poland.
11:28 22 Q. Does Align have a facility in Costa Rica?
11:28 23 A. Yes. We have a facility in Costa Rica.
11:28 24 Q. Where is Straumann's facility?
11:28 25 A. Very close to ours.

11:28 1 Q. Does Align have a facility in Poland?
11:28 2 A. Yes.
11:28 3 Q. Where is Straumann's facility in Poland?
11:28 4 A. Very close to ours. In fact, they tried to
11:28 5 come into the same building as our own building.
11:28 6 Q. Where -- where is that in Poland?
11:28 7 A. It's in Breslau, or sometimes called Wroclaw.
11:29 8 Q. Big city?
11:29 9 A. No. It's not a very big city. I didn't know
11:29 10 it.
11:29 11 Q. Now, I want to go back and talk for a minute
11:29 12 about your practice and your use of the scanner. What
11:29 13 kind of scanner does your practice have?
11:29 14 A. We have iTeros.
11:29 15 Q. Do other doctors in your practice use other
11:29 16 aligners other than Invisalign?
11:29 17 A. Yeah, they do.
11:29 18 Q. How does that work?
11:29 19 A. Well, they just -- they take an iTero scan,
11:29 20 and they submit it through the -- it's called an STL
11:29 21 file. It's an industry standard file. You just export
11:29 22 it, and you could send it to any lab you want.
11:29 23 Q. Have you heard any complaints in your practice
11:29 24 about that?
11:29 25 A. No. Never.

11:29 1 Q. Why do you -- do you prescribe Invisalign or
11:29 2 do you prescribe other clear aligners?
11:29 3 A. I prescribe Invisalign mainly because, you
11:29 4 know, I work for Align, but mainly because I actually
11:29 5 think it's the best product out there.
11:29 6 Q. Do any of your patients specifically ask you
11:29 7 for Invisalign?
11:29 8 A. Yeah, they do. I mean, there's awareness
11:30 9 around Invisalign as a -- as a brand, as a product out
11:30 10 there.
11:30 11 Q. And why do you say you think Invisalign is the
11:30 12 best?
11:30 13 A. Well, I mean, the years of innovation, the
11:30 14 focus really on quality, getting excellent treatment
11:30 15 outcomes, and all the pursuit of innovation that we do
11:30 16 is really just about how can we bring a better way or
11:30 17 another way to teeth straightening for people and the
11:30 18 impact that that has on their lives.
11:30 19 Q. So what makes you the happiest about the work
11:30 20 that you do?
11:30 21 A. You know, I kind of mentioned it, but it's
11:30 22 really -- it's how I can impact a life. You know, I
11:30 23 love treating kids. I love treating teens, adults, you
11:30 24 know, anybody from 7, you know, all the way, you know,
11:30 25 70, 80. But you could imagine when someone gets their

11:30 1 teeth straightened, how before they might not have
11:31 2 smiled, they cover their mouth, they might have a tooth
11:31 3 sticking out, but you straighten their teeth, that
11:31 4 confidence it brings to them, the smile, the way they
11:31 5 start to stand, the way they start to carry themselves.
11:31 6 But it's much more about that. It's about the
11:31 7 health benefits. It's about how you can keep your gum
11:31 8 health better. It's about how you could prevent things
11:31 9 in the future like tooth loss, tooth wear, how you just
11:31 10 could keep your -- keep that oral health for the
11:31 11 longevity of your life. It's just so important.
11:31 12 Q. Why have you stayed with Align for 26 years?
11:31 13 A. I love the company. I think it's an amazing
11:31 14 company. It's a great place to work. There's a great
11:31 15 team of people. We're constantly thinking about
11:31 16 patients. We're constantly thinking about how do we,
11:31 17 you know, make things better for patients and just
11:31 18 looking at better ways to move teeth, better ways to
11:32 19 take digital impressions and just help doctors with
11:32 20 their practices.
11:32 21 MS. DURIE: Thank you, Dr. Derakhshan.
11:32 22 Pass the witness.
11:32 23 CROSS-EXAMINATION
11:32 24 BY MR. MUELLER:
11:32 25 Q. Good morning, ma'am.

11:32 1 A. Good morning.
11:32 2 Q. My name is Joe Mueller. It's nice to meet
11:32 3 you.
11:32 4 A. It's nice to meet you too.
11:32 5 Q. I just want to make sure I'm pronouncing your
11:32 6 last name. It's Derakhshan?
11:32 7 A. Yes. You got it.
11:32 8 Q. Thank you. Dr. Derakhshan.
11:32 9 Dr. Derakhshan, you have been at Align
11:32 10 for about 25 years or so; is that right?
11:32 11 A. Almost 26. Yes.
11:32 12 Q. And you are Align's chief clinical officer,
11:32 13 correct?
11:32 14 A. Correct.
11:32 15 Q. You are an executive vice president?
11:33 16 A. Yes.
11:33 17 Q. And you are part of Align's executive
11:33 18 management team, true?
11:33 19 A. Yes.
11:33 20 Q. And, Dr. Derakhshan, you work with the chief
11:33 21 executive officer of Align, a gentleman named Joe
11:33 22 Hogan, true?
11:33 23 A. Yes.
11:33 24 Q. Now, you were asked by Align to serve as the
11:33 25 very first witness in this trial, right?

11:33 1 A. Yes.
11:33 2 Q. And were you here for the opening statements?
11:33 3 A. Yes. I was.
11:33 4 Q. Okay. Let me ask you a few basic questions
11:33 5 before we get into some of the details here.
11:33 6 You are a practicing orthodontist, as you
11:33 7 said?
11:33 8 A. Yes.
11:33 9 Q. And I assume you would agree that for
11:33 10 orthodontists, all things being equal, more treatment
11:33 11 options is a good thing?
11:33 12 A. Yes.
11:33 13 Q. And I think you'd also agree, and you tell me
11:33 14 if you do disagree or agree, that all things being
11:33 15 equal, lower prices for dental treatments is a good
11:33 16 thing?
11:34 17 A. Can you elaborate a little bit about when you
11:34 18 say "all things being equal"?
11:34 19 Q. Products of equal quality --
11:34 20 A. Uh-huh.
11:34 21 Q. -- price -- lower prices is a good thing,
11:34 22 right?
11:34 23 A. Yeah. It can be. It can be.
11:34 24 Q. And would you also agree with me,
11:34 25 Dr. Derakhshan, that it's important, it's important in

11:34 1 the dental industry that you are part of that products
11:34 2 are offered on a level playing field?
11:34 3 A. It depends. I think in the end it's about
11:34 4 patients and their treatment plan.
11:34 5 Q. Well, Dr. Derakhshan, if you could please, yes
11:34 6 or no, do you think it's important that companies in
11:34 7 the clear aligner industry compete on a level playing
11:34 8 field?
11:34 9 A. I think it's about the teeth-straightening
11:34 10 industry, but yes.
11:34 11 Q. Well, ma'am, if you could, is it important in
11:34 12 the clear aligner industry for companies to compete on
11:34 13 a level playing field?
11:34 14 A. Yes.
11:34 15 Q. Now, do you think that locking in doctors to a
11:35 16 particular treatment approach is consistent with a
11:35 17 level playing field?
11:35 18 A. Well, as a doctor, I'm not aware of any
11:35 19 locking in of doctors. I mean, we're doctors. We have
11:35 20 choices in the treatments we can provide.
11:35 21 Q. Well, Dr. Derakhshan, you've been at Align for
11:35 22 over 25 years, and you're on the executive management
11:35 23 team, right?
11:35 24 A. Yes.
11:35 25 Q. And you know, you know that Align has taken

11:35 1 steps to lock in doctors to Invisalign and the iTero
11:35 2 scanner, true?
11:35 3 A. No. I disagree with that.
11:35 4 Q. All right. Do you think as a general matter,
11:35 5 as a general matter, that a closed product system is
11:35 6 consistent with a level playing field?
11:35 7 A. No. I disagree with that.
11:35 8 Q. So you think a closed system is consistent or
11:35 9 inconsistent with a level playing field?
11:35 10 A. Yeah. Inconsistent.
11:35 11 Q. Right. So we can agree that a closed system
11:36 12 is inconsistent with a level playing field, right?
11:36 13 A. Well, it depends on what you're talking about
11:36 14 in that closed system and around, you know, which
11:36 15 factors.
11:36 16 Q. Well, again, if you could, as a general
11:36 17 matter, is a closed system, closed system, consistent
11:36 18 or inconsistent with a level playing field?
11:36 19 A. I do -- I think it depends on the
11:36 20 circumstances.
11:36 21 Q. All right. Well, we'll get into some details.
11:36 22 A. Okay. Thank you.
11:36 23 MR. MUELLER: Let's put up DDX-1.4, if we
11:36 24 could.
11:36 25 BY MR. MUELLER:

11:36 1 Q. And this is a demonstrative that I used in my
11:36 2 opening statement just showing an overview of the
11:36 3 treatment process for clear aligners.
11:36 4 Do you see this, Dr. Derakhshan?
11:36 5 A. Yes. I do.
11:36 6 Q. And just to be clear on one thing right off
11:36 7 the bat, Align is not here to say that the patents in
11:36 8 this case cover any use of clear dental aligners,
11:36 9 correct?
11:36 10 A. Could you repeat that?
11:37 11 Q. Sure.
11:37 12 A. Yes.
11:37 13 Q. Align is not here to say -- to tell this jury
11:37 14 that the patents in this case cover any possible use of
11:37 15 clear dental aligners, right?
11:37 16 A. Oh, yes.
11:37 17 Q. In fact, Align's position is that these are
11:37 18 very particular patents to -- directed to particular
11:37 19 structures for aligners and scanners, right?
11:37 20 A. Well, I'm not the patent attorneys. I'll
11:37 21 leave that to them.
11:37 22 Q. Fair enough.
11:37 23 But, Dr. Derakhshan, you would agree with me,
11:37 24 Align is not saying it owns the entire field of clear
11:37 25 aligners, right?

11:37 1 A. Well, correct.
11:37 2 Q. Okay. Now, here, we have various options. We
11:37 3 have the discussion of treatment, where the doctor can
11:37 4 discuss various treatment options with a patient.
11:37 5 Do you see that?
11:37 6 A. Yes. I do.
11:37 7 Q. And that happens, right?
11:37 8 A. Yeah.
11:37 9 Q. We have the scan of the teeth. And do you see
11:37 10 there's the intraoral scanner? That's sort of a wand
11:37 11 that goes in the patient's mouth, right?
11:37 12 A. Yes.
11:37 13 Q. And that wand is used to scan the topography
11:37 14 of the teeth in the mouth?
11:38 15 A. Yes.
11:38 16 Q. And that wand is connected to a console,
11:38 17 correct?
11:38 18 A. Yes. To a screen, yeah.
11:38 19 Q. Right. So the console is part of the scanner,
11:38 20 right?
11:38 21 A. Yes.
11:38 22 Q. All right. Then we have some material which
11:38 23 is used in the aligners, and there's various types of
11:38 24 materials that can be used in these clear aligners,
11:38 25 true?

11:38 1 A. Yes.
11:38 2 Q. And those materials are formed into the
11:38 3 particular formation that is designed for that
11:38 4 particular patient, right?
11:38 5 A. Well, yeah. It goes through a manufacturing
11:38 6 process. I'm not the expert in the forming of them.
11:38 7 Q. Fair enough.
11:38 8 A. Yes.
11:38 9 Q. Now, Ms. Durie asked you a few questions about
11:38 10 Straumann and Straumann offices in various parts of the
11:38 11 world, as well as Align offices in various parts of the
11:38 12 world.
11:38 13 Do you recall those questions?
11:38 14 A. Yes.
11:38 15 Q. Now, you know that what's at issue for the
11:38 16 aligners that are accused of infringement in this case,
11:38 17 the aligners, are ClearCorrect aligners, right?
11:38 18 A. Yes.
11:38 19 Q. ClearCorrect aligners that use a material
11:39 20 called Zendura FLX, true?
11:39 21 A. Yes.
11:39 22 Q. The Zendura FLX comes from Bay Materials,
11:39 23 right?
11:39 24 A. Yes. As far as I'm aware.
11:39 25 Q. And you understand Bay Materials offers that

11:39 1 Zendura FLX to anyone in the industry, true?
11:39 2 A. Well, I don't -- I don't know the business
11:39 3 practice of Bay Materials, but yes.
11:39 4 Q. Okay. And, ma'am, did you know that every
11:39 5 single, every single ClearCorrect aligner accused of
11:39 6 infringement in this case is not made in the locations
11:39 7 you mentioned; they're made in Round Rock?
11:39 8 A. I was not aware.
11:39 9 Q. And you understand ClearCorrect has a
11:39 10 manufacturing facility at its headquarters in Round
11:39 11 Rock, and that's where the aligners that are accused of
11:39 12 infringement in this case are made?
11:39 13 A. Okay.
11:39 14 Q. And you have no reason to dispute that?
11:39 15 A. Unless you have another facility that I'll --
11:39 16 you know, the teams could focus on that.
11:39 17 Q. Ms. Durie asked you a few questions about
11:40 18 competition.
11:40 19 Do you recall that?
11:40 20 A. Yes.
11:40 21 Q. I want to go into some of the competition
11:40 22 issues. And if you could, ma'am, please turn to Tab 26
11:40 23 in your binder. This is DTX-1388.
11:40 24 A. Do you know what tab number it is?
11:40 25 Q. Tab 26.

1 A. 26.
11:40 2 Q. And take your time, and let me know when
11:40 3 you're there.
11:40 4 A. Okay. Yes.
11:40 5 Q. And do you see in the cover here, it says
11:40 6 "Invisalign," and then it says: You go beyond?
11:40 7 A. Yes.
11:40 8 Q. And below that it says "KO19," which I presume
11:40 9 stands for Kickoff 2019.
11:40 10 Do you see that, Dr. Derakhshan?
11:40 11 A. Yes.
11:40 12 Q. I'm going to ask you some questions about it.
11:40 13 MR. MUELLER: Before I do, Your Honor, I
11:40 14 offer this. This is DTX-1388.
11:40 15 MS. DURIE: No objection.
11:40 16 THE COURT: Admitted.
11:40 17 BY MR. MUELLER:
11:40 18 Q. Let's turn to Slide 8, if we could. And this
11:41 19 says: Competition is here.
11:41 20 Do you see that?
11:41 21 A. Yes.
11:41 22 Q. And various clear aligner companies are listed
11:41 23 on this slide, correct?
11:41 24 A. Yes.
11:41 25 Q. Now, and this is competition for clear

11:41 1 aligners that would compete against Invisalign, true?
11:41 2 A. Well, they compete. It's around teeth
11:41 3 straightening.
11:41 4 Q. Ma'am, these are clear aligner companies --
11:41 5 A. Yeah.
11:41 6 Q. -- that compete against Invisalign, true?
11:41 7 A. Yes.
11:41 8 Q. All right. Now, if we go to the page right
11:41 9 before this, we see this slide here. This says: Build
11:41 10 the moat around your business.
11:41 11 And the build your moat around your business
11:41 12 was a directive from Align to its sales personnel who
11:41 13 were the audience for this presentation, right?
11:41 14 A. Well, I wasn't there. So I don't know if that
11:41 15 was the directive.
11:42 16 Q. Well, you have no reason to dispute this was a
11:42 17 sales presentation or presentation to sales folks at
11:42 18 Align, right?
11:42 19 A. Yes.
11:42 20 Q. Okay. And let's look at the right-hand
11:42 21 corner. Do you see where it says: Confidential - for
11:42 22 internal use only?
11:42 23 A. Yes.
11:42 24 Q. And that was part of the original
11:42 25 presentation. You have no reason to dispute that

11:42 1 either, right?
11:42 2 A. Well, it's part of -- yes, here.
11:42 3 Q. Okay. And if we look at this picture, we see
11:42 4 a castle and a moat with the directive "build the moat
11:42 5 around your business."
11:42 6 Now, Dr. Derakhshan, you know the "moat" here
11:42 7 is referring to taking steps to keep doctors and
11:42 8 patients using Invisalign. That's the business, right?
11:42 9 A. No. I wouldn't know if that's what they're
11:42 10 referring to.
11:42 11 Q. Okay. You don't know one way or the other?
11:42 12 A. Right. Correct.
11:42 13 Q. Okay. And you see the moat. The moat is to
11:42 14 keep out other companies to keep them from having the
11:42 15 same access to doctors and their patients. You know
11:43 16 that, right?
11:43 17 A. No, not necessarily. A moat could be about
11:43 18 creating competitive advantage to making products and
11:43 19 services better so that there's a better product out
11:43 20 there for patients.
11:43 21 Q. So, Dr. Derakhshan, just so we're clear with
11:43 22 this jury, your testimony to this jury is that the
11:43 23 moat, the moat around the castle, was to promote and
11:43 24 improve competition.
11:43 25 Do I have that right?

11:43 1 A. No. I mean, that's the way I look at a moat.
11:43 2 Q. So you look at a moat as promoting
11:43 3 competition?
11:43 4 A. I look at a moat as a way that -- as a
11:43 5 business could look at, a competitive advantage, to
11:43 6 look at building products and value proposition and
11:43 7 drive unique selling points in the industry.
11:43 8 Q. Now, you understand in a level playing field
11:43 9 where everyone can compete, all the companies have the
11:43 10 same access to the doctors, right?
11:43 11 A. Yes.
11:43 12 Q. They get to compete on the merits of their
11:43 13 products, quality, and price, right?
11:43 14 A. Yes, unless somebody's infringing on your
11:43 15 patents.
11:43 16 Q. Well, Dr. Derakhshan, or unless someone builds
11:44 17 a moat, builds a moat around the marketplace to keep
11:44 18 other companies from having the same access to doctors.
11:44 19 Isn't that true, ma'am?
11:44 20 A. No. I mean, as I said, you --
11:44 21 THE COURT: Ma'am, when your lawyer asks
11:44 22 you questions, you get to talk as long as you want.
11:44 23 THE WITNESS: Oh, sorry.
11:44 24 THE COURT: When opposing counsel's
11:44 25 asking you questions, I'd like you to answer his

11:44 1 directly. Okay?

11:44 2 THE WITNESS: Okay. Thank you.

11:44 3 BY MR. MUELLER:

11:44 4 Q. Dr. Derakhshan, the moat, the moat that Align

11:44 5 was seeking to create was to prevent competition, not

11:44 6 promote competition; isn't that true?

11:44 7 A. No.

11:44 8 Q. Let's take a look at DTX-152. This is Tab 5

11:44 9 in your binder.

11:44 10 Are you there, ma'am?

11:45 11 A. Yes.

11:45 12 Q. Okay. This is an e-mail between some

11:45 13 executives at Align, Daniel Diederich and Tim Mack.

11:45 14 Do you see that?

11:45 15 A. Yes.

11:45 16 Q. And Mr. Diederich is still employed at Align

11:45 17 Technologies, correct?

11:45 18 A. Yes.

11:45 19 Q. He's the senior director of global business

11:45 20 development and strategy, right?

11:45 21 A. Yes.

11:45 22 MR. MUELLER: Your Honor, I offer this.

11:45 23 MS. DURIE: No objection.

11:45 24 THE COURT: Admitted.

11:45 25 BY MR. MUELLER:

11:45 1 Q. So let's look at the first e-mail in this
11:45 2 chain where Mr. Diederich says: As we're preparing for
11:45 3 serious competition in three to five years, an iTero
11:45 4 customer is a locked-in Invisalign customer.
11:45 5 Do you see that?
11:45 6 A. Yes.
11:45 7 Q. And he says explicitly that an iTero
11:45 8 customer -- and that's the scanner that Align sells,
11:45 9 the iTero. Right?
11:45 10 Do you see that?
11:45 11 A. Yes, I do.
11:45 12 Q. ITero is the scanner, and he was saying an
11:45 13 iTero customer, a scanner customer, is a locked-in
11:46 14 Invisalign customer, right?
11:46 15 A. Well, I see it's written there.
11:46 16 Q. And so he's saying that someone who buys this
11:46 17 iTero scanner with the console is locked in as an
11:46 18 Invisalign customer, true?
11:46 19 A. No. I mean, I don't think -- I wasn't -- I
11:46 20 didn't write the e-mail. So I don't know if that's
11:46 21 what he meant.
11:46 22 Q. Okay. And I'm not asking you to get inside
11:46 23 his head. I'm not asking you to get inside his head.
11:46 24 But do you agree -- do you agree with what the
11:46 25 senior director of global business development and

11:46 1 strategy said, that an iTero customer is a locked-in
11:46 2 Invisalign customer?
11:46 3 A. No, I don't.
11:46 4 Q. You disagree with him?
11:46 5 A. Yeah.
11:46 6 Q. Now, he went on to say that if someone buys
11:46 7 another scanner, they're not locked in to Invisalign.
11:46 8 Do you see that?
11:46 9 A. Yes.
11:46 10 Q. Do you agree with that?
11:46 11 A. No, not necessarily. I see them as
11:46 12 independent.
11:46 13 Q. Let's go to Tab 27 in your binder. This is
11:47 14 DTX-46.
11:47 15 And take your time and let me know when you're
11:47 16 there.
11:47 17 A. Yes.
11:47 18 Q. This is an e-mail chain among various
11:47 19 executives including the chief executive officer, Joe
11:47 20 Hogan, right?
11:47 21 A. Yes.
11:47 22 MR. MUELLER: Your Honor, I offer it.
11:47 23 MS. DURIE: No objection.
11:47 24 THE COURT: Admitted.
11:47 25 BY MR. MUELLER:

11:47 1 Q. Let's take a look at the second e-mail in the
11:47 2 first page. And do you see the subject line says
11:47 3 "3Shape"?
11:47 4 A. Yes.
11:47 5 Q. And you know 3Shape is a company that made its
11:47 6 own intraoral scanner, right?
11:47 7 A. Yes.
11:47 8 Q. And at one time Align allowed for
11:47 9 interoperability of Invisalign with 3Shape, right?
11:47 10 A. Yes.
11:47 11 Q. It doesn't any longer, though, correct?
11:48 12 A. Because there was some infringements.
11:48 13 THE COURT: Ma'am?
11:48 14 A. Yes. Correct.
11:48 15 THE COURT: Answer his questions
11:48 16 directly, please.
11:48 17 A. Correct.
11:48 18 MR. MUELLER: And I move to strike the
11:48 19 last portion of that answer, Your Honor.
11:48 20 THE COURT: Granted.
11:48 21 BY MR. MUELLER:
11:48 22 Q. Dr. Derakhshan, Dr. Derakhshan, if you look at
11:48 23 the second sentence here from -- this is Joe Hogan, the
11:48 24 CEO: From my position, I feel we are empowering or
11:48 25 subsidizing other companies to compete against us in

11:48 1 clear aligners.
11:48 2 Do you see that, Dr. Derakhshan?
11:48 3 A. I do.
11:48 4 Q. He said: They say -- they can say to docs --
11:48 5 doctors, right, Dr. Derakhshan?
11:48 6 A. Yes.
11:48 7 Q. They can say to docs, you can do Invisalign or
11:48 8 other clear aligner companies. We have such a huge
11:48 9 share of the market, why do we want to give them this
11:48 10 option?
11:48 11 Do you see that, Dr. Derakhshan?
11:48 12 A. Yes.
11:48 13 Q. Now, he's saying right there in black and
11:48 14 white, the CEO, "huge share of the market."
11:49 15 Do you see that?
11:49 16 A. Yes.
11:49 17 Q. Now, he didn't say -- he didn't say "huge
11:49 18 share of the market, which also includes wire braces
11:49 19 and anything else that might straighten teeth," right?
11:49 20 A. Right.
11:49 21 Q. He said: Huge share of the market. And he
11:49 22 was referring, as best you can tell, to clear aligners,
11:49 23 right?
11:49 24 A. No.
11:49 25 Q. All right. Now, let's go to Tab 28 in your

11:49 1 binder.
11:49 2 And take your time and let me know when you're
11:49 3 there.
11:49 4 A. Yes, I'm there.
11:49 5 Q. And this is DTX-141. This is another e-mail
11:49 6 chain among executives at Align, including
11:49 7 Mr. Diederich we talked about earlier, right?
11:49 8 A. Yes.
11:49 9 Q. And Mr. Diederich again was the senior
11:49 10 director -- let me make sure I get his title correct --
11:50 11 global business development?
11:50 12 A. Yes.
11:50 13 Q. And strategy, right?
11:50 14 A. Yes.
11:50 15 MR. MUELLER: Your Honor, I offer the
11:50 16 e-mail.
11:50 17 MS. DURIE: No objection.
11:50 18 THE COURT: Admitted.
11:50 19 BY MR. MUELLER:
11:50 20 Q. The title is, if we go to the first page, IOS
11:50 21 Market Update.
11:50 22 Do you see that?
11:50 23 A. Yes.
11:50 24 Q. And I want to go to the third e-mail in this
11:50 25 chain.

11:50 1 MR. MUELLER: If we go down a little bit
11:50 2 here.
11:50 3 There we go.
4 BY MR. MUELLER:
11:50 5 Q. So here, we have Mr. Diederich corresponding
11:50 6 with Daniel Stubbs. And do you know who he is?
11:50 7 A. Yes. He was a former employee.
11:50 8 Q. And what was his position, Mr. Stubbs?
11:50 9 A. He was a -- in global business development.
11:50 10 Q. Global business development.
11:50 11 So we have two senior executives at Align
11:50 12 corresponding, right?
11:50 13 A. Yes.
11:50 14 Q. And one -- Mr. Diederich said to Mr. Stubbs:
11:50 15 If you want to do Invisalign, you're forced to buy
11:51 16 iTero and live with it.
11:51 17 Do you see that?
11:51 18 A. I see it's written there.
11:51 19 Q. And right above that Mr. Stubbs said: I think
11:51 20 that pretty much sums it up, Dan.
11:51 21 Do you see that?
11:51 22 A. Yes.
11:51 23 Q. Now, in fact, over time, Align did adopt a
11:51 24 policy. It told doctors that if the doctors wanted
11:51 25 access to Invisalign, they had to purchase an iTero

11:51 1 scanner, correct?
11:51 2 A. No. Not necessarily.
11:51 3 Q. Not necessarily is your testimony?
11:51 4 A. Yes.
11:51 5 Q. Okay. So your testimony is that the iTero and
11:51 6 Invisalign were not being used for lock-in purposes.
11:51 7 Do I have that right?
11:51 8 A. Yes.
11:51 9 Q. And your testimony is that Align was using an
11:51 10 open system as opposed to a closed system.
11:51 11 Do I have that right?
11:51 12 A. Yes.
11:51 13 Q. Let's go to Tab 29 in your binder, which is
11:51 14 DTX-185.
11:51 15 And please let me know when you're there,
11:52 16 ma'am.
11:52 17 A. Yes.
11:52 18 Q. This is -- DTX-185 is another e-mail among
11:52 19 executives, including the CEO, Joe Hogan, right, ma'am?
11:52 20 A. Yes.
11:52 21 MR. MUELLER: I offer it, Your Honor.
11:52 22 MS. DURIE: No objection.
11:52 23 THE COURT: Admitted.
11:52 24 BY MR. MUELLER:
11:52 25 Q. And do you see this is between a gentleman

11:52 1 named Raj Pudipeddi and Mr. Hogan?
11:52 2 A. Yes.
11:52 3 Q. Who is Mr. Pudipeddi?
11:52 4 A. He was a former employee at Align.
11:52 5 Q. So let's look at the second -- and what was
11:52 6 his position when he was there?
11:52 7 A. He was the chief marketing officer in business
11:52 8 development.
11:52 9 Q. Let's look at what he said on April 10th,
11:52 10 2023. This is three years ago. And let's look at the
11:52 11 second paragraph. And let's have in mind that I just
11:52 12 asked you whether Align used an open or a closed
11:52 13 system. And you said "open," right, ma'am?
11:52 14 A. Yes.
11:52 15 Q. Now, here's Mr. Pudipeddi talking to
11:52 16 Mr. Hogan, says: Joe, I think I framed the two
11:52 17 sentences together in a confusing way. My miss. My
11:53 18 point is that iTero and Invisalign are in a closed
11:53 19 ecosystem and hence tightly coupled. If we delink them
11:53 20 by offering interoperability on other scanners, it
11:53 21 dilutes our unique position in my view.
11:53 22 Do you see that?
11:53 23 A. Yes.
11:53 24 Q. And so Mr. Pudipeddi, in an e-mail to the
11:53 25 chief executive officer of Align, was saying, with all

11:53 1 due respect, Dr. Derakhshan, the exact opposite of what
11:53 2 you said 30 seconds ago; isn't that true?
11:53 3 A. Not necessarily.
11:53 4 Q. Okay. Well, let's see what Mr. Hogan said in
11:53 5 response.
11:53 6 MR. MUELLER: If we could scroll to the
11:53 7 top of the page.
8 BY MR. MUELLER:
11:53 9 Q. Mr. Hogan in response said: I have slowly
11:53 10 come to this conclusion too, Raj. Thanks. We both
11:53 11 cannot be wrong.
11:53 12 Right?
11:53 13 A. Yes.
11:53 14 Q. Mr. Hogan did not say, Mr. Pudipeddi, I think
11:53 15 you have it wrong. We have an open system.
11:53 16 Mr. Hogan said to Mr. Pudipeddi, I have come
11:53 17 to the same conclusion, right?
11:54 18 A. As it's stated here, yes.
11:54 19 Q. So as stated here in an e-mail between the
11:54 20 very tip-top of the company, the chief executive
11:54 21 officer, we have one executive telling another: My
11:54 22 point is iTero and Invisalign are in a closed system.
11:54 23 Do I have that right so far?
11:54 24 A. Yes.
11:54 25 Q. And when you have the chief executive officer

11:54 1 saying he came to the exact same conclusion, do I have
11:54 2 that right too?
11:54 3 A. Yes.
11:54 4 Q. And not only that, Mr. Pudipeddi said: If we
11:54 5 delink, delink iTero and Invisalign by offering
11:54 6 interoperability on other scanners, it dilutes our
11:54 7 unique position.
11:54 8 Do you see that?
11:54 9 A. I do.
11:54 10 Q. And Mr. Hogan didn't disagree with that
11:54 11 either, did he?
11:54 12 A. Well, I don't know what Mr. Hogan was
11:54 13 disagreeing to.
11:54 14 Q. Well, he was not disagreeing with anything, as
11:55 15 far as I can tell. He said: I have slowly come to
11:55 16 this conclusion too, Raj.
11:55 17 Right?
11:55 18 A. That's what it says there.
11:55 19 Q. Now, Dr. Derakhshan, you talked at the
11:55 20 beginning of your testimony about the benefits of clear
11:55 21 aligners, which are, of course, real, right?
11:55 22 A. Yes.
11:55 23 Q. And it's important to patients to have good
11:55 24 options at good prices, true?
11:55 25 A. Yes.

11:55 1 Q. And Align, which makes a good quality product,
11:55 2 could just go out and offer it to the marketplace on an
11:55 3 open basis, right?
11:55 4 A. Sorry. Could you repeat that?
11:55 5 Q. Sure. Align -- let me make a more specific
11:55 6 question.
11:55 7 There's nothing stopping Align from going to
11:55 8 the marketplace and telling doctors: We'll let you use
11:55 9 whatever scanner you want with Invisalign. There's
11:55 10 nothing stopping them from doing that?
11:55 11 A. Well, there's the quality and the quality of
11:55 12 the care that we need or the quality that we need.
11:55 13 Q. Dr. Derakhshan, there's nothing stopping Align
11:55 14 from offering its products on an open system basis,
11:56 15 true?
11:56 16 A. Yes.
11:56 17 Q. But here, we have Mr. Pudipeddi saying, iTero
11:56 18 and Invisalign are in a closed system. And we have the
11:56 19 chief executive officer saying, I have come to the same
11:56 20 conclusion, true?
11:56 21 A. It's what's written there, but I don't have
11:56 22 the interpretation of what that system is.
11:56 23 Q. But you would agree with me that on this page,
11:56 24 here, we have the CEO -- I'm going to read the words so
11:56 25 we make sure we get it exact: I have slowly come to

11:56 1 this conclusion too, Raj.
11:56 2 He said that, the chief executive officer?
11:56 3 A. Yes. That's what he wrote.
11:56 4 Q. All right. Let's go to Tab 6 in your binder,
11:56 5 which is DTX-1059.
11:56 6 Are you there, ma'am?
11:56 7 A. Yes.
11:56 8 Q. This is titled Align's Strategy - November
11:56 9 2019, Global Business Strategy Team.
11:57 10 Do you see that?
11:57 11 A. Yes.
11:57 12 MR. MUELLER: Your Honor, I offer it.
11:57 13 MS. DURIE: No objection.
11:57 14 THE COURT: Admitted.
11:57 15 BY MR. MUELLER:
11:57 16 Q. Let's go to the third page which begins
11:57 17 "Strategies."
11:57 18 So right below that, it says: What.
11:57 19 Invisalign & iTero.
11:57 20 Do you see that?
11:57 21 A. Yes.
11:57 22 Q. So we have Invisalign, the dental aligners,
11:57 23 and iTero, the scanner, right?
11:57 24 A. Yes.
11:57 25 Q. First bullet point says to "continue to push

11:57 1 for international growth." Right?
11:57 2 A. Yes.
11:57 3 Q. And the second one says what? Why don't you
11:57 4 read the second titled bullet point to us.
11:57 5 A. Lock in DSOs.
11:57 6 Q. "Lock in DSOs" in bold, right?
11:57 7 A. Yes.
11:57 8 Q. So in this strategy presentation from 2019,
11:57 9 Align itself described its strategy of locking in DSOs.
11:58 10 Do you see that?
11:58 11 A. Yes.
11:58 12 Q. And DSO is what?
11:58 13 A. Dental service organization.
11:58 14 Q. And this continues. If we keep reading:
11:58 15 Continue with a dedicated team focused on DSOs locking
11:58 16 in the biggest players with exclusive deals.
11:58 17 Do you see that?
11:58 18 A. Yes.
11:58 19 Q. And this is another example of Align engaging
11:58 20 in a lock-in strategy. Can we agree on that?
11:58 21 A. No. Not necessarily.
11:58 22 Q. Now, you say you disagree. The top of this
11:58 23 says "strategy," right?
11:58 24 A. Uh-huh. Yes.
11:58 25 Q. And the second bullet point says "lock in,"

11:58 1 right?
11:58 2 A. Yes.
11:58 3 Q. This is a lock-in strategy, isn't it?
11:58 4 A. Well, the DSO has a choice.
11:58 5 Q. The Align goal was a lock-in strategy, true or
11:58 6 false?
11:58 7 A. I don't -- I'm not privy of what the Align
11:58 8 goal was.
11:58 9 Q. Let's go to DTX-1483. This is Tab 1 in your
11:59 10 binder.
11:59 11 A. Yep.
11:59 12 Q. Okay. And this is titled Global Advantage
11:59 13 Reboot Project Update & Review, dated May 22nd, 2016.
11:59 14 Do you see that, Dr. Derakhshan?
11:59 15 A. I might -- sorry. Which tab number was that?
11:59 16 Q. Yeah. Take your time. It's Tab 7.
11:59 17 A. 7. Sorry.
11:59 18 Q. Tab 7. And let me know when you're there.
11:59 19 A. Yes.
11:59 20 Q. Do you see the title page at the very
11:59 21 beginning?
11:59 22 A. Yes.
11:59 23 Q. It's titled Global Advantage Reboot Project
11:59 24 Updates & Review, the Invisalign logo, May 22nd, 2016,
11:59 25 right?

11:59 1 A. Yes.
11:59 2 MR. MUELLER: Your Honor, I offer it.
11:59 3 MS. DURIE: No objection.
11:59 4 THE COURT: Admitted.
11:59 5 BY MR. MUELLER:
12:00 6 Q. Let's go to Page 4. And this says project
7 advantages (sic). And it's discussing advantages for
12:00 8 an Advantage program.
12:00 9 And the Advantage program is a program that
12:00 10 Align has used with doctors, right?
12:00 11 A. Yes.
12:00 12 Q. And it offers doctors certain benefits in
12:00 13 return for the doctors having to agree to certain
12:00 14 terms, true?
12:00 15 A. Certain milestones, yes.
12:00 16 Q. And, Dr. Derakhshan, you would agree with me
12:00 17 that this Advantage program was designed to create a
12:00 18 barrier against competition?
12:00 19 A. No.
12:00 20 Q. Well, let's take a look. Right below here, a
12:00 21 few bullet points down, it says: Creates a "barrier to
12:00 22 switch" - protects from competition.
12:00 23 Do you see that?
12:00 24 A. Yes.
12:00 25 Q. Now, you just told us it's not to protect

12:00 1 against competition or create a barrier, but the
12:00 2 document itself, would you agree with me, says, quote:
12:01 3 Creates "barriers to switch" - protects from
12:01 4 competition?
12:01 5 A. Yes. I didn't write the document. Yes.
12:01 6 Q. Well, Dr. Derakhshan, you're not aware of
12:01 7 anyone retracting this document and saying it was
12:01 8 incorrect, true?
12:01 9 A. Yes.
12:01 10 Q. This is a genuine Align document, right?
12:01 11 A. Yes.
12:01 12 Q. And what was said in this genuine and
12:01 13 authentic Align document was, quote: Create "barriers
12:01 14 to switch" - protects from competition.
12:01 15 That's what it says, right, ma'am?
12:01 16 A. Yes.
12:01 17 Q. Let's go to Tab 8 in your binder. This is
12:01 18 DTX-2821. And take your time.
12:01 19 And just let me know when you're there, if you
12:01 20 could.
12:01 21 A. Yes.
12:01 22 Q. This is titled ALT Update - iTero NA.
12:01 23 Do you see that?
12:01 24 A. Yes.
12:01 25 Q. With the iTero logo in the top right?

12:01 1 A. Yes.
12:01 2 Q. And iTero is the scanner that Align sells?
12:01 3 A. Yes.
12:01 4 MR. MUELLER: Your Honor, I offer it.
12:01 5 MS. DURIE: No objection.
12:01 6 THE COURT: Admitted.
12:02 7 BY MR. MUELLER:
12:02 8 Q. Let's go to Slide 17.
12:02 9 And remember I asked you the questions about
12:02 10 the moat a little while ago and the picture of the
12:02 11 castle.
12:02 12 Do you recall those questions?
12:02 13 A. Yes.
12:02 14 Q. All right. And I think you told me the moat
12:02 15 was for promoting competition?
12:02 16 A. Yes.
12:02 17 Q. All right. Let's go to Slide 17 at Page 18 of
12:02 18 the document. It's titled Executive Summary.
12:02 19 And the idea here is the executive summary of
12:02 20 the strategies for Align's use of this iTero scanner,
12:02 21 right?
12:02 22 A. Yes.
12:02 23 Q. Do you see where it says: Establish Align
12:03 24 digital workflow -- this is the last bullet point below
12:03 25 goals -- as a competitive moat around accounts.

12:03 1 Do you see that?
12:03 2 A. Yes.
12:03 3 Q. That meant accounts that Align had with
12:03 4 doctors, right?
12:03 5 A. I don't know what it meant.
12:03 6 Q. Okay. Well, you understand that Align does
12:03 7 have accounts with doctors?
12:03 8 A. Yes.
12:03 9 Q. Align has accounts with dental service
12:03 10 organizations?
12:03 11 A. Yes.
12:03 12 Q. And here this says: Establish the Align
12:03 13 digital workflow.
12:03 14 That's referring to the workflow for the
12:03 15 scanner and its console, right?
12:03 16 A. Not just the scanner and its console.
12:03 17 Q. Scanner's part of it. You would agree on
12:03 18 that?
12:03 19 A. Could be. Yes.
12:03 20 Q. Okay. So establish the Align digital workflow
12:03 21 including that scanner and its console as a competitive
12:03 22 moat around accounts.
12:03 23 That's what the document said?
12:04 24 A. Yes. That's what's written there.
12:04 25 Q. And your testimony to this jury is that the

12:04 1 moat being referred to was to promote competition as
12:04 2 opposed to prevent competition.
12:04 3 Do I have that right?
12:04 4 A. Well, yes. I didn't say it in those, yes,
12:04 5 words, but it's not about keeping people out.
12:04 6 Q. Right. But again, just so we're clear with
12:04 7 the jury, your testimony to this jury is that a moat is
12:04 8 actually to promote competition instead of to prevent
12:04 9 Align from competition?
12:04 10 A. No. I mean, competition is good, as I said.
12:04 11 It's about how do you bring better value and
12:04 12 proposition. Align isn't afraid of competition.
12:04 13 Q. Dr. Derakhshan, if you could. The moat --
12:04 14 A. Yes.
12:04 15 Q. The moat. Your testimony is the moat was to
12:04 16 promote competition rather than, rather than keep the
12:04 17 competition out.
12:04 18 Do I have that right?
12:04 19 A. As I said, it's -- I said competition is a
12:04 20 good thing. It brings advantages to the industry.
12:04 21 MR. MUELLER: Your Honor, I'd ask if
12:05 22 you'd give the witness direction to please stay with my
12:05 23 question.
12:05 24 THE COURT: If I think I need to, I will.
12:05 25 MR. MUELLER: Okay.

12:05 1 BY MR. MUELLER:
12:05 2 Q. Dr. Derakhshan, I'll ask you one more time.
12:05 3 The moat. Does the moat promote competition
12:05 4 or not?
12:05 5 A. It could do -- it could. It could also --
12:05 6 Q. Now, you know historically moats were used to
7 keep people out?
8 A. Yes.
12:05 9 Q. And here, Align chose -- Align chose itself to
12:05 10 use the imagery of the moat, right?
12:05 11 A. Well, it's just written, the word.
12:05 12 Q. Right. The word is written here, and there's
12:05 13 pictures of moats in other Align documents, right?
12:05 14 A. The one that we saw.
12:05 15 Q. And again, historically moats keep people out?
12:05 16 A. Yes.
12:05 17 Q. Now, you yourself have done what has -- you
12:05 18 are aware of Align doing what's known as competitive
12:06 19 intelligence, right?
12:06 20 A. Yes.
12:06 21 Q. And competitive intelligence involves looking
12:06 22 at other company's products, perhaps even doing
12:06 23 experiments on them, and perhaps doing what's called
12:06 24 reverse engineering, right?
12:06 25 A. Not reverse. I don't agree with all that.

12:06 1 Q. Okay. Well, you know there's nothing wrong
12:06 2 with looking at your competitors and looking at how
12:06 3 your product compares to them, right?
12:06 4 A. For things that are available, commercially
12:06 5 available, sure.
12:06 6 Q. And in fact, Align routinely studies the
12:06 7 features of products offered by its competitors, right?
12:06 8 A. Yes.
12:06 9 Q. And there's nothing wrong with that?
12:06 10 A. No. It's a -- it's a good thing. I mean, you
12:06 11 want to know what's happening in the market so you can
12:06 12 get -- make -- be better and better.
12:06 13 Q. So it's a good thing to know what's out there
12:06 14 and to try to strike your own path and develop
12:06 15 something better. That's a good thing?
12:06 16 A. Sure.
12:06 17 Q. All right. Now, you understand that the
12:06 18 Zendura FLX material made by Bay Materials was
12:07 19 announced to the market in 2018, right?
12:07 20 A. Yes.
12:07 21 Q. And after learning about it, Align obtained
12:07 22 some samples of Zendura FLX to test, true?
12:07 23 A. Yes.
12:07 24 Q. And Align learned that Zendura has hard outer
12:07 25 layers and a soft inner layer, right?

12:07 1 A. Well, I'm not the material expert, so I can't
12:07 2 comment.
12:07 3 Q. Well, let me show you another executive
12:07 4 presentation. If you could turn to Tab 15 in your
12:07 5 binder, please.
12:07 6 A. Yes.
12:07 7 Q. This is an EMC presentation, right?
12:07 8 A. Yes.
12:07 9 Q. Executive management committee, and you're on
12:07 10 that?
12:07 11 A. Yes, but not at this time.
12:07 12 Q. Fair enough.
12:07 13 But you recognize this type of document?
12:07 14 A. Yes.
12:08 15 MR. MUELLER: Okay. This is DTX-2867,
12:08 16 Your Honor. I offer it.
12:08 17 MS. DURIE: No objection.
12:08 18 THE COURT: Admitted.
12:08 19 BY MR. MUELLER:
12:08 20 Q. Let's go to Slide 5. And do you see at the
12:08 21 bottom there's a -- four bullets up, it says: Regional
12:08 22 SWAT teams assigned to additional aligners and passes
12:08 23 led by Mitra.
12:08 24 And that's you, Dr. Derakhshan?
12:08 25 A. Yes.

12:08 1 Q. Okay. Let's turn to Page 2. The second
12:08 2 bullet -- well, first of all, this is describing where
12:08 3 are we with two months into the year.
12:08 4 Do you see that?
12:08 5 A. Yes.
12:08 6 Q. And there's a summary of some of the
12:08 7 developments that had happened two months into the
12:08 8 year?
12:08 9 A. Yes.
12:08 10 Q. And I'd like you to look at the external
12:08 11 developments portion of the summary.
12:09 12 Do you see that?
12:09 13 A. Yes.
12:09 14 Q. It says: Competition continues to ramp up.
12:09 15 A. Yes.
12:09 16 Q. And right below that it says: Bay Materials,
12:09 17 Bay Materials' hard-soft-hard, Bay Materials'
12:09 18 hard-soft-hard structure big threat to superiority of
12:09 19 SmartTrack.
12:09 20 Do you see that?
12:09 21 A. Yes.
12:09 22 Q. Let's go to Tab 10 in your binder, which is
12:09 23 DTX-0216. And DTX-216 or 0216 is an e-mail between
12:09 24 Mr. Hogan, chief executive officer, and Srini Kaza.
12:10 25 And he's the vice president of research and

12:10 1 development, right?
12:10 2 A. Yes.
12:10 3 MR. MUELLER: Your Honor, I offer it.
12:10 4 MS. DURIE: No objection.
12:10 5 THE COURT: You said no objection?
12:10 6 MS. DURIE: No objection.
12:10 7 THE COURT: Admitted.
12:10 8 BY MR. MUELLER:
12:10 9 Q. All right. So let's go to --
12:10 10 MR. MUELLER: Scroll down to the e-mail
12:10 11 from Lance Johnson dated November 30th.
12:10 12 Page 3. There we go.
13 BY MR. MUELLER:
12:10 14 Q. This is titled Update. And do you see where
12:10 15 it says: Just want to keep you posted on Ormco's Spark
12:10 16 aligner.
12:10 17 Do you see that?
12:10 18 A. Yes.
12:10 19 Q. Ormco and the Spark product is a competitor to
12:10 20 Invisalign, right?
12:10 21 A. It's a competitor to teeth straightening.
12:11 22 Q. And it's a -- it's a clear dental aligner, the
12:11 23 Spark product?
12:11 24 A. It's a, yes, a clear aligner.
12:11 25 Q. And it goes on to say: We have aligners

12:11 1 inhouse and are conducting extensive testing, but based
12:11 2 on initial findings, it is a triple layer material,
12:11 3 probably a Zendura product.
12:11 4 Do you see that?
12:11 5 A. Yes.
12:11 6 MR. MUELLER: Let's go to Page 2.
7 BY MR. MUELLER:
12:11 8 Q. Mr. Kaza, in an e-mail on November 30th, 2018,
12:11 9 at 6:53, Page 2.
12:11 10 MR. MUELLER: There we go.
11 BY MR. MUELLER:
12:11 12 Q. He says, the second sentence -- talking about
12:11 13 materials. And he says in the second sentence: They
12:11 14 flipped the construction. Soft layer in the middle and
12:11 15 copolyester outside.
12:11 16 Do you see that?
12:11 17 A. Yes.
12:11 18 Q. So let's see what Mr. Hogan said in response.
12:12 19 He says to the vice president of research and
12:12 20 development: I think at this point there's not a lot
12:12 21 of mystery on what properties a material needs to be
12:12 22 like SmartTrack.
12:12 23 Now, he says: The issue is if they have
12:12 24 copied us, if they have copied us and have a
12:12 25 competitive material that's close to SmartTrack, we'll

12:12 1 have a lot of explaining to do in the market.
12:12 2 Do you see that?
12:12 3 A. Yes.
12:12 4 Q. By the way, Dr. Derakhshan, you yourself have
12:12 5 no evidence -- you yourself have no evidence that Bay
12:12 6 Materials copied SmartTrack. You yourself have no such
12:12 7 evidence, right?
12:12 8 A. Well, based on I'm being here on the trial, we
12:12 9 have evidence from the company.
12:12 10 Q. But you're the first witness.
12:12 11 A. Yes.
12:12 12 Q. And you yourself have no knowledge of that.
12:12 13 You don't know Mr. Lahlouh, do you?
12:12 14 A. Oh, no.
12:12 15 Q. Okay. Now, look at the last sentence.
12:12 16 Mr. Hogan said: Do you think we have any IP at all we
12:13 17 could hit them with?
12:13 18 Do you see that?
12:13 19 A. Yes.
12:13 20 Q. All right. Let's go to Tab 12 of your binder.
12:13 21 This is DTX-200.
12:13 22 A. Yes.
12:13 23 Q. And this is another e-mail chain that involves
12:13 24 the CEO and the vice president of research and
12:13 25 development, Mr. Hogan and Mr. Kaza, right?

12:13 1 A. Yes.
12:13 2 MR. MUELLER: Your Honor, I offer it.
12:13 3 MS. DURIE: No objection.
12:13 4 THE COURT: Admitted.
12:13 5 BY MR. MUELLER:
12:13 6 Q. Let's go to the bottom of Page 4. There's a
12:13 7 January 17th, 2019 e-mail. And let's look at the
12:13 8 second sentence. This is Mr. Hogan writing to
12:13 9 Mr. Kaza: How are you feeling about the Spark
12:13 10 material?
12:13 11 And that's that Ormco Spark aligner, right?
12:13 12 A. Yeah. It says a Spark material. We don't
12:13 13 know what material.
12:13 14 Q. And if you go up to see Mr. Kaza's response,
12:14 15 he said: We're calibrating the machine with SmartTrack
12:14 16 so we can compare with our historical material.
12:14 17 Okay?
12:14 18 MR. MUELLER: Now let's go up to the top
12:14 19 one, right above that. It says "Mr. Hogan." And let's
12:14 20 go to the beginning of this e-mail, if we could, a
12:14 21 little bit up -- higher in the page.
22 BY MR. MUELLER:
12:14 23 Q. He said, second sentence: I am really worried
12:14 24 about marginalizing ST.
12:14 25 Do you see that? I am really worried about

12:14 1 marginalizing ST.
12:14 2 A. Yes.
12:14 3 Q. And he went on to say: I thought you had
12:14 4 concerns about possible delamination.
12:14 5 And he's referring to the Spark material,
12:14 6 right?
12:14 7 A. I don't know in that -- right there if he is.
12:14 8 Q. Okay. Fair enough.
12:14 9 But then he went on to say, if we go a little
12:14 10 bit lower: I'm just looking or -- and that may be a
12:15 11 typo -- I'm just looking or any area of leverage for ST
12:15 12 versus this material.
12:15 13 Do you see that?
12:15 14 A. Yes.
12:15 15 Q. And Mr. Kaza responded, if we go up to the
12:15 16 top, the e-mail right below that: I agree. I am
12:15 17 worried about the material as well.
12:15 18 Do you see that?
12:15 19 A. Yes.
12:15 20 Q. And if you look a few sentences down here, he
12:15 21 says: I hope we will find -- this is the third
12:15 22 sentence down: I hope we will find -- right there --
12:15 23 good points of differentiation.
12:15 24 So Mr. Kaza was saying: I hope we find good
12:15 25 points of differentiation, but my concern is that this

12:15 1 has clearly been on people's minds for a few years now,
12:15 2 and unless we can stop with IP, they will keep coming.
12:15 3 Do you see that?
12:15 4 A. Yes.
12:15 5 Q. Okay. And IP refers to intellectual property,
12:16 6 right?
12:16 7 A. Yes.
12:16 8 Q. And patents are a form of intellectual
12:16 9 property, true?
12:16 10 A. True.
12:16 11 Q. Let's go to Tab 13 in your binder, if we
12:16 12 could. Here's another e-mail among the CEO and the
12:16 13 vice president of product development, among others.
12:16 14 This is from March of 2019. DTX-203.
12:16 15 Do you see that, Dr. Derakhshan?
12:16 16 A. Yes.
12:16 17 MR. MUELLER: I offer it, Your Honor.
12:16 18 MS. DURIE: No objection.
12:16 19 THE COURT: Admitted.
12:16 20 BY MR. MUELLER:
12:16 21 Q. So the first line in Mr. Hogan's e-mail, CEO:
12:16 22 I'm sure you've picked up that a new SmartTrack-like
12:16 23 plastic from Bay Materials is being sampled by our
12:16 24 competition.
12:16 25 Do you see that?

12:16 1 A. Yes.
12:16 2 Q. The next paragraph, he says: Marketing has to
12:17 3 get ready with a story on this for our docs. I need
12:17 4 you and your team to address this with urgency.
12:17 5 Do you see that?
12:17 6 A. Yes.
12:17 7 Q. SmartTrack has been key in customers' minds
12:17 8 with the performance of Invisalign versus the
12:17 9 competition. This could be a huge issue for us if
12:17 10 we're not ready.
12:17 11 Do you see that?
12:17 12 A. Yes, it's written.
12:17 13 Q. Let's go to DTX -- I'm sorry. Tab 16 in your
12:17 14 binder.
12:17 15 And take your time, and let me know when
12:17 16 you're there.
12:17 17 A. Yes.
12:17 18 Q. This is another e-mail exchange between
12:17 19 Mr. Hogan and Mr. Kaza from February of 2019, right?
12:17 20 A. Yes.
12:17 21 MR. MUELLER: Your Honor, I offer it.
12:17 22 MS. DURIE: No objection.
12:17 23 THE COURT: Admitted.
12:17 24 BY MR. MUELLER:
12:17 25 Q. And if we go down to the second page,

12:17 1 Mr. Hogan says -- the title here is Spark.
12:18 2 Do you see that?
12:18 3 A. Yes.
12:18 4 Q. And he says to Mr. Kaza: Thanks, Srini. Do
12:18 5 they have IP around this new product? I am wondering
12:18 6 if we should think of buying them if they have the IP
12:18 7 and you think this material could be an issue versus
12:18 8 SmartTrack.
12:18 9 Do you see?
12:18 10 A. Yes.
12:18 11 Q. And this is raising the idea of buying Bay
12:18 12 Materials, right?
12:18 13 A. I don't know that.
12:18 14 Q. Okay. Let's go to Tab 17, DTX-205. And
12:18 15 actually, I'm sorry. Before we leave that one, go back
12:18 16 to that for just one moment.
12:18 17 I just want to get the date clear here. This
12:18 18 is in January of 2019, right, Dr. Derakhshan?
12:19 19 A. Yes.
12:19 20 Q. Okay. Let's go to Tab 17, if we could. This
12:19 21 is DTX-205. This is an e-mail thread between Mr. Hogan
12:19 22 and Mr. Pudipeddi, right?
12:19 23 A. Yes.
12:19 24 Q. And this is later in 2019 than what we just
12:19 25 looked at, true?

12:19 1 A. Yes, October.
12:19 2 MR. MUELLER: I offer it.
12:19 3 MS. DURIE: No objection.
12:19 4 THE COURT: Admitted.
12:19 5 MR. MUELLER: So let's put it up here.
12:19 6 BY MR. MUELLER:
12:19 7 Q. If we look at the subject line, this is
12:19 8 referring to a Straumann earnings call. And you
12:19 9 understand that Straumann, in that time period,
12:19 10 purchased Bay Materials, right?
12:19 11 A. Yes.
12:19 12 Q. So Mr. Hogan is corresponding with
12:19 13 Mr. Pudipeddi. And let's look at the second sentence
12:19 14 from his e-mail: I understand the material pretty
12:19 15 well, but we will need to develop a clinical story that
12:20 16 makes sense as to why ST -- that's SmartTrack,
12:20 17 right? -- is better.
12:20 18 Do you see that, Dr. Derakhshan?
12:20 19 A. Well, it says "ST."
12:20 20 Q. And ST stands for SmartTrack?
12:20 21 A. Well, I can't be 100 percent sure.
12:20 22 Q. All right. It goes on to say: On buying
12:20 23 them, I do not blame you. I just wanted to get this
12:20 24 asset off the market.
12:20 25 Do you see that?

12:20 1 A. Yes.
12:20 2 Q. And Mr. Hogan at that point is referring to
12:20 3 "the asset" and "just wanting to get it off the market"
12:20 4 as Bay Materials, right?
12:20 5 A. I wouldn't know. I didn't write the e-mail.
12:20 6 Q. Let's go to Page 3. And the beginning of the
12:20 7 e-mail from Mr. Hogan to Mr. Pudipeddi dated Tuesday,
12:20 8 October 29th, 2019.
12:20 9 MR. MUELLER: And let's move up a little
12:20 10 bit more.
11 BY MR. MUELLER:
12:21 12 Q. Do you see he's saying: Hey, Raj. Read this
12:21 13 over.
12:21 14 Do you see that?
12:21 15 A. Yes.
12:21 16 Q. And he's referring to a press release in which
12:21 17 Straumann noted the acquisition of Bay Materials,
18 right?
12:21 19 Do you see that?
12:21 20 A. Yes.
12:21 21 Q. And Mr. Hogan in October of 2019 says: They
12:21 22 are the best competitor we have.
12:21 23 Right?
12:21 24 A. Yes.
12:21 25 Q. And he went on to say: We missed the Bay

12:21 1 Materials situation.
12:21 2 Right?
12:21 3 A. Yes.
12:21 4 Q. And he went on to say: I am kicking myself
12:21 5 for not being more prescriptive with the team on this.
12:21 6 He said that, right?
12:21 7 A. Yes.
12:21 8 Q. And he said: There's a lot that I like about
12:21 9 this company.
12:21 10 Right?
12:21 11 A. Yes.
12:21 12 Q. Now, after all of these e-mails, after the
12:22 13 analysis of Zendura FLX, at that point, at that point,
12:22 14 Align went back to the Patent Office, true?
12:22 15 A. I'm not the patent expert on the team.
12:22 16 Q. Well, just to make clear, there's a number of
12:22 17 patents at issue in this case that Align has sued
12:22 18 ClearCorrect and Straumann on, right?
12:22 19 A. Yes.
12:22 20 Q. And you're not here to provide any testimony
12:22 21 to the jury on those patents, correct?
12:22 22 A. Correct.
12:22 23 Q. Not on patents that relate to materials.
12:22 24 You're not here to provide any testimony on those?
12:22 25 A. Well, I am based on what I'm talking about

12:22 1 here.
12:22 2 Q. Well, if you're ready, I'm ready to ask you
12:22 3 some questions --
12:22 4 A. Yes. I'm not -- talking about the specifics
12:22 5 of the patents, that's for the patent team and the
12:22 6 patent experts.
12:22 7 Q. You're not here to talk about the specifics of
12:22 8 the materials patents, correct?
12:22 9 A. Correct.
12:22 10 Q. You're not here to talk about the specifics of
12:22 11 the scanner patent, right?
12:22 12 A. Correct.
12:22 13 Q. Now, you do -- you would agree, though, I
12:22 14 assume, that the Align patents are patents -- let's
12:23 15 focus on the materials ones -- that place materials in
12:23 16 the right place to create aligners that are useful for
12:23 17 doctors and patients, true?
12:23 18 A. Not necessarily.
12:23 19 Q. The Align -- the Align technology is directed
12:23 20 to putting aligners in the wrong place?
12:23 21 A. Well, at the -- it's about the combination of
12:23 22 the materials.
12:23 23 Q. Right.
12:23 24 A. It doesn't have the specifics.
12:23 25 Q. And your position, Dr. Derakhshan, is that

12:23 1 Align makes high-quality dental aligners, true?
12:23 2 A. Yes.
12:23 3 Q. With the layers in the right place?
12:23 4 A. Well, again, I can't comment. I'm not the
12:23 5 material expert in how that layering works.
12:23 6 Q. From your perspective as an orthodontist, are
12:23 7 the aligners in Invisalign in the right place?
12:23 8 A. They're -- it's -- based on the final aligner,
12:23 9 it's the best aligner that we see.
12:23 10 Q. So let me ask you, if we could, to go to
12:24 11 Tab 24 in your binder, which is PTX-1091.
12:24 12 A. Yes.
12:24 13 Q. And this is an Align presentation, an
12:24 14 Invisalign logo at the top titled A Material
12:24 15 Difference.
12:24 16 Do you see that?
12:24 17 A. Yes.
12:24 18 MR. MUELLER: Your Honor, I offer it.
12:24 19 MS. DURIE: No objection.
12:24 20 THE COURT: Admitted.
12:24 21 BY MR. MUELLER:
12:24 22 Q. Let's go to Page 1. Do you see it says
12:24 23 "Aligners are everywhere," first page?
12:24 24 A. Yes.
12:24 25 Q. And it says: Almost all orthodontic and

12:24 1 dental companies have aligners these days.
12:24 2 Right?
12:24 3 A. Yes.
12:24 4 Q. But there are critical differences.
12:24 5 Do you see that?
12:24 6 A. Yes.
12:24 7 Q. Let's go to Page 4. Here, this says at the
12:24 8 top: Invisalign aligners are unique.
12:24 9 Do you see that?
12:24 10 A. Yes.
12:24 11 Q. Okay. Now, you were here for the opening
12:24 12 statements, right?
12:25 13 A. Yes.
12:25 14 Q. And were you here when Ms. Durie said that
12:25 15 Straumann and I think implicitly ClearCorrect took a
12:25 16 shortcut with the development of their aligners?
12:25 17 A. Yes.
12:25 18 Q. And did you take that as a suggestion that
12:25 19 there was some effort to copy the SmartTrack
12:25 20 technology?
12:25 21 A. Yes.
12:25 22 Q. Okay. Here, we have at the top: Invisalign
12:25 23 aligners are unique. Right?
12:25 24 A. Yes.
12:25 25 Q. And then below that, it says: Many of the

12:25 1 more common aligners use the same core material -
12:25 2 Zendura FLX.
12:25 3 Right?
12:25 4 A. Yes.
12:25 5 Q. So this is acknowledging that some of the
12:25 6 competitors to Invisalign use Zendura FLX, right?
12:25 7 A. Yes.
12:25 8 Q. And then it goes on to say: So what's the
12:25 9 difference between our proprietary SmartTrack material
12:25 10 and the commonly used Zendura FLX material?
12:25 11 Right?
12:25 12 A. Yes.
12:25 13 Q. And this goes on to explain Align's view on
12:26 14 the differences between Zendura FLX on the one hand and
12:26 15 Invisalign and SmartTrack on the other, right?
12:26 16 A. It'll point out some differences, but there's
12:26 17 a lot of similarities.
12:26 18 Q. Dr. Derakhshan, this doesn't describe Zendura
12:26 19 as a knockoff or a copy or something that took a
12:26 20 shortcut. This says Invisalign's unique and Zendura
12:26 21 FLX is different, true?
12:26 22 A. Not necessarily.
12:26 23 Q. Well, let me just show you one example. If
12:26 24 you go to Page 13. This says: These areas -- meaning
12:26 25 these areas in the mouth -- require a highly elastic

12:26 1 material.
12:26 2 Do you see?
12:26 3 A. Yes.
12:27 4 Q. And it says right below that: That's why
12:27 5 SmartTrack material has its elastic polymers on the
12:27 6 outside and, therefore, does not crack when stretched
12:27 7 and compressed.
12:27 8 Do you see that?
12:27 9 A. Yes.
12:27 10 Q. And that's referring to the soft outer layers
12:27 11 in SmartTrack, true?
12:27 12 A. Yes.
12:27 13 Q. The construction is soft-hard-soft, true?
12:27 14 A. For which?
12:27 15 Q. For SmartTrack.
12:27 16 A. Yes.
12:27 17 Q. And on the right-hand side -- that's the
12:27 18 SmartTrack on the left, and we can highlight
12:27 19 SmartTrack. And it says right below that: Highly
12:27 20 elastic polyurethane elastomer on the outside.
12:27 21 Right?
12:27 22 A. Yes.
12:27 23 Q. On the right-hand side, the contrast is with
12:27 24 Zendura FLX. Zendura FLX. And look what it says in
25 that bullet point below.

12:28 1 Can you read it to the jury, please,
12:28 2 Dr. Derakhshan?
12:28 3 A. Constructing an aligner with the material
12:28 4 placed in the wrong location results in more permanent
12:28 5 deformation and cracks.
12:28 6 Q. And so this document, Dr. Derakhshan, was
12:28 7 distinguishing the two technologies and criticizing
12:28 8 Zendura FLX, right?
12:28 9 A. I would say it's pointing out a difference.
12:28 10 Q. Right. Pointing out a difference and saying
12:28 11 Invisalign and SmartTrack are a different approach than
12:28 12 Zendura FLX on the right, correct?
12:28 13 A. Yes.
12:28 14 MR. MUELLER: Thank you, Dr. Derakhshan.
12:28 15 Your Honor, I pass the witness.
12:28 16 REDIRECT EXAMINATION
12:28 17 BY MS. DURIE:
12:28 18 Q. Thank you. Just a couple of questions.
12:28 19 MS. DURIE: If we could have back up
12:28 20 PTX-1091 and go back to the page that we were just
12:28 21 looking at.
12:28 22 I think it's 13. PTX-1091, 13.
23 BY MS. DURIE:
12:29 24 Q. Constructing an aligner with the materials
12:29 25 placed in the wrong location in the wrong order, a

12:29 1 different order, results in a more permanent
12:29 2 deformation and cracks.
12:29 3 Is that consistent with your understanding of
12:29 4 the challenges that Straumann/ClearCorrect had been
12:29 5 facing in the market with their aligner?
12:29 6 A. One of them.
12:29 7 Q. Now, you were asked some questions about an
12:29 8 open and a closed system. Can this iTero scanner be
12:29 9 used to order competing aligners?
12:29 10 A. Yes.
12:29 11 Q. Is it in fact, to your knowledge, used to
12:29 12 order competing aligners?
12:29 13 A. Yes.
12:29 14 Q. Is that an open or a closed system?
12:29 15 A. That's an open system.
12:29 16 MS. DURIE: Thank you. No further
12:29 17 questions.
12:29 18 RECROSS-EXAMINATION
12:29 19 BY MR. MUELLER:
12:29 20 Q. Just a final question.
12:29 21 So in all the materials where the executives
12:30 22 at Align were referring to the closed system of iTero
12:30 23 and Invisalign, your testimony to this jury is they
12:30 24 were all wrong?
12:30 25 A. Well, my testimony is I don't know what they

12:30 1 meant by their discussion of their system. As a
12:30 2 doctor, that iTero, I can do what I want with that
12:30 3 iTero. I can order aligners, other braces and
12:30 4 anything. So that's an open system.
12:30 5 Q. Let's put it this way. We looked at e-mail
12:30 6 after e-mail in which the top executives at Align used
12:30 7 the term "closed system," true?
12:30 8 A. Yes. That's what was said.
12:30 9 MR. MUELLER: Nothing further. Thank you
12:30 10 very much, Dr. Derakhshan.
12:30 11 THE WITNESS: Thank you.
12:30 12 THE COURT: See, don't ever trust them
12:30 13 when they say final question.
12:30 14 (Laughter.)
12:30 15 THE COURT: That's what I've learned.
12:30 16 Ladies and gentlemen of the jury, please
12:30 17 remember my instructions. If you would be back -- it's
12:30 18 12:30. If you'd be back by 1:45, we will resume.
12:31 19 THE BAILIFF: All rise.
12:31 20 (Jury exited the courtroom.)
12:31 21 THE COURT: Thank you. You may be
12:31 22 seated.
12:31 23 MS. DURIE: May this witness be excused?
12:31 24 THE COURT: Is she -- not -- to leave?
12:31 25 MS. DURIE: Yes, Your Honor.

12:31 1 THE COURT: That's -- no.
12:31 2 MR. MUELLER: Yeah. That's fine,
12:31 3 Your Honor. We've reached an agreement that fact
12:31 4 witnesses will be long gone.
12:31 5 THE COURT: All good. Sure, of course.
12:31 6 Thank you for asking.
12:31 7 Thank you for being here.
12:31 8 Did I give you all a deadline by when to
12:31 9 get us your draft jury charge?
12:31 10 MR. MUELLER: I'm not sure, Your Honor,
12:32 11 to be honest with you.
12:32 12 THE COURT: Okay.
12:32 13 MS. DURIE: We're all looking at each
12:32 14 other.
12:32 15 THE COURT: I'd like to have -- make --
12:32 16 occasionally when I forget to give you a deadline, we
12:32 17 don't get it in time. In other words, I don't really
12:32 18 need it until we have the jury charge conference, but
12:32 19 I've had cases where I say I'm going to have the
12:32 20 conference and I haven't gotten it yet.
12:32 21 So I would anticipate in this case next
12:32 22 Tuesday or Wednesday we would have the charge
12:32 23 conference. I think everyone at the table has been to
12:32 24 one of those. So I won't go through how I do it. If
12:32 25 you haven't, then ask someone else who's here because

12:32 1 I've done it a lot.
12:32 2 But if you would get those to us by
12:32 3 Monday, that would be great. And of course, even after
12:32 4 you get them to us, if you continue to negotiate and
12:32 5 clean things up, that's certainly fine with me.
12:32 6 MR. MUELLER: Understood. Thank you,
12:32 7 Your Honor.
12:32 8 THE COURT: Any issues before we break?
12:32 9 MS. DURIE: I think there is one
12:32 10 evidentiary issue that we were wondering whether we
12:32 11 should take up now or at the conclusion of the lunch
12:32 12 break.
12:32 13 THE COURT: Which witness does it
12:33 14 concern?
12:33 15 MR. HUNG: Reitman, Maureen Reitman.
12:33 16 MS. DURIE: Maureen Reitman.
12:33 17 THE COURT: I don't have Reitman anytime
12:33 18 soon. When will that person --
12:33 19 MR. HUNG: She might be our last witness
12:33 20 today.
12:33 21 THE COURT: We'll take it up after the
12:33 22 break.
12:33 23 MS. DURIE: Okay. Thank you.
12:33 24 MR. MUELLER: I just have one quick
12:33 25 thing, Your Honor.

1 THE COURT: Sure.

12:33 2 MR. MUELLER: There will be an expert

12:33 3 witness soon, and I just wanted to confirm what I

12:33 4 remember as the rules on cross-examination for prior

12:33 5 engagements. And my memory, I just want to confirm,

12:33 6 was that we're permitted to cross-examine on the number

12:33 7 of prior engagements by the party, not law firms but by

12:33 8 party, without getting into any details of the other

12:33 9 cases.

12:33 10 Do I have that right, Your Honor?

12:33 11 THE COURT: Yes.

12:33 12 MR. MUELLER: Okay. Thank you,

12:33 13 Your Honor.

12:33 14 THE COURT: Anything else?

12:33 15 MS. DURIE: Your Honor, Mr. Durst was

12:33 16 asking whether we need to formally invoke the rule.

12:33 17 THE COURT: You could have done that

12:34 18 before the first witness. But since you didn't, it

12:34 19 hasn't been invoked. If you all would like to go ahead

12:34 20 and do that now.

12:34 21 MR. MUELLER: I'm fine with that,

12:34 22 Your Honor. I don't think we have any fact witnesses

12:34 23 in the courtroom. So we're fine with it now too.

12:34 24 THE COURT: Okay. That's fine.

12:34 25 Anything else?

12:34 1 MS. DURIE: No, Your Honor.
12:34 2 MR. MUELLER: No, Your Honor.
12:37 3 (Recess taken.)
01:47 4 THE BAILIFF: All rise.
01:47 5 THE COURT: Please remain standing for
01:47 6 the jury.
01:47 7 (Jury entered the courtroom.)
01:47 8 THE COURT: Thank you. You may be
01:47 9 seated.
01:47 10 MR. MUELLER: Your Honor, I just had one
01:47 11 housekeeping thing. For one exhibit I read the tab
01:47 12 number but not the DTX number. It's DTX-217.
01:48 13 THE COURT: Okay. Thank you.
01:48 14 MR. MUELLER: Thank you, Your Honor.
01:48 15 THE COURT: Mr. Nash?
01:48 16 MR. NASH: Your Honor.
01:48 17 THE COURT: Pleasure to have you here.
01:48 18 MR. NASH: Pleasure to be here,
01:48 19 Your Honor. Plaintiff calls Mr. Avi Kopelman.
01:48 20 (The witness was sworn.)
01:48 21 DIRECT EXAMINATION
01:48 22 BY MR. NASH:
01:48 23 Q. Good afternoon, Mr. Kopelman.
01:48 24 A. Good afternoon.
01:48 25 Q. Could you please introduce yourself to the

01:48 1 jury?
01:48 2 A. My name is Avi Kopelman.
01:48 3 Q. Do you have a family?
01:48 4 A. I have a wife, three kids, and two grandkids.
01:49 5 Q. And are you employed?
01:49 6 A. I am currently a retiree from Align Technology
01:49 7 for over a year now -- a year now.
01:49 8 Q. I'm sorry. What did you say?
01:49 9 A. For over a year since I retired.
01:49 10 Q. Congratulations on your retirement.
01:49 11 A. Thank you.
01:49 12 Q. And how long were you at Align?
01:49 13 A. I was at Align since 2011. It's about
01:49 14 15 years.
01:49 15 Q. And what was your role when you were at Align?
01:49 16 A. While I was at Align, I was a VP and chief
01:49 17 scientist for the company.
01:49 18 Q. And how did you come to join Align?
01:49 19 A. So I joined Align, again in 2011, after Align
01:49 20 acquired the company that they cofounded with a friend.
01:49 21 Q. And why are you here today, Mr. Kopelman?
01:49 22 A. I'm here to talk about my work at Cadent, the
01:49 23 company I founded, my work at Align Technology, my work
01:50 24 on the iTero scanner, and my eraser patent.
01:50 25 Q. Well, let's start with the company that you

01:50 1 founded, Cadent.
01:50 2 When did you start it?
01:50 3 A. I founded Cadent with my friend at 1994.
01:50 4 Q. And what work experience did you have before
01:50 5 starting Cadent?
01:50 6 A. Before starting Cadent, I had close to ten
01:50 7 years of work experience mostly in a computer-aided
01:50 8 solutions, mostly back then for robotic and automotive
01:50 9 applications.
01:50 10 Q. And what was your education?
01:50 11 A. I have bachelor of science from Fairleigh
01:50 12 Dickinson University in New Jersey.
01:50 13 Q. Now, was any of your prior work experience in
01:50 14 the dental industry?
01:50 15 A. Prior to founding Cadent, I did not have any
01:51 16 experience in the dentistry-related work.
01:51 17 Q. Well, so how did you find yourself working in
01:51 18 the dental industry and starting a company there?
01:51 19 A. So about that time, I had a crown fitted in
01:51 20 my -- one of my molars, and I watched how the dentist
01:51 21 worked. And I realized that it's very, very -- what we
01:51 22 call an analog, very old-fashioned, and I realized that
01:51 23 it could be improved with digital solutions.
01:51 24 Q. What do you mean by "an analog" process in
01:51 25 that context?

01:51 1 A. So a typical -- let's talk about a crown case.
01:51 2 Typically, the doctor has to cooperate with the lab.
01:51 3 The doctor will do the preparation of the site for the
01:51 4 crown, then will take a tray with the goop material
01:51 5 inside and create an impression. That's an analog
01:52 6 impression.
01:52 7 The doctor will send it over to a lab that
01:52 8 will pour plaster, and that's a second generation of an
01:52 9 analog information. So that's the analog way.
01:52 10 Q. And did you think you could improve that
01:52 11 process?
01:52 12 A. I believed that it could be digitized,
01:52 13 computerized, and be much more efficient. And that's
01:52 14 from my previous experience in doing the same things in
01:52 15 other applications.
01:52 16 Q. Why did you call the company Cadent?
01:52 17 A. So Cadent stands for computer-aided dentistry.
01:52 18 That's what we had in mind back then.
01:52 19 Q. Now, did you invest any of your own money into
01:52 20 this venture?
01:52 21 A. So indeed, yes. I practically invested all
01:52 22 the money I had, close to $100,000, and so did my
01:53 23 cofounder. So we both invested our own money in the
01:53 24 company.
01:53 25 Q. And how did your wife feel about that?

01:53 1 A. So my wife on one hand encouraged me, but we
01:53 2 took a huge risk. That's all the money we had, and we
01:53 3 took a big risk in doing that. Follow our dream.
01:53 4 Q. Did you start with an intraoral scanner that
01:53 5 we've heard about?
01:53 6 A. So when we founded the company, we had in mind
01:53 7 the idea of developing an intraoral scanner. But 1994
01:53 8 was the early days of computers, very early days of
01:53 9 computers. And the technology was not as developed as
01:53 10 today.
01:53 11 So while we had this idea of an intraoral
01:53 12 scanner in our mind, we decided to start introducing
01:53 13 digital solution to dentistry with a desktop scanner.
01:53 14 So our first product was a desktop scanner.
01:53 15 Q. And can you explain to the jury, what is a
01:53 16 desktop scanner?
01:53 17 A. So if we talked about converting from analog
01:54 18 to digital, with the desktop scanner, one can take the
01:54 19 impression and scan the goop material, so your first
01:54 20 generation with an analog impression, and then you scan
01:54 21 it and it becomes digital.
01:54 22 Q. How did you build these desktop scanners?
01:54 23 A. So we built those scanners in our hands.
01:54 24 Between me, my partner, and another guy, we built the
01:54 25 scanner in our hands, practically.

01:54 1 Q. About how many do you think you built?
01:54 2 A. We ended up building 30 such scanners.
01:54 3 Q. And how big are these?
01:54 4 A. They're pretty big, about
01:54 5 3-feet-by-3-feet-by-2-feet. Pretty bulky.
01:54 6 Q. When did Cadent start working on an intraoral
01:54 7 scanner?
01:54 8 A. So we started developing the intraoral scanner
01:54 9 in 1997.
01:54 10 Q. Now, do you have any pictures from the old
01:54 11 days?
01:54 12 A. Yes, sir.
01:54 13 Q. Okay.
01:55 14 MR. NASH: Why don't we bring up PDX-22.
01:55 15 BY MR. NASH:
01:55 16 Q. And I'm showing you PDX-22. Can you just tell
01:55 17 us, what does this show, Mr. Kopelman?
01:55 18 A. So this is me, much younger. And I'm in a
01:55 19 optic lab here, on an optic bench. That's the bench
01:55 20 that used to develop optic equipment. And I'm holding
01:55 21 in my hand a miniature camera that we have developed,
01:55 22 and I'm pointing on a plaster model of teeth.
01:55 23 Q. Do you remember around the time frame you took
01:55 24 this photo?
01:55 25 A. It's around the time we started developing the

01:55 1 scanner.
01:55 2 Q. Okay. Was it challenging to develop an
01:55 3 intraoral scanner?
01:55 4 A. It was absolutely very challenging to develop
01:55 5 it, especially back then. And I can explain why.
01:55 6 Q. Please.
01:55 7 A. So the challenge with scanning in general,
01:56 8 scanning of teeth, is the fact that the enamel layer of
01:56 9 the teeth is translucent. And when you scan an object,
01:56 10 you project light and you look at what the sensor
01:56 11 receives back from the object. And if you project on
01:56 12 translucent object, you get the reflection from the
01:56 13 inside. It's like you looking at the mirror, you see
01:56 14 your image coming from the bottom of the mirror.
01:56 15 But the nature of the work we tried to do was
01:56 16 to scan the most outer surface, and this is why
01:56 17 scanning teeth is so challenging.
01:56 18 Q. That was different from what you had done with
01:56 19 the desktop scanners?
01:56 20 A. Yes. The desktop scanner did not have to cope
01:56 21 with translucent teeth because the goop material is not
01:56 22 translucent. And the desktop scanner is much bigger.
01:57 23 It didn't have the challenge of making it very small
01:57 24 and having to put it in a person mouth.
01:57 25 Q. Now, when did your first iTero intraoral

01:57 1 scanner go on sale?
01:57 2 A. We started selling the iTero scanner at 2006.
01:57 3 Q. Now, I think we have one more photo from the
01:57 4 old days. What does this one show?
01:57 5 A. So this is me again, and next to me Mr. Tim
01:57 6 Mack who worked for us. And the phrase on the wall
01:57 7 says: Everything that can turn digital will turn
01:57 8 digital. And that's something that we very believed
01:57 9 in, and this is what we did in dentistry. And we
01:57 10 wanted everybody to see this on the wall.
01:57 11 Q. So was it hard to sell the iTero to doctors?
01:57 12 A. It was. I would say very challenging because
01:57 13 the doctors are trained not to try new things. Doctors
01:58 14 are trained always to follow what they learned at the
01:58 15 university, what their peers are talking about.
01:58 16 And here, we came with a very innovative idea
01:58 17 that changes the most critical procedure in their
01:58 18 office. We told them, don't do this. Even if
01:58 19 everybody's doing it for so many years, try this new
01:58 20 thing. So it was challenging to convince. Yes.
01:58 21 Q. Well, thank you, Mr. Kopelman.
01:58 22 I'd like to ask you some questions about your
01:58 23 patent.
01:58 24 A. Okay.
01:58 25 Q. First, how many patents did you have while you

01:58 1 were at Cadent?
01:58 2 A. 20 to 25 patents.
01:58 3 Q. Well, you have a binder in front of you, or I
01:58 4 guess to your side. And if you could tab -- flip to
01:58 5 the tab JTX-1.
01:58 6 Let me know when you're there.
01:58 7 A. Yeah.
01:58 8 Q. Now, do you recognize that document?
01:59 9 A. Yes. This is my '936 patent, which we call
01:59 10 here the eraser patent.
01:59 11 Q. And what's your relationship to the '936
01:59 12 patent?
01:59 13 A. I'm the only inventor of this patent. It's my
01:59 14 invention.
01:59 15 MR. NASH: Your Honor, at this time, I
01:59 16 offer JTX-1.
01:59 17 MR. ZUBLER: No objection.
01:59 18 THE COURT: Admitted.
01:59 19 BY MR. NASH:
01:59 20 Q. Now, was this one of the patents from your
01:59 21 time when you were at Cadent?
01:59 22 A. This is correct.
01:59 23 MR. NASH: Okay. Let's display the first
01:59 24 page of JTX-1.
25 BY MR. NASH:

01:59 1 Q. Do you know who owns this patent?
01:59 2 A. The patent is owned by Align Technology, where
01:59 3 I worked.
01:59 4 Q. I see. And do you recall, when did you first
01:59 5 apply for this patent?
01:59 6 A. Yeah. I applied for this patent early 2010.
01:59 7 Q. And can you explain to the jury --
01:59 8 MR. NASH: And we can take that down,
01:59 9 Mr. Smith.
10 BY MR. NASH:
01:59 11 Q. At a high level, Mr. Kopelman, explain to the
02:00 12 jury, what was your idea?
02:00 13 A. Okay. So I think that it's a very interesting
02:00 14 idea. When the doctor takes analog impression, the
02:00 15 doctor can look at the impression and sometimes see
02:00 16 that there is a problem, a bubble or a drop of blood
02:00 17 that impacted the quality of the impression, but
02:00 18 there's nothing the doctor can do.
02:00 19 The idea here is to allow the doctor to scan
02:00 20 with the scanner, look at the outcome, and if the
02:00 21 doctor see that there is a problem, like a drop of
02:00 22 blood or in prep -- a crown prep that is not adequate,
02:00 23 then the doctor can now erase the area with the
02:00 24 problem, go back to the patient, and fix the situation
02:01 25 in the patient mouth.

02:01 1 So if there is a drop of blood, the doctor can
02:01 2 dry it. If there is a -- if the crown is too high,
02:01 3 they can reduce the size of the preparation for the
02:01 4 crown and now go back and scan that area only.
02:01 5 And the nice thing here is that the doctor do
02:01 6 not have to rescan everything again because if the
02:01 7 doctor have to rescan everything again, beside the
02:01 8 additional work, new problems may arise. For example,
02:01 9 now there could be bleeding in another area. So it
02:01 10 could be an endless process.
02:01 11 So the doctor keeps whatever is good and only
02:01 12 incrementally fix the problem that the doctor have
02:01 13 seen.
02:01 14 So this is a very nice idea that you can only
02:01 15 do with digital.
02:02 16 Q. Thank you, Mr. Kopelman.
02:02 17 MR. NASH: If we could pull up JTX-1 at
02:02 18 Claim 1.
19 BY MR. NASH:
02:02 20 Q. Mr. Kopelman, does Claim 1 of the '936 patent
02:02 21 capture your idea?
02:02 22 A. That's correct.
02:02 23 Q. Okay. And did your idea make it into the
02:02 24 iTero scanner?
02:02 25 A. This is correct. We made it into the iTero

02:02 1 scanner.
02:02 2 Q. Do you recall around when that happened?
02:02 3 A. At -- early month of 2011, about a year after
02:02 4 I filed the patent.
02:02 5 Q. Okay. Thank you.
02:02 6 I'd like to talk next about iTero and the
02:02 7 eraser feature. Mr. Kopelman, do you recognize this
02:02 8 device, PDX-893?
02:02 9 A. Yes, sir. This is my iTero scanner.
02:02 10 Q. Can you see it okay from here?
02:02 11 A. I can see enough. Thank you.
02:02 12 MR. NASH: With the Court's permission,
02:02 13 can I move the iTero up forward a little bit?
02:02 14 THE COURT: Sure. If opposing counsel
02:02 15 needs to move around.
02:02 16 MR. ZUBLER: No objection. It's fine.
02:03 17 THE COURT: Do you need to relocate
02:03 18 yourself?
02:03 19 MR. ZUBLER: I think we're fine where we
02:03 20 are. Thank you.
02:03 21 MR. NASH: Well, I will say, Mr. Zubler,
02:03 22 I was going to ask the witness a few questions about
02:03 23 it. So if you -- they're not very complex questions.
02:03 24 I promise.
02:03 25 MR. ZUBLER: I'll join you on -- next to

02:03 1 you, if you don't mind.
02:03 2 MR. NASH: Well --
02:03 3 MR. ZUBLER: Is that permissible?
02:03 4 MR. NASH: Please, come on over,
02:03 5 Mr. Zubler.
6 BY MR. NASH:
02:03 7 Q. I was just going to ask you a few questions
02:03 8 about it, Mr. Kopelman.
02:03 9 A. Please go ahead.
02:03 10 Q. For the jury, what is this device?
02:03 11 A. I would say that this is the wand, which is
02:03 12 part of the iTero scanner, and that's the part that
02:03 13 used to put in the patient mouth.
02:03 14 Q. Okay. And then I see what looks like a
02:03 15 display. Can you explain to the jury how the display
02:03 16 is used in the iTero?
02:03 17 A. So the display will typically show to the
02:03 18 doctor how the scan of the teeth is happening, and
02:04 19 another part of it is a viewfinder, just like a camera
02:04 20 viewfinder, that helps the doctor aim properly.
02:04 21 Q. Thank you, Mr. Kopelman. I'll put the
02:04 22 handheld scanner away.
02:04 23 Now, did you lead the development of the iTero
02:04 24 scanner, Mr. Kopelman?
02:04 25 A. Yes, sir. I did.

02:04 1 Q. And does it include the eraser feature that
02:04 2 you described earlier?
02:04 3 A. That's correct, sir.
02:04 4 Q. And do you recall what type of iTero this is?
02:04 5 A. As much as I can see, this is iTero Element
02:04 6 5D.
02:04 7 Q. I see.
02:04 8 And do you recall when the iTero Element was
02:04 9 first released?
02:04 10 A. So this version was first released in 2015.
02:04 11 Q. Does it include continuous scanning?
02:04 12 A. That's correct, sir.
02:04 13 Q. Now, Mr. Kopelman, would a video help you show
02:04 14 the jury how the eraser feature works?
02:04 15 A. I believe so. Yes.
02:05 16 Q. And I believe you've reviewed a video PTX-1455
02:05 17 prior to today.
02:05 18 A. That's correct.
02:05 19 Q. Okay.
02:05 20 MR. NASH: And with the Court's
02:05 21 permission, we'd like to show that video and ask
02:05 22 Mr. Kopelman a few questions.
02:05 23 THE COURT: Sure.
02:05 24 BY MR. NASH:
02:05 25 Q. So I was just going to ask, Mr. Kopelman, if

02:05 1 you recognize the video.
02:05 2 A. Yes, sir.
02:05 3 Q. And what does it show?
02:05 4 A. So we show -- we see here the iTero Element
02:05 5 with the -- starting the display.
02:05 6 Q. Okay. Well, we can play the video in clips,
02:05 7 Mr. Kopelman, and you can tell the jury what we're
02:05 8 seeing, if that would be okay.
02:05 9 A. That's okay.
10 Q. Okay.
02:05 11 MR. NASH: And, Mr. Smith, let's go to
02:05 12 13 seconds in and just pause there.
13 BY MR. NASH:
02:05 14 Q. Now, before we start the clip, Mr. Kopelman,
02:05 15 can you tell the jury, what do we see here?
02:05 16 A. Okay. So we see here a part of a patient
02:06 17 arch. In the middle, we see preparation for a crown.
02:06 18 And we see this color map that iTero generates for the
02:06 19 doctor. And those colors indicate the distance between
02:06 20 each point on the outer surface of teeth to the
02:06 21 opposing teeth.
02:06 22 So if it is red, there is an actual contact.
02:06 23 And if it is in different colors, the color indicate
02:06 24 the distance between that point to the opposing arch.
02:06 25 If you can zoom out, back now. Can you please

02:06 1 mark the crown prep tooth? Perfect.
02:06 2 So this is the crown prep. And the doctor --
02:06 3 and this is a crown case. And the doctor will look at
02:06 4 this and say, okay. I see that there is about one and
02:06 5 a half millimeter between the outer surface of this
02:07 6 crown preparation to the opposing side. And the doctor
02:07 7 in this case wanted to have at least 2 millimeter of
02:07 8 space.
02:07 9 Now, if it was an analog impression, of course
02:07 10 nothing could take place. But here, the doctor can
02:07 11 say, okay. I want another half a millimeter of height.
02:07 12 So if you can play video.
02:07 13 Q. Yeah.
02:07 14 MR. NASH: Let's play 13 seconds to
02:07 15 38 seconds.
16 BY MR. NASH:
02:07 17 Q. And, Mr. Kopelman, feel free to describe what
02:07 18 we're seeing as it plays.
02:07 19 A. Okay. So what we see here, the doctor is
02:07 20 changing the orientation. It looks at the model from
02:07 21 the side and select the eraser tool and will mark the
02:07 22 area to be erased.
02:07 23 So the white tip here is the area that has to
02:07 24 be replaced. The system will now erase this area which
02:07 25 is now marked in red, and this is the marking tool of

02:08 1 the dentist. And now the dentist will go back to the
02:08 2 patient, take a tool and shave some more tooth material
02:08 3 from the patient mouth, about half a millimeter of
02:08 4 tooth material, in order to generate more space for the
02:08 5 crown the doctor wants to prescribe. And after doing
02:08 6 that, will scan the patient again.
02:08 7 If you can keep playing the video.
02:08 8 Q. Yes.
02:08 9 MR. NASH: Mr. Smith, why don't we play
02:08 10 from 38 seconds to 50 seconds.
11 BY MR. NASH:
02:08 12 Q. And again, Mr. Kopelman, feel free to keep
02:08 13 explaining.
02:08 14 A. So now the doctor scans the patient only in
02:08 15 the area that was changed. And now we see the final
02:08 16 model that has all the information from the initial
02:08 17 scan and the most outer surface of the crown prep from
02:09 18 the new scan after the doctor have shaved some tooth
02:09 19 material from the patient.
02:09 20 So this is a better model because the chances
02:09 21 of success with this updated model -- and success means
02:09 22 good fit of the crown for the rest of the life of this
02:09 23 patient -- will be much higher using this tool.
02:09 24 Q. Thank you, Mr. Kopelman.
02:09 25 MR. NASH: I think we can take down the

02:09 1 video.
2 BY MR. NASH:
02:09 3 Q. Now let's talk about Align. Can iTero be used
02:09 4 to make Invisalign aligners?
02:09 5 A. The answer is yes. Yes.
02:09 6 Q. And how did you go about getting the iTero
02:09 7 available to make aligners at Invisalign?
02:09 8 A. So when we start -- when we started to talk
02:09 9 with Invisalign about -- and that's before the
02:09 10 companies merged, when we started to talk to Invisalign
02:09 11 about being able to scan for Invisalign, it was well
02:10 12 understood by the two sides, us and Align, that you
02:10 13 have to qualify the scanner as being able to scan for
02:10 14 Invisalign.
02:10 15 So we developed a testing -- a very
02:10 16 comprehensive testing plan that included experiments,
02:10 17 controlled experiments on real patients. So among
02:10 18 other things, we did 100 patients with 10 doctors, and
02:10 19 we compared the outcome of those scans to the everyday
02:10 20 outcome of Invisalign using the goop material.
02:10 21 Q. Now, did that require a lot of resources to do
02:10 22 that qualifying?
02:10 23 A. I believe that it required a lot of resources
02:10 24 on both sides.
02:10 25 Q. Why was it important to do that qualification

02:10 1 process?
02:10 2 A. So Invisalign is a medical system. And if the
02:11 3 quality of the initial information is not good, you may
02:11 4 end up implementing a wrong treatment. You may even
02:11 5 end up treating a patient for two years before you
02:11 6 realize that the upper arch will not fit the lower arch
02:11 7 or other similar situations.
02:11 8 So the quality of the scan is dramatically
02:11 9 important for the whole treatment and the final outcome
02:11 10 of that treatment.
02:11 11 Q. Now, you mentioned that Align merged with
02:11 12 Cadent in 2011. Did any other companies reach out to
02:11 13 Cadent about a potential merger?
02:11 14 A. So back then the other company that had
02:11 15 interest in buying Cadent was Straumann.
02:11 16 Q. Why did you decide to merge Cadent with Align?
02:11 17 A. Two reasons. Reason No. 1 was monetary.
02:12 18 Align offered more money, and we were committed to our
02:12 19 investors. So money was important. But I also
02:12 20 preferred to work with the Align people because that I
02:12 21 felt more chemistry and more friendly with those
02:12 22 people.
02:12 23 Q. Was there any similarities in the visions of
02:12 24 the two companies?
02:12 25 A. So the two companies were very innovative each

02:12 1 in its own territory. Invisalign invented the idea of
02:12 2 implementing orthodontic treatment with clear aligners,
02:12 3 and we were the inventors of the first intraoral
02:12 4 scanner. So culturally we were very similar, and the
02:12 5 two products complement each other very well.
02:12 6 Q. Now, when Align acquired Cadent, did you
02:12 7 intend for iTero to become only used with Invisalign?
02:13 8 A. On the contrary. ITero was always an open
02:13 9 system. And by open system, it means that if a doctor
02:13 10 buys iTero, the doctor can scan any patient for any
02:13 11 purpose and use the scan --
02:13 12 THE COURT: Sir?
02:13 13 MR. ZUBLER: Could we approach for side
02:13 14 bars, Your Honor?
02:13 15 THE COURT: Of course.
02:13 16 (Bench conference.)
02:13 17 MR. ZUBLER: Your Honor, we're now
02:13 18 venturing into some topics on which he was never
02:13 19 disclosed as a witness. We're venturing in from what
02:13 20 he was designated on, which is the inventor of the '936
02:13 21 patent and about the development of the iTero scanner,
02:13 22 into the antitrust issues on which he was never
02:13 23 designated, either in initial disclosures or 30(b)(6),
02:13 24 and on which Align designated different people to
02:14 25 discuss that issue.

02:14 1 THE COURT: Well, I'm not sure what you
02:14 2 mean by "designated" if he's just a fact witness saying
02:14 3 facts.
02:14 4 MR. ZUBLER: Well, in terms of his
02:14 5 initial disclosures, sir, the initial disclosures, the
02:14 6 only topics that he was identified as was as the
02:14 7 inventor of the '936 and as --
02:14 8 THE COURT: But he's a fact witness. I
02:14 9 mean, here's the deal. If he -- he's a fact witness.
02:14 10 If you -- I don't ever remember identifying a fact
02:14 11 witness for what they're going to testify about in
02:14 12 limine. If Mr. Nash asks something that is a fact
02:14 13 question, I'm going to let him answer.
02:14 14 If it -- if it swerves -- and Mr. Nash is
02:14 15 too good a lawyer to let this happen, but if it were to
02:14 16 swerve into something that required an opinion, then
02:14 17 under Rule 26, I would have expected them to notify you
02:14 18 on that basis. So if you think he's giving an opinion
02:14 19 as opposed to just a fact, you're welcome to object.
02:14 20 MR. ZUBLER: That's understood,
02:14 21 Your Honor. Our point, though, is simply that --
02:15 22 THE COURT: I understand.
02:15 23 MR. ZUBLER: -- when we took his
02:15 24 deposition, he had no notice.
02:15 25 THE COURT: I understand your point.

02:15 1 MR. ZUBLER: Yes. Understood.
02:15 2 THE COURT: And I just made my ruling.
02:15 3 MR. ZUBLER: Thank you, Your Honor.
02:15 4 (Bench conference concludes.)
02:15 5 BY MR. NASH:
02:15 6 Q. Mr. Kopelman, would you mind adjusting your
02:15 7 microphone a little bit just to make sure the audio's
02:15 8 okay?
02:15 9 Now, what did you mean when you said in your
02:15 10 experience, the iTero was an open system?
02:15 11 A. So an open system is a system in which the
02:15 12 user of the system in this context can do with the data
02:15 13 whatever the user of the scanner wants to do. And in
02:16 14 the context of iTero, if a doctor buys iTero, the
02:16 15 doctor can scan any patients for any purpose and use
02:16 16 the data for whatever the doctor wants. That's an open
02:16 17 system.
02:16 18 Q. And in your experience, could doctors send
02:16 19 iTero scans outside of Align?
02:16 20 A. Outside of Align to any establishments the
02:16 21 doctor wants.
02:16 22 Q. Would that include ClearCorrect?
02:16 23 A. That includes ClearCorrect.
02:16 24 Q. Now, during your time at Align, did iTero
02:16 25 remain open in that way?

02:16 1 A. So when we joined Align, I told the Align
02:16 2 people that iTero is an open system, and I want iTero
02:16 3 to stay an open system. And what I heard back from
02:16 4 them: This is our intention as well. So iTero
02:16 5 remained open and it is still open today.
02:16 6 Q. Thank you, Mr. Kopelman.
02:16 7 One final question. Looking back over your
02:17 8 career, what gives you the most satisfaction?
02:17 9 A. That's an interesting question. I think that
02:17 10 the fact that my parents, and especially my father,
02:17 11 lived to see that this dream of mine really happened.
02:17 12 That's, I think, number one. And the fact that my wife
02:17 13 who trusted me for so many years is still with me and
02:17 14 also saw that it was successful.
02:17 15 MR. NASH: Thank you, Mr. Kopelman.
02:17 16 I pass the witness.
02:17 17 MR. ZUBLER: Good afternoon, ladies and
02:18 18 gentlemen of the jury.
02:18 19 My name is Todd Zubler. I represent
02:18 20 ClearCorrect.
02:17 21 CROSS-EXAMINATION
02:17 22 BY MR. ZUBLER:
02:18 23 Q. And good afternoon, Mr. Kopelman. Nice to
02:18 24 meet you.
02:18 25 A. Good afternoon. I didn't get your name.

02:18 1 Q. Yes. My name is Todd Zubler. I represent
02:18 2 ClearCorrect.
02:18 3 A. Nice to meet you.
02:18 4 Q. Would you mind if I ask you some questions
02:18 5 today, sir?
02:18 6 A. Please go ahead.
02:18 7 Q. You are the named inventor on the '936 patent,
02:18 8 correct, sir?
02:18 9 A. That's correct.
02:18 10 Q. And you used to work for Align, correct?
02:18 11 A. Correct.
02:18 12 Q. And you retired from Align in March of 2025,
02:18 13 correct?
02:18 14 A. Correct.
02:18 15 Q. Now, you've been designated as Align's
02:18 16 corporate representative for this case; is that true,
02:18 17 sir?
02:18 18 A. That's correct.
02:18 19 Q. And that's why you've been sitting at counsel
02:18 20 table today and you were able to hear opening
02:18 21 statements and the testimony of Dr. Derakhshan,
02:18 22 correct?
02:18 23 A. I don't know if that's the reason, but I was
02:18 24 here.
02:18 25 Q. Thank you.

02:18 1 And you'll be joining us at counsel table for
02:18 2 the whole trial; is that correct, sir?
02:18 3 A. I believe so. Yes.
02:18 4 Q. Now, you gave deposition testimony in this
02:19 5 case, true?
02:19 6 A. Yes, sir.
02:19 7 Q. And you were paid for the time you spent
02:19 8 preparing for that deposition, correct?
02:19 9 A. That's correct.
02:19 10 Q. And there's nothing wrong with being paid for
02:19 11 the time you spent assisting with litigation, is there,
02:19 12 sir?
02:19 13 A. I don't know the law, but I was paid for the
02:19 14 time.
02:19 15 Q. And there's nothing wrong with that, is there,
02:19 16 sir?
02:19 17 A. Good to know.
02:19 18 Q. We can agree on that, sir.
02:19 19 Now, you're here today to testify on behalf of
02:19 20 Align as the corporate representative, but you haven't
02:19 21 submitted an expert report in this case, have you, sir?
02:19 22 A. Not beyond my deposition.
02:19 23 Q. And you're here to testify as a fact witness
02:19 24 about the -- your invention and the iTero scanner,
02:19 25 correct, sir?

02:19 1 A. That's correct.
02:19 2 Q. You're not here to offer any expert opinions
02:19 3 about infringement or the validity of the '936 patent,
02:19 4 correct, sir?
02:19 5 A. That's correct.
02:19 6 Q. And you understand those are issues for the
02:20 7 jury to decide based on the evidence and expert
02:20 8 testimony that comes in later in the case, correct?
02:20 9 A. I suppose so.
02:20 10 Q. Now, before you worked at Align, you worked at
02:20 11 Cadent, you said, I believe; is that right?
02:20 12 A. Correct.
02:20 13 Q. And Align then acquired Cadent, true?
02:20 14 A. True.
02:20 15 Q. And Cadent was the company that had sold the
02:20 16 iTero scanner, correct?
02:20 17 A. That's correct.
02:20 18 Q. And the iTero scanner is an intraoral scanner,
02:20 19 true -- correct?
02:20 20 A. That's correct.
02:20 21 Q. And let's talk a little bit about your work at
02:20 22 Cadent and Align.
02:20 23 When you were working at Cadent and Align, you
02:20 24 would sometimes review patents owned by other
02:20 25 companies, correct?

02:20 1 A. I sometimes, as my -- from my personal
02:20 2 interest, looked at other patents.
02:20 3 Q. And you would look at patents that you found
02:20 4 on the Google patent search, correct?
02:20 5 A. Probably including Google patents, yes.
02:20 6 Q. And you would do that four or five times or
02:20 7 maybe ten times a year, correct, sir?
02:21 8 A. I cannot put a number.
02:21 9 Q. And there's nothing wrong with companies
02:21 10 looking at patents from other companies, is there, sir?
02:21 11 A. I would assume it's okay.
02:21 12 Q. That's something that normal companies do to
02:21 13 see what other companies are doing in the marketplace,
02:21 14 correct, sir?
02:21 15 A. I know that I did it.
02:21 16 Q. Now, let's talk a little bit about your
02:21 17 patent, the '936 patent, and how you got to that idea.
02:21 18 Now, you testified earlier that the iTero
02:21 19 scanner started selling in 2006; is that correct, sir?
02:21 20 A. That's correct.
02:21 21 Q. And you also testified that you applied for
02:21 22 the '936 patent in 2010, true?
02:21 23 A. That's correct.
02:21 24 Q. So the iTero scanner was on sale publicly for
02:21 25 several years before you applied for the '936 patent,

02:21 1 correct?
02:21 2 A. That's correct.
02:21 3 Q. And by the time the '936 patent was filed,
02:21 4 there were actually a number of other intraoral
02:21 5 scanners that were on the market other than iTero,
02:22 6 correct?
02:22 7 A. By what time?
02:22 8 Q. By the time you filed for the patent in 2010.
02:22 9 A. There were other scanners, very, very few, and
02:22 10 as much as I recall now, they all could not scan the
02:22 11 teeth directly.
02:22 12 Q. Well, we can agree, sir, that even before the
02:22 13 '936 patent was filed in 2010, there were other
02:22 14 intraoral scanners that were available other than the
02:22 15 iTero, right?
02:22 16 A. Partially right. Those scanners did not scan
02:22 17 teeth. You had to paint the teeth in order to scan.
02:22 18 The only scanner that could scan directly was iTero.
02:22 19 Q. Those were intraoral scanners that could scan
02:22 20 the dentition of patients, correct, sir?
02:22 21 A. It could scan the powder over the teeth.
02:22 22 Q. Now, we can agree, sir, that the '936 patent
02:22 23 doesn't claim to cover the general idea of an intraoral
02:23 24 scanner, correct?
02:23 25 A. That's correct.

02:23 1 Q. The '936 patent claims to have invented a
02:23 2 particular feature that can be incorporated into an
02:23 3 intraoral scanner, correct, sir?
02:23 4 A. I think that it's more than a feature. I
02:23 5 would call it a workflow.
02:23 6 Q. Well, sir, we can agree that there's only one
02:23 7 feature of the current iTero scanner, what you call the
02:23 8 eraser function, that is using the '936 patent,
02:23 9 correct?
02:23 10 A. Yes.
02:23 11 Q. The '936 patent doesn't cover scanners that
02:23 12 don't have the claimed eraser function, correct?
02:23 13 A. The patent is on the eraser, not on other
02:23 14 scanners.
02:23 15 Q. And in your words, the '936 patent enables a
02:23 16 doctor to do an incremental scan, right?
02:23 17 A. That's another way to look at it.
02:23 18 Q. And by "incremental scan," you mean that the
02:23 19 doctor can take a scan, erase a part that he or she
02:23 20 doesn't like, freeze the rest of it, and then rescan
02:24 21 the area he or she didn't like, and then combine the
02:24 22 old scan that was frozen with a new scan to create a
02:24 23 composite image; is that right, sir?
02:24 24 A. So the patent discuss more than one ideas.
02:24 25 One of the ideas in the patent is to freeze, but it's

02:24 1 not limited to freeze. So you can apply the patent
02:24 2 without having to freeze. That's -- one of the ideas
02:24 3 here is without the freeze.
02:24 4 Q. You've characterized the idea behind the '936
02:24 5 patent as an incremental scan, correct?
02:24 6 A. That's one way to describe it to people who
02:24 7 don't understand the material.
02:24 8 Q. Now, and when you're thinking about what in
02:24 9 your view is novel about the '936 patent compared to
02:24 10 what came before the '936 patent, before what was being
02:24 11 done in 2010, there are no other concepts that come to
02:24 12 mind besides combining two different scans, correct,
02:25 13 sir?
02:25 14 A. I'm not sure I follow the question.
02:25 15 Q. Okay. Well, when you're thinking, sir, about
02:25 16 what is novel in your view about the '936 patent
02:25 17 compared to what was coming before the '936 patent in
02:25 18 2010, the concept -- the only concept that comes to
02:25 19 your mind is combining two different scans. That's the
02:25 20 novelty, correct?
02:25 21 A. No. Another part of the novelty is the
02:25 22 ability for the clinician to erase an area with the
02:25 23 problem in order to go back to the patient, fix this
02:25 24 area, change -- patch the patient and then rescan.
02:25 25 Q. Now, sir, as we mentioned before, you gave a

02:25 1 deposition testimony in this case, correct?
02:25 2 A. Correct.
02:25 3 Q. Now, let me just explain, if I could, and we
02:25 4 can talk about what the deposition process is for the
02:25 5 benefit of the ladies and gentlemen of the jury.
02:25 6 A. Okay.
02:25 7 Q. In a case like this, you came to the legal
02:26 8 offices of your attorneys, and our attorneys were able
02:26 9 to ask you questions under oath; is that correct, sir?
02:26 10 A. Correct.
02:26 11 Q. And that's a process that goes both ways. The
02:26 12 attorneys for Align were able to ask questions of
02:26 13 ClearCorrect's witnesses as well, correct?
02:26 14 A. Correct.
02:26 15 Q. And that's fair because both sides can
02:26 16 understand what the other witnesses will have to say,
02:26 17 right?
02:26 18 A. That's a legal definition, but I believe so.
02:26 19 Q. And when you gave testimony, sir, you
02:26 20 testified under oath, the same oath you took today,
02:26 21 correct?
02:26 22 A. Correct.
02:26 23 Q. And, sir, there was a court reporter present
02:26 24 to take down your testimony, true?
02:26 25 A. Correct.

02:26 1 Q. If I could ask you to turn to Tab 1 of your
02:26 2 binder.
02:26 3 And this is a transcript of your deposition,
02:26 4 sir. And if I could ask you to turn --
02:26 5 A. One second. Could I get my glasses, please?
02:26 6 Q. Oh, certainly.
02:26 7 MR. ZUBLER: May I approach the witness?
02:27 8 BY MR. ZUBLER:
02:27 9 Q. This is the transcript of your deposition.
02:27 10 And if I could ask you to turn to Page 177 of the
02:27 11 transcript, please.
02:27 12 A. What page number?
02:27 13 MR. ZUBLER: May I approach the witness,
02:27 14 Your Honor?
02:27 15 BY MR. ZUBLER:
02:27 16 Q. I'm going to direct your attention to
02:28 17 Page 177, Line 25 of the transcript.
02:28 18 Are you there, sir?
02:28 19 A. Yeah.
02:28 20 Q. And if you could read along with me. You were
02:28 21 asked:
02:28 22 Question: And so when you're thinking about
02:28 23 in your view the novelty of the '936 patent over what
02:28 24 was being done before July 2010, are there any other
02:28 25 concepts besides combining two different scans that

02:28 1 come to mind?
02:28 2 Answer: No.
02:28 3 Then there was some questions with the
02:28 4 reporter. And the attorney then asked: Any other
02:28 5 innovations that come to mind over what was being done
02:28 6 before July 2010?
02:28 7 Answer: Related to the incremental scanning?
02:28 8 Question: Related to what's claimed in the
02:28 9 '936 patent.
02:28 10 Answer: Nothing that I recall.
02:28 11 Do you see that testimony, sir?
02:28 12 A. Yeah.
02:28 13 Q. You were asked those questions, and you gave
02:28 14 those answers, correct, sir?
02:28 15 A. Correct.
02:28 16 Q. Now, sir, we can agree that some patents are
02:29 17 more valuable than other patents, correct, sir?
02:29 18 A. I would assume.
02:29 19 Q. And some patents don't have much value at all,
02:29 20 correct?
02:29 21 A. That, I don't know.
02:29 22 Q. Well, are you -- you're aware, sir, that --
02:29 23 you're not aware, sir, of Align ever having licensed
02:29 24 the '936 patent to anyone else, correct?
02:29 25 A. I do not know.

02:29 1 Q. You're not aware, sir, of anyone ever
02:29 2 expressing interest in licensing the '936 patent,
02:29 3 correct?
02:29 4 A. I do not know, and I wouldn't know.
02:29 5 Q. And you're not aware of anyone who has sought
02:29 6 to buy the '936 patent, correct?
02:29 7 A. Again, I do not know.
02:29 8 Q. Now, you're the corporate representative for
02:29 9 Align, true?
02:29 10 A. True.
02:29 11 Q. And in that role, you're aware of the
02:29 12 litigation positions that Align is taking in this case,
02:29 13 correct?
02:29 14 A. I don't know all the details of different
02:29 15 commercial discussions that took place.
02:29 16 Q. And you're aware that Align has hired an
02:29 17 expert to analyze damages for alleged infringement,
02:29 18 correct?
02:29 19 A. I would assume so.
02:30 20 Q. And he's going to be testifying later in this
02:30 21 case, a man named Mr. Lasinski. Do you know that, sir?
02:30 22 A. I don't know him personally.
02:30 23 Q. And are you aware, sir, that Mr. Lasinski
02:30 24 submitted an expert report in this case on the issue of
02:30 25 damages? Are you aware of that, sir?

02:30 1 A. Yes.
02:30 2 Q. And are you aware, sir, that Mr. Lasinski,
02:30 3 after all of his analysis, never assigned any value or
02:30 4 any damages figure for alleged infringement of the '936
02:30 5 patent?
02:30 6 A. Yeah. I do not know that.
02:30 7 Q. Last set of questions, Mr. Kopelman.
02:30 8 You were here earlier today. You heard the
02:30 9 opening statements. You saw the testimony of
02:30 10 Dr. Derakhshan, correct?
02:30 11 A. Correct.
02:30 12 Q. And you saw numerous e-mails presented in
02:30 13 evidence regarding Align executives referring to the
02:30 14 Invisalign iTero system as a closed system, correct?
02:30 15 A. That's what the two sides argued about.
02:30 16 Q. The two sides argued about.
02:31 17 And you saw the e-mails, sir, where top Align
02:31 18 executives referred to the Align, Invisalign, iTero
02:31 19 system as a closed system. You saw those e-mails,
02:31 20 correct, sir?
02:31 21 A. I saw the e-mails, yes.
02:31 22 MR. ZUBLER: I'll pass the witness.
02:31 23 MR. NASH: No questions for the witness,
02:31 24 Your Honor.
02:31 25 THE COURT: Thank you, sir.

02:31 1 MS. DURIE: Your Honor, we call as our
02:31 2 next witness Dr. Maureen Valley.
02:31 3 (The witness was sworn.)
02:31 4 DIRECT EXAMINATION
02:31 5 BY MS. DURIE:
02:32 6 Q. Good afternoon.
02:32 7 A. Good afternoon.
02:32 8 Q. Could you please introduce yourself to the
02:32 9 jury?
02:32 10 A. Hello. My name is Dr. Maureen Valley, and I'm
02:32 11 an orthodontist.
02:32 12 Q. Where do you practice?
02:32 13 A. I practice in Lodi, California. It is just
02:32 14 south of Sacramento, and it's somewhat of a rural area.
02:32 15 Q. What drew you to orthodontics?
02:33 16 A. Wow. It's been a wonderful profession. I
02:33 17 wanted to help people. I mean, that's what most
02:33 18 orthodontists will tell you, but it's the truth. And,
02:33 19 you know, we really understand the value of good oral
02:33 20 health as it relates to straight teeth and a good bite.
02:33 21 And over the past years, we are really
02:33 22 starting to understand how that relates to overall
02:33 23 health. Maybe when I made that decision to enter the
02:33 24 profession, I didn't quite know that then. But I think
02:33 25 my motivation was to help people with their

02:33 1 self-confidence.
02:33 2 Q. Where did you go to school?
02:33 3 A. I started with a bachelor's of art in biology
02:33 4 at the University of California in Santa Barbara. From
02:33 5 there, I went to Harvard University, and I got my
02:33 6 dental degree and my master's of public health. And
02:33 7 then lastly, I finished at Northwestern University in
02:33 8 Chicago, where I got my master's and certificate in
02:34 9 orthodontics.
02:34 10 Q. Have you spent any part of your career
02:34 11 teaching?
02:34 12 A. I have.
02:34 13 Q. Tell us about that.
02:34 14 A. So I had a love for teaching. I started at
02:34 15 Harvard University, and then I moved on to the
02:34 16 University of the Pacific. This is in San Francisco.
02:34 17 And there I was an associate professor, and I ran the
02:34 18 graduate orthodontic clinic for about 11 years.
02:34 19 Q. How long have you actually practiced as an
02:34 20 orthodontist?
02:34 21 A. So I've been in the dental world since 1987,
02:34 22 and I've been a practicing orthodontist for 32 years.
02:34 23 Q. Do you own your own practice?
02:34 24 A. I used to. I owned my own practice for about
02:34 25 20 years, and currently I am working for Kids Care

02:34 1 Dental & Orthodontics in Lodi.
02:34 2 Q. Is your practice now taking care of kids?
02:34 3 A. It's taking care of kids, teenagers, and their
02:35 4 parents.
02:35 5 Q. Now, if you've been doing this for 32 years,
02:35 6 why aren't you retired yet?
02:35 7 A. A lot of people ask me that question. A few
02:35 8 reasons. I feel I'm at a point in my career where I
02:35 9 feel very confident that I know what I'm doing. I have
02:35 10 a wonderful staff. My assistants are highly trained.
02:35 11 I love going to work, working with them as a team. And
02:35 12 also the technologies these days have really come far.
02:35 13 And I feel at this point with all of that, I can really
02:35 14 help my patients.
02:35 15 My patients come to me. I know they work very
02:35 16 hard to bring their children or themselves to me to pay
02:35 17 for this treatment, and I feel good that I can really
02:35 18 give them the best of care.
02:35 19 MS. DURIE: Your Honor, we tender
02:35 20 Dr. Valley as an expert in orthodontics and dentistry.
02:36 21 MS. FERRERA: No objection.
02:36 22 THE COURT: She'll be admitted as such.
02:36 23 BY MS. DURIE:
02:36 24 Q. Now, Dr. Valley, have you specifically worked
02:36 25 with Align in the past?

02:36 1 A. I have.
02:36 2 Q. What kind of work, just at a super high level,
02:36 3 have you done for Align?
02:36 4 A. Some consulting work.
02:36 5 Q. When did you start that consulting work with
02:36 6 Align?
02:36 7 A. Over 20 years ago.
02:36 8 Q. And over that whole period of time, what
02:36 9 percentage of your income would you say has come from
02:36 10 work for Align?
02:36 11 A. I would say 10 percent or less. I was always
02:36 12 working full time as a practicing orthodontist.
02:36 13 Q. Why did you decide to do this kind of
02:36 14 consulting work?
02:36 15 A. I find it very mentally stimulating. You
02:36 16 know, sometimes working in your practice, it's a little
02:36 17 isolating. And I find patents to be very interesting.
02:36 18 Q. How do you set your rate for being an expert
02:36 19 witness?
02:36 20 A. I set my rate to be somewhat equivalent to
02:37 21 what I normally would make like on an hourly basis if I
02:37 22 were to be practicing.
02:37 23 Q. How many patients have you treated over the
02:37 24 course of your career?
02:37 25 A. I've treated about 10,000 patients.

02:37 1 Q. And of those 10,000 patients, how many of them
02:37 2 got wires and brackets, conventional metal braces
02:37 3 versus clear aligners?
02:37 4 A. Uh-huh. I would say about 75 percent were
02:37 5 braces patients.
02:37 6 Q. How do you decide whether a given patient is
02:37 7 going to get braces or is going to get an aligner?
02:37 8 A. Sure. So the very first appointment is a
02:37 9 consultation appointment, and that's when the patient
02:37 10 and their parents come to me. And I want to listen
02:37 11 very closely to them. I want to understand what their
02:37 12 concerns are and what their goals are.
02:37 13 And then I do my clinical exam. I come up
02:37 14 with a diagnosis. And from there, I'm -- I'm there to
02:37 15 educate and to help my patients and their parents
02:38 16 decide upon how we're going to go about doing this.
02:38 17 I have -- I always have in my mind this very
02:38 18 big bag of appliances I can use. And through my
02:38 19 experience, I know some work better than others. In
02:38 20 this instance -- in this instance -- and every patient
02:38 21 is unique to me. So I will sit down and we will
02:38 22 discuss their concerns, their goals, what I saw.
02:38 23 Of course I'll give them options, and then I
02:38 24 will give my recommendations.
02:38 25 Q. Now, Dr. Valley, let's talk a little bit about

02:38 1 scanners. Does your practice have an intraoral
02:38 2 scanner?
02:38 3 A. It does.
02:38 4 Q. Which intraoral scanner does it have?
02:38 5 A. It's the one right in front of you. It's the
02:38 6 iTero scanner.
02:38 7 Q. Has that iTero scanner been helpful to you in
02:38 8 your practice?
02:38 9 A. It's been very helpful.
02:38 10 Q. Why is that?
02:38 11 A. Well, I go back to the days of impression
02:38 12 taking. So I have that to compare it to. And we use
02:38 13 our iTero scanner every day. It's -- somebody's always
02:39 14 got that scanner. We use it for diagnostic purposes,
02:39 15 educational purposes, scanning for retainers or other
02:39 16 appliances, and also for clear aligner therapy.
02:39 17 Q. Now, are you personally the one who is using
02:39 18 the iTero scanner?
02:39 19 A. I am not. My assistants are trained to use
02:39 20 the scanner. They take the records. They take the
02:39 21 photographs. They take the x-rays, and they take the
02:39 22 scans. However, all of this is under my direct
02:39 23 supervision.
02:39 24 Q. How -- are you familiar with the eraser
02:39 25 feature that we just heard about?

02:39 1 A. I am.
02:39 2 Q. Have you used that eraser feature in your
02:39 3 practice?
02:39 4 A. All the time.
02:39 5 Q. Is that feature useful to you in your
02:39 6 practice?
02:39 7 A. It's very useful.
02:39 8 Q. Why is that?
02:39 9 A. It's very useful for myself for efficiency and
02:40 10 precision, getting a precise impression, and it's also,
02:40 11 I know, helpful for the patient. Because for some
02:40 12 patients, it's not the most comfortable experience.
02:40 13 For others, it's okay. But it limits the amount of
02:40 14 time that I have to keep going back in and rescanning
02:40 15 their teeth.
02:40 16 Q. Now, are you here to offer some expert
02:40 17 opinions in this case?
02:40 18 A. I am.
02:40 19 Q. And did you prepare some demonstratives to
02:40 20 assist with your testimony?
02:40 21 A. I prepared some slides.
02:40 22 MS. DURIE: If we could put up Slide 1.
02:40 23 BY MS. DURIE:
02:40 24 Q. Could you please tell the jury what the
02:40 25 opinions are that you're here to testify about today?

02:40 1 A. Sure. I was asked for my opinions regarding
02:40 2 first whether the SIRIOS and Virtuo Vivo scanners,
02:40 3 those are the Straumann scanners, whether they met the
02:40 4 requirements of Claim 1 of the '936 patent.
02:40 5 Q. And if I can just stop you there for a moment.
02:41 6 Is the '936 patent Mr. Kopelman's patent that we just
02:41 7 heard about?
02:41 8 A. Correct.
02:41 9 Q. And what other opinion are you here about?
02:41 10 A. And then secondly, I was asked my opinion
02:41 11 regarding whether or not the iTero scanner practices
02:41 12 the same claim, Claim 1 of the '936 patent.
02:41 13 Q. And what is your opinion with respect to each
02:41 14 of these two issues?
02:41 15 A. My opinion is, first, that the SIRIOS and Vivo
02:41 16 scanners do meet all of the requirements of the '936
02:41 17 patent and that the iTero scanner practices the '936
18 patent.
02:41 19 MS. DURIE: So if we could go to the next
02:41 20 slide, please.
21 BY MS. DURIE:
02:41 22 Q. What do we have here?
02:41 23 A. This is the '936 patent that we've been
02:41 24 calling the eraser patent. And this is Claim 1. This
02:41 25 is the claim in question. You'll see listed under the

02:41 1 very top are all of the requirements that I was looking
02:42 2 at to see if these scanners met those requirements.
02:42 3 Q. We're going to talk through the requirements
02:42 4 one by one, but first, I want to walk through a little
02:42 5 bit how you came up with your opinions in this case.
02:42 6 Can you turn in the binder that you have to
02:42 7 PTX-1798?
02:42 8 A. I'm there.
02:42 9 Q. What is PTX-1798?
02:42 10 A. So these are -- so during my inspections, I
02:42 11 ran some tests and I took photographs and screenshots
02:42 12 of the scanner displays.
02:42 13 MS. DURIE: Your Honor, we offer
02:42 14 PTX-1798.
02:42 15 MS. FERRERA: No objection.
02:42 16 THE COURT: Admitted.
02:42 17 BY MS. DURIE:
02:42 18 Q. Could you please turn next to PTX-1412 in your
02:42 19 binder?
02:42 20 A. I'm there.
02:42 21 Q. What is that?
02:42 22 A. This is the Straumann SIRIOS instruction
02:42 23 manual.
02:42 24 MS. DURIE: We offer PTX-1412.
02:42 25 MS. FERRERA: No objection.

02:42 1 THE COURT: Admitted.
02:42 2 BY MS. DURIE:
02:42 3 Q. And if we could next, please, have you --
02:42 4 MS. DURIE: If we could actually pull up,
02:42 5 please, the slide that has PTX-1412 at 51.
6 BY MS. DURIE:
02:43 7 Q. What is this thing here, Dr. Valley?
02:43 8 A. So this comes from the instruction manual of
02:43 9 the SIRIOS scanner. And this is a section on
02:43 10 troubleshooting. And it just shows that if you have
02:43 11 any discrepancies in the 3D model, then you can use a
02:43 12 feature called the cut tool to eliminate some of these
02:43 13 discrepancies and then conduct a rescan.
02:43 14 Q. Now, Dr. Valley, did you also watch any videos
02:43 15 as part of forming your opinion?
02:43 16 A. I did.
02:43 17 Q. Would you like to play one for the jury?
02:43 18 A. Sure.
02:43 19 MS. DURIE: If we could please play
02:43 20 PTX-1409.
21 BY MS. DURIE:
02:43 22 Q. And maybe you could just tell us again what
02:43 23 we're seeing here.
02:43 24 A. Okay. So this is a video from Straumann on
02:43 25 the SIRIOS scanner, and what we're going to see here,

02:43 1 this is after the doctor has taken the first scan. Now
02:43 2 they're going to indicate that area that they want to
02:43 3 erase. This is the cut tool. And you can see it's
02:43 4 highlighted in blue. I would be using my mouse in the
02:44 5 cursor on the screen to do that.
02:44 6 Then we touch the cut over here, and you'll
02:44 7 see that has been eliminated, that area.
02:44 8 Then I go back into the patient's mouth. This
02:44 9 is an area that's now been changed in the mouth, and
02:44 10 I'm able to rescan just that portion that was removed,
02:44 11 and that gets incorporated into what was retained.
02:44 12 Q. Dr. Valley, how does this video that we just
02:44 13 watched compare to your own inspection of the SIRIOS
02:44 14 scanner?
02:44 15 A. It's exactly the same.
02:44 16 Q. Now, can you explain to the jury how you went
02:44 17 about doing the actual infringement analysis?
02:44 18 A. Sure. So I started with the '936 patent, and
02:44 19 I analyzed it, specifically Claim 1. And then I took
02:44 20 that and I compared it to the products. That would be
02:44 21 the SIRIOS scanner and the Virtuo Vivo product. And I
02:44 22 went through the workflow on those scanners and
02:44 23 compared it to each requirement of the Claim 1.
02:45 24 MS. DURIE: Your Honor, with Your Honor's
02:45 25 permission, I would ask the witness to step down and

02:45 1 come to approach the scanner.
02:45 2 THE COURT: Sure.
02:45 3 MS. DURIE: Thank you.
02:45 4 BY MS. DURIE:
5 Q. Dr. Valley, if you could just step down here.
6 Thank you.
02:45 7 Could you show the jury the different parts of
02:45 8 the scanner?
02:45 9 MS. FERRERA: Your Honor, may I come
02:45 10 around?
02:45 11 BY MS. DURIE:
02:45 12 Q. Go ahead.
02:45 13 A. So this is the iTero scanner, and we're going
02:45 14 to start with this is the wand or the handheld device.
02:45 15 This is what I place in your mouth to do the scan of
02:45 16 your teeth. This is connected to a computer. The
02:45 17 computer has software. It has memory. The software
02:45 18 runs the instructions for the scanning. And you can
02:45 19 see there is a display screen here.
02:46 20 Q. Now, in terms of what you did with respect to
02:46 21 your infringement analysis -- I'm going to ask you just
02:46 22 to stay there.
02:46 23 MS. DURIE: And if we could please put up
02:46 24 the next slide.
02:46 25 BY MS. DURIE:

02:46 1 Q. And I think you're going to be able to see it
02:46 2 here on the screen.
02:46 3 What do we have here at the top?
02:46 4 A. I'm going to step over here.
02:46 5 Q. Sure.
02:46 6 A. This is what we call the preamble of Claim 1.
02:46 7 It's the very beginning. And this is -- underneath it
02:46 8 is one of the requirements. So this is saying there's
02:46 9 a system for scanning. And this system for scanning
02:46 10 has a handheld intraoral scanner. It has a computer.
02:46 11 That computer has readable medium, which is like
02:46 12 memory, and it includes instructions, a software.
02:46 13 Q. And did you find that to be present in the
02:46 14 SIRIOS scanner?
02:46 15 A. I did. These are photographs that I took when
02:46 16 I inspected both. You can see that for both scanners,
02:46 17 there's a handheld intraoral scanner that goes in your
02:47 18 mouth to scan your teeth. There's a computer. The
02:47 19 computer has software, and there's a display screen.
02:47 20 MS. DURIE: So if we can go to the next
02:47 21 slide.
22 BY MS. DURIE:
02:47 23 Q. It says here: Receive first scan data of
02:47 24 patient's teeth from the handheld intraoral scanner.
02:47 25 If I hand you these teeth, could you maybe

02:47 1 show us --
02:47 2 A. Sure.
02:47 3 Q. -- what we're talking about?
02:47 4 A. Sure. So imagine I'm going to start to scan
02:47 5 your teeth. I take the handheld intraoral scanner. I
02:47 6 push a button and then I start waving it over the
02:47 7 teeth, and that starts to capture data of your teeth.
02:47 8 Q. And did you find that to be present -- you can
02:47 9 set that back down -- in the SIRIOS product that there
02:47 10 was a way to receive first scan data of the patient's
02:47 11 teeth from the handheld intraoral scanner?
02:48 12 A. I did with both.
02:48 13 MS. DURIE: If we can go to the next
02:48 14 slide, please.
02:48 15 BY MS. DURIE:
02:48 16 Q. The next requirement is display, to a display,
02:48 17 a model of the patient's teeth, where the model is
02:48 18 based on the received first scan data.
02:48 19 What's that talking about, and did you find
02:48 20 that to be present?
02:48 21 A. I found that to be present in both of the
02:48 22 scanning systems because as I was using the wand to
02:48 23 scan the teeth, I could look at the display. And I saw
02:48 24 the 3D model of that -- the physical teeth start to
02:48 25 show up on the display.

02:48 1 MS. DURIE: Let's go to the next
02:48 2 requirement, if we could, please. 1[c].
3 BY MS. DURIE:
02:48 4 Q. It says you receive user input defining a
02:48 5 portion of the model to be removed.
02:48 6 Did you find that to be present?
02:48 7 A. Yes. I did. So I was able to identify on the
02:48 8 screen, on the display, the 3D model, I was able to
02:49 9 take my mouse and the cursor and identify a portion of
02:49 10 that first scan, define a portion that I wanted to
02:49 11 remove.
02:49 12 Q. And is that what we see here circled in
02:49 13 turquoise on the screen?
02:49 14 A. On both sides highlighted in blue. On the
02:49 15 SIRIOS side, this is a cut tool. And on the Virtuo
02:49 16 Vivo side, it's a Lasso tool, eraser tool.
02:49 17 Q. Thank you.
02:49 18 Now, if we go to the next slide and we look at
02:49 19 1[d], removing, from the displayed model, a removed
02:49 20 surface portion of the model.
02:49 21 Can you explain what that's talking about?
02:49 22 A. Yes. Just basically the software then removed
02:49 23 that portion that I had identified.
02:49 24 Q. And then if we go to the next requirement,
02:49 25 1[e], receiving second scan data of the patient's teeth

02:49 1 from the handheld scanner, can you maybe demonstrate
02:49 2 for us what this is talking about?
02:49 3 A. Sure. So at this point in time, there's maybe
02:50 4 been a change to the mouth. I know quite often in my
02:50 5 practice we're doing scans. Sometimes there's some
02:50 6 food. And in that first scan, it will show up in the
02:50 7 display. And I'll say, oh, there's some food there.
02:50 8 We don't want that in our scan.
02:50 9 So I go back to the patient's mouth. I remove
02:50 10 the food. I go back with my handheld scanner, and I'm
02:50 11 just going to scan that portion that I had removed from
02:50 12 the 3D model on the display screen.
02:50 13 Q. And did you find that to be present in the
02:50 14 SIRIOS and Virtuo Vivo devices?
02:50 15 A. I did. When I performed my test, you can see
02:50 16 these are the screenshots I took. You can see that
02:50 17 this is the second scan data that has come in of that
02:50 18 portion that I had previously removed.
02:50 19 MS. DURIE: If we can please go to the
02:50 20 next slide.
02:50 21 BY MS. DURIE:
02:50 22 Q. Replace at least a portion of the removed
02:50 23 surface portion of the model using the received second
02:50 24 scan data, including surface data of a physically
02:51 25 changed portion of the patient's intraoral cavity.

02:51 1 That's a mouthful, but what does that mean?
02:51 2 A. It means when I went in for the second time
02:51 3 and I was scanning the surface of that tooth that I had
02:51 4 previously removed from the display and the scanner's
02:51 5 picking up the surface of that tooth, the data from
02:51 6 that, and that is being projected now onto the display
02:51 7 screen.
02:51 8 Q. So is that what we're seeing in those yellow
02:51 9 circles?
02:51 10 A. Yes. It is.
02:51 11 THE COURT: Counsel, I'm -- I'm not
02:51 12 seeing why she has to be standing up here.
02:51 13 MS. DURIE: That's fine. She can -- she
02:51 14 can go back, Your Honor. Here.
02:51 15 BY MS. DURIE:
02:51 16 Q. Now, are you an expert in what's happening at
02:51 17 the level of the computer?
02:51 18 A. No.
02:51 19 Q. Okay. Now, I want to go to the next
02:51 20 requirement.
02:51 21 MS. DURIE: If we can go to the next
22 slide.
23 BY MS. DURIE:
02:51 24 Q. Outputting to the display a model of the
02:52 25 patient's teeth with the portion of the removed surface

02:52 1 portion replaced.
02:52 2 What's that talking about?
02:52 3 A. So what I'm seeing here is when I look at the
02:52 4 display, I see the first scan, the part that was
02:52 5 removed, and then the part that I scanned the second
02:52 6 time. And it's being replaced. It's being combined,
02:52 7 and now I have a full, complete model.
02:52 8 Q. Okay. Now, I want to ask you, all of these
02:52 9 images that we have been looking at, what are these
02:52 10 images of?
02:52 11 A. These images are a 3D model of my physical --
02:52 12 this time and in my test it was a physical model of
02:52 13 plastic teeth. If I were to have scanned your mouth,
02:52 14 it would have been -- this would have been a 3D model
02:52 15 of your actual teeth.
02:52 16 Q. And the SIRIOS, just what is the SIRIOS?
02:52 17 A. The SIRIOS is a scanning system.
02:52 18 Q. Who sells the SIRIOS?
02:53 19 A. Straumann.
02:53 20 Q. And what about the Virtuo Vivo, what is the
02:53 21 Virtuo Vivo?
02:53 22 A. Sure. It's -- it's the same.
02:53 23 Q. Also sold by Straumann?
02:53 24 A. Correct.
02:53 25 Q. And do you understand to be -- those to be

02:53 1 products that are accused of infringement in this case?
02:53 2 A. Correct.
02:53 3 Q. Now, do you know what's going on under the
02:53 4 hood at the computer source code level in these
02:53 5 systems?
02:53 6 A. I'm a clinician. I do not know what's going
02:53 7 on under it. I use the system.
02:53 8 Q. Will there be somebody else who will be
02:53 9 testifying to the jury about that portion of things?
02:53 10 A. Yes. I understand Dr. Singh will be coming up
02:53 11 soon.
02:53 12 Q. So based on your analysis, Dr. Valley, can you
02:53 13 summarize your conclusions for the jury?
02:53 14 A. So my conclusions, after running my tests on
02:53 15 the SIRIOS and the Virtuo Vivo scanners, is that they
02:53 16 meet all of the claims -- excuse me -- all of the
02:53 17 requirements as I've checked off in green of Claim 1 of
02:53 18 the '936 patent and, therefore, they infringe.
02:54 19 Q. Now, Dr. Valley, did you also inspect Align's
02:54 20 iTero scanner -- that's the one that we have here -- as
02:54 21 part of your analysis?
02:54 22 A. I did. I ran the very same test on the iTero.
02:54 23 Q. And did you consider whether iTero's eraser
02:54 24 tool satisfies Claim 1 of the '936 patent?
02:54 25 A. I found that the iTero also practices the '936

02:54 1 patent.
02:54 2 Q. And on which iTero versions is that eraser
02:54 3 tool available?
02:54 4 A. I understand that the eraser tool has been
02:54 5 available since Version 4, which was released in
02:54 6 May 2011.
02:54 7 Q. Okay. Thank you.
02:54 8 I want to ask you briefly about one other
02:54 9 thing. Do braces use the same type of wire all the way
02:54 10 through treatment or does it change?
02:54 11 A. No. We use a series of wires when we do
02:54 12 braces.
02:54 13 Q. Why does it change?
02:54 14 A. It's very important because you have to go
02:54 15 through a series of wires. These wires start off very
02:55 16 flexible and small and thin because the patient has
02:55 17 brackets bonded to their teeth, and you have to -- if
02:55 18 their teeth are crooked, you have to weave that in and
02:55 19 out, connect brackets.
02:55 20 Now, those first wires start to gently apply
02:55 21 pressure to the teeth, make the teeth straight. And as
02:55 22 you progress through the series of wires, they get
02:55 23 straighter and straighter.
02:55 24 Q. What is that wire that's used towards the end
02:55 25 of the process called?

02:55 1 A. Uh-huh. So there's different phases as your
02:55 2 teeth move. The bulk of the movement happens at first,
02:55 3 and then at the very end we call that our detailing
02:55 4 phase where the teeth are almost there but there's just
02:55 5 a little bit more that you want to get the teeth
02:55 6 perfect. We call that the finishing stage, and that's
02:55 7 when we use our finishing wire.
02:55 8 Q. And for about what percentage of the course of
02:55 9 treatment is that finishing wire used?
02:55 10 A. I would say about 20 to 25 percent.
02:55 11 Q. So switching gears a little bit, does that
02:56 12 same concept come up in the aligner world?
02:56 13 A. Yes, although there are slightly different
02:56 14 systems, the concept is the same. As we're
02:56 15 straightening your teeth, we're going through a series
02:56 16 of aligners. Your teeth get straighter and straighter
02:56 17 and straighter until we're at the very end. And then
02:56 18 we just want to get it -- tweak it, just tiny little
02:56 19 movements just to get it right.
02:56 20 Q. Are you aware of any aligner company that uses
02:56 21 something similar to a finishing wire?
02:56 22 A. I am.
02:56 23 Q. What is that company?
02:56 24 A. That company is Ormco.
02:56 25 Q. And do you understand how that works?

02:56 1 A. I do. Just as I described, the patient will
02:56 2 move through a series of aligners. You get almost to
02:56 3 the very end, and you want to tweak it, just precise
02:56 4 adjustments. And I understand that the Ormco aligner
02:56 5 system has a material they call the finishing aligner
02:56 6 material, and it's different. It's a little stiffer,
02:56 7 and it gives you just that last bit of tooth movement.
02:57 8 Q. Could you turn in your binder, please, to
02:57 9 PTX-89, and could you tell us what that is?
02:57 10 A. So I'm looking at the Ormco brochure.
02:57 11 Q. Did you rely on this to form your opinions?
02:57 12 A. I did.
02:57 13 MS. DURIE: We offer PTX-89.
02:57 14 MS. FERRERA: No objection.
02:57 15 THE COURT: Admitted.
02:57 16 BY MS. DURIE:
02:57 17 Q. And how do Ormco's, these stiffer aligners,
02:57 18 what is the function that they are serving?
02:57 19 A. Just as I explained, to finish. They're --
02:57 20 they're stiffer, and they do just that final pressure,
02:57 21 that final refinement of the teeth.
02:57 22 Q. And over what percentage of the course of
02:57 23 treatment would you expect that to operate?
02:57 24 A. Again, about 20 to 25 percent.
02:57 25 MS. DURIE: Thank you, Dr. Valley.

02:57 1 I pass the witness.
02:57 2 MS. FERRERA: Ladies and gentlemen, I'd
02:58 3 like to just introduce myself briefly. My name is
02:58 4 Vinita Ferrera, and I'm one of the attorneys that's
02:58 5 representing ClearCorrect here today.
6 CROSS-EXAMINATION
7 BY MS. FERRERA:
02:58 8 Q. Good afternoon, Dr. Valley. Nice to see you
02:58 9 again.
02:58 10 A. Good afternoon.
02:58 11 Q. Now, I just want to finish -- start where you
02:58 12 finished, which you were talking about braces and clear
02:58 13 aligners. And I just want to make sure I understand
02:58 14 one thing.
02:58 15 When you want to eat food or drink, you're
02:58 16 supposed to take your clear aligners off, right?
02:58 17 A. Correct.
02:58 18 Q. But braces you leave on when you're eating and
02:58 19 drinking, right?
02:58 20 A. Correct.
02:58 21 Q. And that's a difference between them, correct?
02:58 22 A. Correct.
02:58 23 Q. Now, I think I heard you say to your counsel
02:58 24 earlier that you've been a practicing orthodontist for
02:59 25 32 years; is that right?

02:59 1 A. That's correct.
02:59 2 Q. So that's since about 1994?
02:59 3 A. Yes.
02:59 4 Q. And you said you've treated approximately
02:59 5 10,000 patients; is that right?
02:59 6 A. Correct.
02:59 7 Q. And you said that about 75 percent of them
02:59 8 were braces, right?
02:59 9 A. Yes.
02:59 10 Q. But the other 25 percent were clear aligners,
02:59 11 correct?
02:59 12 A. Approximately. I do a few other things, but I
02:59 13 think in general, yes. That has been how I've
02:59 14 practiced.
02:59 15 Q. So 2,500 patients, about 25 percent of your
02:59 16 patients, right?
02:59 17 A. Correct.
02:59 18 Q. And you agree that there are multiple brands
02:59 19 of clear aligners that are available, correct?
02:59 20 A. That's correct.
02:59 21 Q. Invisalign is one?
02:59 22 A. Yes.
02:59 23 Q. And ClearCorrect is another?
02:59 24 A. Yes.
02:59 25 Q. Another one is Spark. You were just talking

02:59 1 about that brand, right?
02:59 2 A. Correct.
02:59 3 Q. And there are other brands too, correct?
02:59 4 A. There are.
02:59 5 Q. But the only clear aligner brand that you've
02:59 6 ever used with your patients has been Invisalign,
02:59 7 right, Dr. Valley?
02:59 8 A. Correct.
02:59 9 Q. So you don't offer your patients a choice of
03:00 10 clear aligner brands, correct?
03:00 11 A. I use Invisalign. I've come to be very
03:00 12 confident with the product. My goal is to deliver what
03:00 13 I feel is the best for them.
03:00 14 Q. Right. So you do not offer your patients a
03:00 15 choice of clear aligner brands, right? You only offer
03:00 16 Invisalign?
03:00 17 A. That's correct.
03:00 18 Q. Now, Dr. Valley, you talked earlier about some
03:00 19 of the benefits of Invisalign and why you like using it
03:00 20 and the benefits of the iTero scanner. But the truth
03:00 21 is you've never tried any other brand of clear
03:00 22 aligners, correct?
03:00 23 A. That's correct.
03:00 24 Q. And prior to this litigation, the only
03:00 25 intraoral scanner that you had ever used was the iTero,

03:00 1 right?
03:00 2 A. That's correct.
03:00 3 Q. And, Dr. Valley, you talked a little bit about
03:00 4 the consulting that you've done. Align's paid you
03:00 5 quite a bit of money over the years to talk about its
03:00 6 products, right?
03:00 7 A. Can you clarify what you mean by "talk about
03:01 8 its products"?
03:01 9 Q. Well, you've served as an educational
03:01 10 consultant for Align, right?
03:01 11 A. I have.
03:01 12 Q. And you've done that since 2002, for about
03:01 13 25 years, right?
03:01 14 A. No.
03:01 15 Q. You've been -- you've served as an educational
03:01 16 consultant for Align since 2002, right?
03:01 17 A. My role as an educational consultant was in
03:01 18 the very beginning, and I -- it was over a period of
03:01 19 just a few years. I don't do educational consulting.
03:01 20 Q. Okay.
21 A. I haven't for a while.
03:01 22 Q. Fair enough, Dr. Valley.
03:01 23 But you served as an educational consultant
03:01 24 for Align beginning in 2002, right?
03:01 25 A. Yes.

03:01 1 Q. And you've also served as a speaker for Align,
03:01 2 right?
03:01 3 A. That's correct.
03:01 4 Q. And you served as an expert witness for Align
03:01 5 in approximately ten cases besides this one, right?
03:01 6 A. I've served for them on a few cases, yes, as
03:01 7 an expert witness.
03:01 8 Q. For ten cases, not including this one, right?
03:02 9 A. I'm not sure if it's ten. Something around
03:02 10 that. Eight, nine engagements approximately.
03:02 11 Q. And Align is the only manufacturer for whom
03:02 12 you've served in those roles, correct?
03:02 13 A. Can you repeat that question?
03:02 14 Q. Sure. Align is the only manufacturer for whom
03:02 15 you've served as an educational consultant, a speaker,
03:02 16 and an expert witness, right?
03:02 17 A. I don't know if we can count my role as an
03:02 18 associate professor in education. There's a lot of
03:02 19 courses I taught there too.
03:02 20 Q. The only manufacturer for whom you've served
03:02 21 as a consultant is Align, right?
03:02 22 A. I understand. You are correct. Yes.
03:02 23 Q. And that's the only company that you've served
03:02 24 as a speaker and an expert witness for as well, right?
03:02 25 A. Correct.

03:02 1 Q. And Align has paid you for serving in each of
03:02 2 those roles, right, Dr. Valley?
03:03 3 A. I'm sorry. I didn't hear.
03:03 4 Q. I'm sorry.
03:03 5 Align has paid you for serving in each of
03:03 6 those roles, correct?
03:03 7 A. Yes.
03:03 8 Q. Now, there's nothing wrong with a party paying
03:03 9 an expert for the time that they spent working on an
03:03 10 expert engagement, right?
03:03 11 A. I don't think so.
03:03 12 Q. But you have served in that role for Align on
03:03 13 11 cases, including this one, correct?
03:03 14 A. I don't know if it's specifically 11. I count
03:03 15 eight, maybe nine. It depends on how you count.
03:03 16 Q. Okay. Let's turn to your opinions on the '936
03:03 17 patent, Dr. Valley.
03:03 18 You testified during your direct testimony
03:03 19 that the '936 patent is directed to something called
03:03 20 the eraser tool; is that right?
03:03 21 A. That's right.
03:03 22 Q. And you heard Mr. Kopelman testify earlier
03:03 23 today, did you not?
03:03 24 A. I did.
03:03 25 Q. And you heard him say that the '936 patent is

03:03 1 not about intraoral scanning generally, correct?
03:03 2 A. I don't recall hearing that.
03:04 3 Q. He testified that the invention of the '936
03:04 4 patent is not intraoral scanning generally, right?
03:04 5 A. That correct.
03:04 6 Q. It's about a particular rescanning tool,
03:04 7 correct?
03:04 8 A. A particular workflow with the scanning
03:04 9 system.
03:04 10 Q. The eraser tool, as you described it?
03:04 11 A. That's -- that's the feature.
03:04 12 Q. Okay. And I think you said during your direct
03:04 13 testimony that you find that tool very useful, that you
03:04 14 use it all the time, right?
03:04 15 A. That is correct.
03:04 16 Q. And that -- that statement is based on your
03:04 17 personal use of the eraser tool, correct?
03:04 18 A. Yes.
03:04 19 Q. And to be clear, Dr. Valley, you yourself have
03:04 20 only used the iTero maybe 10 to 20 times to actually
03:04 21 scan a patient, right?
03:04 22 A. I would say that's incorrect.
03:04 23 Q. You yourself have probably used the iTero
03:04 24 scanner to scan a patient's teeth 10 to 20 times,
03:05 25 right?

03:05 1 A. May I explain?
03:05 2 Q. Dr. Valley, if you could just answer my
03:05 3 question. Your counsel can certainly ask you follow-up
03:05 4 questions afterwards.
03:05 5 A. Could you repeat the question?
03:05 6 Q. Yes.
03:05 7 You yourself have probably used the iTero
03:05 8 scanner to scan a patient's teeth 10 to 20 times,
03:05 9 right?
03:05 10 A. I have directly supervised the scanning of my
03:05 11 patients using the scanner.
03:05 12 Q. And I'm asking about your personal use, the
03:05 13 number of times that you personally have been the
03:05 14 individual doing the scanning.
03:05 15 That's only happened 10 to 20 times, right?
03:05 16 A. Yes.
03:05 17 Q. And you don't know the frequency with which
03:05 18 other doctors use the iTero eraser tool, right?
03:05 19 A. I'm not -- I run -- I don't work with other
03:06 20 orthodontists. So I can't answer that question.
03:06 21 MS. FERRERA: Okay. Let's pull up the
03:06 22 '936 patent, which is JTX-1. It should be Tab 5 in
03:06 23 your binder. And it's also Tab 3 in the juror
03:06 24 notebooks.
25 BY MS. FERRERA:

03:06 1 Q. And if we turn to Column 30, do you see
03:06 2 Claim 1? Just let me know when you're there.
03:06 3 A. I see it.
03:06 4 Q. And you told the jury that the Virtuo Vivo and
03:06 5 SIRIOS scanners infringe Claim 1 of the '936 patent,
03:06 6 right?
03:06 7 A. That's correct.
03:06 8 Q. And I just want to make sure we're all on the
03:06 9 same page about one thing, that the scanner that you
03:06 10 were demonstrating on with your counsel, that's the
03:06 11 iTero scanner, right, not the Virtuo Vivo or the
03:06 12 SIRIOS?
03:06 13 A. Yes. That is the iTero.
03:06 14 Q. Now, you understand that for infringement,
03:06 15 every single element of the claim must be found in the
03:07 16 accused product, right?
03:07 17 A. Correct.
03:07 18 Q. And if any one of those elements is missing,
03:07 19 then there's no infringement, correct?
03:07 20 A. That is correct.
03:07 21 Q. And so we can agree that the words of the
03:07 22 claim are very important, right?
03:07 23 A. They are very important.
03:07 24 Q. I want to talk about the replace limitation
03:07 25 that starts at about Line 44 of the claim, but I'd

03:07 1 actually like to show the same slide that you looked at
03:07 2 with the jury.
03:07 3 MS. FERRERA: If we could pull up
03:07 4 PDX-3.11, please.
5 BY MS. FERRERA:
03:07 6 Q. And this is the claim that -- the slide that
03:07 7 you showed when you were talking about the replace
03:07 8 limitation, right?
03:07 9 A. Yes.
03:07 10 Q. And you highlighted the first portion of that
03:07 11 claim that's -- ends at "received second scan data."
03:07 12 Do you see that?
03:07 13 A. I see that.
03:07 14 Q. Okay. You didn't highlight the second portion
03:07 15 of the claim, though, correct?
03:07 16 A. No, but it's still part of that requirement.
03:07 17 It's very important.
03:07 18 Q. It's very important, right?
03:08 19 A. Yes.
03:08 20 Q. And the second portion of the claim refers to:
03:08 21 Received second scan data of the patient's teeth
03:08 22 including surface data.
03:08 23 Do you see that?
03:08 24 A. I see that.
03:08 25 Q. And the Court did not construe that term,

03:08 1 "surface data," right?
03:08 2 A. I do not believe they did. No.
03:08 3 Q. So you understand that that term, "surface
03:08 4 data," must be analyzed from the perspective of a
03:08 5 person of ordinary skill in the art, right?
03:08 6 A. That is correct.
03:08 7 Q. And in forming your opinions in this case, you
03:08 8 gave a definition of what is a person of ordinary skill
03:08 9 in the art, right?
03:08 10 A. Are you referring to my opening report?
11 Q. Yes.
03:08 12 MS. FERRERA: And if we could pull up
03:08 13 DDX-2.
03:08 14 I'm sorry. I'm not sure if we could go
03:08 15 maybe one more slide.
16 There you go.
17 BY MS. FERRERA:
03:08 18 Q. This is the definition that you provided of a
03:09 19 person of ordinary skill in the art, right, Dr. Valley?
03:09 20 A. I'd have to read it.
03:09 21 Q. I'll represent that this is an excerpt from
03:09 22 your opening report, Dr. Valley, Paragraph 18.
03:09 23 A. Okay. Then, yes. This is my definition of a
03:09 24 person of ordinary skill in the art.
03:09 25 Q. Right. And you agree that under your

03:09 1 definition, you are not a person of ordinary skill in
03:09 2 the art on your own, right?
03:09 3 A. I am an optional member of an
03:09 4 interdisciplinary team.
03:09 5 Q. But you are not a person of ordinary skill in
03:09 6 the art on your own; you'd need to consult with
03:09 7 somebody else, right?
03:09 8 A. That is correct.
03:09 9 MS. FERRERA: So let's go back, if we
03:09 10 could, to Slide PDX-3.11, which is the replace
03:09 11 limitation from Claim 1.
12 BY MS. FERRERA:
03:09 13 Q. And we talked about the term "surface data,"
03:09 14 right, Dr. Valley?
03:09 15 A. Yes.
03:09 16 Q. And it's true, is it not, that prior to being
03:09 17 retained as an expert in this case, you didn't know
03:10 18 what "surface data" meant, right?
03:10 19 A. That is incorrect.
03:10 20 Q. Prior to being retained as an expert in this
03:10 21 case, you had never heard the term "surface data,"
03:10 22 right?
03:10 23 A. I have heard the term "surface data." It
03:10 24 could be debatable. I think the term may be used in
03:10 25 various fields.

03:10 1 Q. Dr. Valley, we met at your deposition earlier
03:10 2 this year, right?
03:10 3 A. Yes.
03:10 4 Q. Okay. And at that deposition, I asked you
03:10 5 questions and you gave answers, right?
03:10 6 A. That's correct.
03:10 7 Q. And your answers were under oath, the same
03:10 8 oath that you took here today, correct?
03:10 9 A. Correct.
03:10 10 Q. And you had a chance to review the transcript
03:10 11 and make changes to it if you wanted to, right?
03:10 12 A. Correct.
03:10 13 Q. And you did that?
03:10 14 A. Correct.
03:10 15 Q. Could you turn in the binder that you were
03:10 16 given, Tab 3, to your deposition? And if you could
03:10 17 turn to Page 117, starting at Line 20.
03:11 18 A. Tab 3?
03:11 19 Q. Should be Tab 3. Let me know if it's not.
03:11 20 Does that look like your deposition
03:11 21 transcript?
03:11 22 A. It is.
03:11 23 Q. Okay. And if you could turn to Page 117,
03:11 24 starting at Line 20.
03:11 25 A. Okay.

03:11 1 Q. I asked you the question: Prior to being
03:11 2 retained as an expert in this case, you had heard the
03:11 3 term "surface data"?
03:11 4 Do you see that question?
03:11 5 A. I see it.
03:11 6 Q. And your answer was: No.
03:11 7 Do you see that?
03:11 8 A. That's correct.
03:11 9 Q. And that's the answer I asked -- the question
03:11 10 I asked and the answer you gave under oath?
03:11 11 MS. DURIE: Your Honor, I object. The
03:11 12 question and the answer continues through 118, Line --
03:11 13 THE COURT: I think what you're
03:11 14 suggesting is under the rule of optional completeness,
03:11 15 you'd like the jury to see the rest of that?
03:11 16 MS. DURIE: I would, Your Honor. Thank
03:11 17 you.
03:11 18 THE COURT: Okay. You're free to go
03:11 19 ahead and finish that.
03:11 20 Counsel, no. Let -- if you would go
03:12 21 ahead and let the jury see what's in the next, say,
03:12 22 five or six lines.
03:12 23 MS. FERRERA: Certainly, Your Honor.
24 BY MS. FERRERA:
03:12 25 Q. So your answer was no. And then you said:

03:12 1 Well, it's a general term more so than point cloud
03:12 2 data. Maybe I have, but as it relates to this patent,
03:12 3 I can't say for sure.
03:12 4 That was your answer, right?
03:12 5 A. Correct.
03:12 6 THE COURT: And if you'd read the next
03:12 7 question as well.
03:12 8 MS. FERRERA: Sure.
9 BY MS. FERRERA:
03:12 10 Q. Sitting here today, you don't recall having
03:12 11 heard the terms, either "point cloud data" or "surface
03:12 12 data," prior to becoming retained in this case as an
03:12 13 expert, right?
03:12 14 And your answer was: I guess I'll say that's
03:12 15 correct.
03:12 16 THE COURT: Is that enough of the
03:12 17 deposition?
03:12 18 MS. DURIE: It is. Thank you,
03:12 19 Your Honor.
03:12 20 THE COURT: Okay.
03:12 21 A. In my deposition, that's what I said. But now
03:12 22 it's becoming more --
03:12 23 THE COURT: Ma'am, there's no question.
03:12 24 BY MS. FERRERA:
03:12 25 Q. Now, Dr. Valley, I just have a couple more

03:12 1 questions.
03:12 2 You understand that ClearCorrect has an
03:12 3 expert, Dr. Balakrishnan, who's also going to address
03:13 4 the '936 patent?
03:13 5 A. Yes. I understand that.
03:13 6 Q. And Dr. Balakrishnan is a person of ordinary
03:13 7 skill in the art under your definition, right?
03:13 8 A. That's correct.
03:13 9 Q. And if Dr. Balakrishnan were to testify that
03:13 10 second scan data used by the Virtuo Vivo and SIRIOS is
03:13 11 not surface data, you wouldn't -- you'd have no basis
03:13 12 to disagree with him, right?
03:13 13 A. I'm not sure how to answer that question
03:13 14 without being able to explain.
03:13 15 Q. And we can agree that the jury should wait for
03:13 16 the opportunity to hear Dr. Balakrishnan before making
03:13 17 a decision on infringement, right?
03:13 18 A. Yes. Of course.
03:13 19 Q. And if the jury were to agree with
03:13 20 Dr. Balakrishnan that the replace limitation is not
03:13 21 met, then there would be no infringement, correct?
03:13 22 A. I -- I would leave that to the jury and the
23 Court.
03:14 24 MS. FERRERA: I pass the witness.
03:14 25 MS. DURIE: Thank you.

03:14 1 REDIRECT EXAMINATION
03:14 2 BY MS. DURIE:
03:14 3 Q. Dr. Valley, just a couple more questions.
03:14 4 How long have you been prescribing Invisalign?
03:14 5 A. I was one of the very first orthodontists in
03:14 6 the world to do the Invisalign system. I was fortunate
03:14 7 to be kind of at the epicenter of when this all came to
03:14 8 be.
03:14 9 Q. And why do you prescribe Invisalign to your
03:14 10 patients today when they come in and they want a clear
03:14 11 aligner?
03:14 12 A. I have choices. I feel Invisalign gives me
03:14 13 the confidence that I can deliver that quality of care
03:14 14 that I want for my patients.
03:14 15 MS. DURIE: Thank you. No further
03:14 16 questions.
03:14 17 MS. FERRERA: Nothing further,
03:14 18 Your Honor.
03:14 19 THE COURT: Thank you, ma'am.
03:14 20 MS. DURIE: May the witness be excused?
03:14 21 THE COURT: Yes, ma'am.
03:14 22 MR. NASH: Your Honor, plaintiff calls
03:15 23 Dr. Karan Singh.
03:15 24 (The witness was sworn.)
03:15 25 DIRECT EXAMINATION

03:15 1 BY MR. NASH:
03:16 2 Q. Good afternoon, Dr. Singh.
03:16 3 A. Good afternoon, sir.
03:16 4 Q. Could you please introduce yourself to the
03:16 5 jury?
03:16 6 A. Hi. My name is Karan Singh. I'm a professor
03:16 7 of computer science at the University of Toronto.
03:16 8 Q. Can you adjust the microphone so it's a little
03:16 9 bit closer?
03:16 10 A. I can sit closer to it.
03:16 11 Q. That's perfect.
03:16 12 Can you tell the jury a little bit about your
03:16 13 education and your work experience?
03:16 14 A. Sure. So I have a few computer science
03:16 15 degrees including a Ph.D. from Ohio State in 1995. I
03:16 16 then spent seven years in industry writing computer
03:16 17 software before starting as a professor.
03:16 18 At the university, I do research. I teach
03:16 19 classes in computer graphics. And I also actively
03:16 20 consult in industry in the areas of design, film, and
03:17 21 games.
03:17 22 Q. How does your work in film and games relate to
03:17 23 your testimony today?
03:17 24 A. Well, the technology, graphics technology in
03:17 25 modern film and games shares the same concepts of 3D

03:17 1 scans and models and user interaction that are aspects
03:17 2 of the '936 patent in this case.
03:17 3 Q. Have you worked on any of those projects that
03:17 4 you're particularly proud of?
03:17 5 A. Over the years, yes, a few. One certainly
03:17 6 would be a 3D modeling animation system called Maya
03:17 7 back in the late '90s. Maya won a Technical Oscar in
03:17 8 2003, and it's still an industry standard.
03:17 9 And then more recently, I was part of a team
03:17 10 that developed a facial animation system based on
03:17 11 scans, 3D scans of actors for the film Avatar: The Way
03:18 12 of Water.
03:18 13 MR. NASH: Your Honor, at this time, we
03:18 14 offer Dr. Singh as an expert in computer science and
03:18 15 computer graphics.
03:18 16 MS. FERRERA: No objection.
03:18 17 THE COURT: He'll be admitted.
03:18 18 BY MR. NASH:
03:18 19 Q. Now, Dr. Singh, I think to start, how would a
03:18 20 computer science perspective help the jury understand
03:18 21 the '936 patent?
03:18 22 A. Well, the '936 patent describes how scanner
03:18 23 software should operate relevant to its claims. And as
03:18 24 a computer scientist, I believe I'm here to help
03:18 25 explain to the jury how that software operates under

03:18 1 the hood.
03:18 2 Q. Well, do you have slides for your testimony
03:18 3 today?
03:18 4 A. I do.
03:18 5 Q. You mentioned Avatar.
03:18 6 MR. NASH: So let's bring up PDX-5.1.
03:18 7 There we go.
8 BY MR. NASH:
03:18 9 Q. Now, can you explain to the jury, how are
03:18 10 digital models created?
03:18 11 A. Well, as Mr. Kopelman actually explained in
03:19 12 his testimony, scanners usually use light reflecting
03:19 13 off objects to gather a number of three-dimensional
03:19 14 points on the surface of the object. Those points
03:19 15 together can be called a point cloud, and that's a
03:19 16 digital model. It's a 3D model that's in the computer
03:19 17 of the physical object surface.
03:19 18 MR. NASH: Well, let's turn to PDX-5.2.
19 BY MR. NASH:
03:19 20 Q. And how does what you just described about
03:19 21 digital models apply in the context of teeth?
03:19 22 A. So I've tried to make it seem simpler over
03:19 23 here. There's a two-dimensional illustration for the
03:19 24 purposes of clarity. And you see in gray the physical
03:19 25 surface of a physical tooth, and overlaid on that you

03:19 1 see actually three different digital model
03:19 2 representations.
03:19 3 So there's a number of points shown in black.
03:20 4 That's a point cloud. And these points can be
03:20 5 connected with polygons and called a mesh. That's
03:20 6 shown in red. These points can also be structured into
03:20 7 building blocks along a grid, and that's shown in
03:20 8 green.
03:20 9 Q. And do all three of these types of models that
03:20 10 you described represent the surface of the tooth in
03:20 11 this example?
03:20 12 A. Absolutely. They are all 3 -- 3D digital
03:20 13 models of the physical surface of the tooth.
03:20 14 Q. Now, are all three required to model the
03:20 15 surface of the tooth?
03:20 16 A. Not necessarily. It depends on the
03:20 17 application. Any one can serve as a digital model, or
03:20 18 some applications use more than one concurrently.
03:20 19 Q. Now, is that understanding consistent with the
03:20 20 '936 patent?
03:20 21 A. Absolutely. The '936 patent's specification
03:20 22 explicitly says that the 3D -- virtual model of the 3D
03:21 23 digital model can be any 3D representation.
03:21 24 Q. Can you describe to the jury what is -- what
03:21 25 is a patent specification?

03:21 1 A. A patent specification is the text before the
03:21 2 claims. The text, the figures, all the information on
03:21 3 the patent before you get to the claim language that
03:21 4 clarifies the inventions.
03:21 5 MR. NASH: Let's go to PDX-5.3.
6 BY MR. NASH:
03:21 7 Q. And we can use that point cloud example that
03:21 8 you mentioned earlier.
03:21 9 What else do you need to consider when you're
03:21 10 creating a model, a digital model?
03:21 11 A. Well, you want a model that is appropriate for
03:21 12 your application. So if you're working in the context
03:21 13 of high-precision orthodontistry, for instance, you
03:21 14 would need a really high-resolution model. And I've
03:21 15 shown that by a high-resolution scan of points in this
03:21 16 case.
03:21 17 Q. Well, we've heard a lot about removing or
03:22 18 erasing some data. So let's go to PDX-5.4, and we'll
03:22 19 remove some of that data.
03:22 20 What does that do to the model?
03:22 21 A. Well, it leaves some of it behind. And you
03:22 22 can call that a retained portion of a model or the
03:22 23 retained model.
03:22 24 Q. Now, what if we wanted to add data, like new
03:22 25 data to that retained portion of the model?

03:22 1 A. Sure. So if you want to add new data, you
03:22 2 need to acquire the new data typically with a scanner.
03:22 3 And then you take that new data, and you need to match
03:22 4 it with what exists. So you need to align it. And
03:22 5 then you need to insert it into that model or combine
03:22 6 it. So align and combine essentially is what you need
03:22 7 to do.
03:22 8 Q. I see.
03:22 9 MR. NASH: Well, let's turn to PDX-5.5.
10 BY MR. NASH:
03:22 11 Q. And I want to talk to you about the '936
03:22 12 patent now, Dr. Singh.
03:22 13 Are you here to provide an expert opinion on
03:22 14 infringement of the '936 patent?
03:23 15 A. I am.
03:23 16 Q. And what do you understand the accused devices
03:23 17 to be?
03:23 18 A. Well, the accused devices are up here on the
03:23 19 screen. They're the SIRIOS X3, the SIRIOS 200E, and
03:23 20 the Virtuo Vivo scanners.
03:23 21 Q. Now, as a computer scientist, what steps do
03:23 22 you take to analyze whether those accused devices
03:23 23 infringe the '936 patent?
03:23 24 A. Well, from a high level, I would say three
03:23 25 steps. First, I would analyze the '936 patent itself.

03:23 1 I analyze its specification, its claims, to figure out
03:23 2 what the claimed inventions, how they expect the
03:23 3 accused products to operate.
03:23 4 Next, I analyze accused products and how they
03:23 5 operate. And in this context I relied on conversations
03:23 6 with Dr. Valley, viewing -- reviewing videos,
03:23 7 instruction manuals, other material. And most
03:23 8 importantly, I looked under the hood of the software.
03:24 9 In other words, I analyzed the source code of the
03:24 10 software.
03:24 11 And then finally, as a third step, I saw
03:24 12 whether the source code matched the claim requirements
03:24 13 that was listed in the claim of the '936 patent.
03:24 14 Q. Well, Dr. Singh, I think you mentioned the
03:24 15 word "source code." Can you explain to the jury what
03:24 16 is source code?
03:24 17 A. Sure. Sorry. Yes.
03:24 18 So source code at a very high level is a set
03:24 19 of human readable instructions that computer
03:24 20 programmers write essentially to create software. And
03:24 21 basically it's how the software does what it does.
03:24 22 Q. Now, did you review source code for the Virtuo
03:24 23 Vivo devices?
03:24 24 A. I did.
03:24 25 Q. And what about for the SIRIOS devices?

03:24 1 A. I did as well.
03:24 2 Q. Okay. Let's look at the claim requirements
03:24 3 that you mentioned.
03:24 4 Now, did you review the accused devices with
03:25 5 respect to each of the claim requirements here?
03:25 6 A. I did.
03:25 7 Q. I see you've highlighted the replace
03:25 8 requirement there towards the bottom.
03:25 9 Do you understand the Court to have provided a
03:25 10 definition for that term?
03:25 11 A. I do.
03:25 12 Q. Okay.
03:25 13 MR. NASH: Let's go to the next slide.
14 BY MR. NASH:
03:25 15 Q. And is this definition we see here, register
03:25 16 the received second scan data in blue with a retained
03:25 17 portion of model after removing the scan data of the
03:25 18 removed surface portion, which you've highlighted in
03:25 19 green, do you understand that to be the Court's
03:25 20 construction?
03:25 21 A. I do.
03:25 22 Q. And that last part's a little much. Do you
03:25 23 mind if I just call that the retained portion of the
03:25 24 definition?
03:25 25 A. Sure.

03:25 1 Q. Okay. Did you use this definition in your
03:25 2 analysis of the accused devices?
03:25 3 A. I certainly did.
03:25 4 Q. Well, before we get into your analysis, I just
03:25 5 wanted to ask, what's the point of this definition?
03:25 6 A. Well, the point of the definition is really
03:25 7 something that we've actually seen Mr. Kopelman,
03:26 8 Dr. Valley talk about, and as I also just mentioned,
03:26 9 you have a model, a portion of it is removed. What's
03:26 10 left is the retained portion. And then you get some
03:26 11 new data, and you align it and combine it. In other
03:26 12 words, you register it with the model. So that's what
03:26 13 this claim element requires.
03:26 14 Q. And, Dr. Singh, what conclusion, if any, did
03:26 15 you reach on whether the accused devices meet the
03:26 16 requirements of this definition?
03:26 17 A. I concluded that the software of each of these
03:26 18 devices meets that definition.
03:26 19 Q. Okay.
03:26 20 MR. NASH: Your Honor, at this time, I
03:26 21 believe we need to go on to the sealed record. We're
03:26 22 going to be looking at source code.
03:26 23 And can we turn off the gallery monitor?
03:26 24 THE COURT: Why don't we do this: Why
03:26 25 don't we take our afternoon recess, and we can get

03:26 1 coordinated on the -- to take care of those issues.
03:27 2 MR. NASH: Yes, Your Honor.
03:27 3 THE COURT: Ladies and gentlemen of the
03:27 4 jury, we're about to take our afternoon recess. Let me
03:27 5 go ahead before we break, though, and quickly tell you
03:27 6 that what you're about to hear in the case is
03:27 7 information that one side or the other has provided
03:27 8 with the understanding that it would not be made
03:27 9 public, that it would be in the courtroom, but only the
03:27 10 lawyers and the people who are associated with the
03:27 11 companies and you, the jurors, would get to hear it.
03:27 12 So at the end of the trial, I just want
03:27 13 you to know I'm going to instruct you that you cannot
03:27 14 reveal any of the information that you're about to hear
03:27 15 while it's under the sealed section of -- I found it's
03:27 16 better to tell you before you start hearing it than
03:27 17 tell you afterwards and hope you remember what was
03:27 18 what, so.
03:27 19 With that limitation I just gave, we will
03:27 20 stand in recess for the next 15 minutes.
03:27 21 THE BAILIFF: All rise.
03:27 22 (Jury exited the courtroom.)
03:27 23 THE COURT: You may be seated.
03:28 24 Doctor, you may step down. You can sit
03:28 25 there if you'd like, but you're also free to step down.

03:28 1 Mr. Nash, is there anything we need to
03:28 2 take up?
03:28 3 I thought we had an issue that you all
03:28 4 had with a later witness.
03:28 5 MR. NASH: Your Honor, we were planning
03:28 6 to handle the source code, and I believe we reached
03:28 7 agreement with the other side by just turning off the
03:28 8 gallery monitor here, which we've done.
03:28 9 And then we'll be displaying it on the
03:28 10 ELMO a page at a time, and we'll ask Dr. Singh a few
03:28 11 questions about it. So there will be a demonstrative
03:28 12 the jurors will see, and then they'll, of course, see
03:28 13 the ELMO.
03:28 14 THE COURT: So what is you all's
03:28 15 understanding, before we get to the point, of what the
03:28 16 jury will actually have in terms of the source code as
03:28 17 an exhibit? Is it going to be an exhibit? Is it going
03:28 18 to only be a demonstrative which they're not going to
03:29 19 have? What is -- Mr. Nash, let's start with -- I don't
03:29 20 care. I just -- we need to know now what you both
03:29 21 think we're doing before we get to the jury
03:29 22 deliberations.
03:29 23 MS. FERRERA: Well, I'm not sure if
03:29 24 Mr. Nash is actually planning on offering it as an
03:29 25 exhibit. I guess that's --

03:29 1 MR. NASH: We are, Your Honor. It's a
03:29 2 three-page excerpt.
03:29 3 MS. FERRERA: We have no objection to it
03:29 4 being provided to the jury, obviously, with
03:29 5 Your Honor's instructions that it's highly confidential
03:29 6 and --
03:29 7 THE COURT: Sure. And to make clear,
03:29 8 they will not be getting the source code. They'll be
03:29 9 getting whatever you all's representation is of the
03:29 10 source code that the doctor is going to be talking
03:29 11 about.
03:29 12 And the way -- if things go according to
03:29 13 the way I think they're going to go, and hopefully what
03:29 14 you all, is the only source code or copies of source
03:29 15 code that the jury is going to get to deliberate with
03:29 16 is something that an expert actually discussed.
03:30 17 And so when -- if and when I get an
03:30 18 inevitable note back from the jury about we don't have
03:30 19 something we thought we saw at trial and I respond, too
03:30 20 bad, keep deliberating, I just want to make sure you
03:30 21 all understand what it is that they're going to get
03:30 22 because -- and if you do, that's fine.
03:30 23 Any questions about how we're going to do
03:30 24 it?
03:30 25 MS. FERRERA: Not from us, Your Honor.

03:30 1 The jury's obviously not going to understand a piece of
03:30 2 what's written on that piece of paper. So I think --
03:30 3 THE COURT: You know, I had a lawyer say
03:30 4 just that in closing argument. You know, we could have
03:30 5 put source code on, but we figured why bother. You all
03:30 6 wouldn't understand it. And the foreperson had a
03:30 7 master's in computer science. Maybe the lawyer just
03:30 8 wasn't there during voir dire. But he told me
03:30 9 afterwards he was a little offended by that.
03:30 10 MS. FERRERA: Fair enough.
03:30 11 THE COURT: So never be too sure what the
03:30 12 jury will or won't understand, I've learned. So okay.
03:30 13 We'll be back in 15 minutes.
03:31 14 THE BAILIFF: All rise.
03:31 15 (Recess taken.)
03:49 16 THE BAILIFF: All rise.
03:49 17 THE COURT: Please remain standing for
03:50 18 the jury.
03:50 19 (Jury entered the courtroom.)
03:50 20 MR. HUNG: Your Honor, can we address the
03:50 21 issue with respect to the two exhibits --
03:50 22 THE COURT: I thought -- no. We're going
03:50 23 to go ahead and go.
03:50 24 (Jury entered the courtroom.)
03:50 25 THE COURT: Thank you. You may be

1 seated.

03:50 2 MR. NASH: To confirm, Your Honor, I

03:50 3 believe we're on the sealed record now.

03:50 4 (Sealed proceedings.)

03:50 5 THE [redacted]

03:50 6 [redacted]

03:50 7 [redacted]

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03:50 10 [redacted]

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09:42 7 (Sealed proceedings end.)
03:56 8 MR. NASH: Thank you very much for your
03:56 9 time, Dr. Singh.
03:56 10 I pass the witness.
03:56 11 CROSS-EXAMINATION
03:56 12 BY MS. FERRERA:
03:57 13 Q. Good afternoon, Dr. Singh.
03:57 14 A. Good afternoon.
03:57 15 Q. You were here for Dr. Valley's testimony a
03:57 16 moment ago, were you not, Dr. Singh?
03:57 17 A. I was.
03:57 18 Q. And you heard her acknowledge that she is not
03:57 19 a person of ordinary skill in the art on her own,
03:57 20 right? She needed to consult with somebody with your
03:57 21 expertise, correct?
03:57 22 A. Yes. She used my perspective as a computer
03:57 23 scientist.
03:57 24 Q. And you consider yourself to be a person of
03:57 25 ordinary skill in the art, right, Dr. Singh?

03:57 1 A. Yes. With the main expertise as needed from
03:57 2 an orthodontist.
03:57 3 Q. Right. Because you don't have a degree in
03:58 4 orthodontics or dentistry, correct?
03:58 5 A. I do not.
03:58 6 Q. And that's okay because the '936 patent is
03:58 7 about 3D modeling, right?
03:58 8 A. 3D modeling in the context of orthodontistry.
03:58 9 Q. Now, to be clear, with the '936 patent, Align
03:58 10 does not claim to have invented dental scanning in
03:58 11 general, right?
03:58 12 A. Align claims to have invented certain aspects
03:58 13 and work flows within the realm of orthodontistry.
03:58 14 Q. Right. But dental scanning existed before the
03:58 15 '936 patent, right?
03:58 16 A. In a completely general and -- general sense,
03:58 17 yes.
03:58 18 Q. Right. And rescanning existed before the '936
03:58 19 patent as well, right?
03:58 20 A. In a very general sense.
03:58 21 Q. And so in your view, it's the very specific
03:58 22 workflow that's described in the claims that is the
03:58 23 claimed invention of the '936 patent, right?
03:58 24 A. It always is for any -- any patent.
03:59 25 Q. And so the specific words that are used in the

03:59 1 claim are very important, right?
03:59 2 A. In the context of the patent specification.
03:59 3 Q. Sure. Now, as someone knowledgeable about 3D
03:59 4 modeling, you agree that there are different types of
03:59 5 scan data, right?
03:59 6 A. There are different types of 3D digital data
03:59 7 in general, yes.
03:59 8 Q. Okay. And point cloud data is one type of
03:59 9 scan data, correct?
03:59 10 A. Yes.
03:59 11 Q. And surface data is another type of scan data,
03:59 12 right?
03:59 13 A. Not true. There is no such word as "surface
03:59 14 data" by itself. It has to be described in a context.
03:59 15 Q. Surface data is a type of scan data in the
03:59 16 context of the '936 patent, right?
03:59 17 A. Surface data is data that carries
03:59 18 information --
03:59 19 THE COURT: Doctor, Doctor.
03:59 20 THE WITNESS: Sorry. Excuse me.
03:59 21 THE COURT: Answer her question.
03:59 22 THE WITNESS: Okay. I'll -- I'll do my
03:59 23 best. Thank you.
03:59 24 BY MS. FERRERA:
03:59 25 Q. Right. So my question was surface data is one

04:00 1 type of scan data in the context of the '936 patent,
04:00 2 right?
04:00 3 A. It is the scan data in the context of the '936
04:00 4 patent, yes.
04:00 5 Q. And you agree that not all scan data is
04:00 6 surface data, correct?
04:00 7 A. I will not agree.
04:00 8 Q. You agree that in a very general context,
04:00 9 scan -- not all scan data is surface data, right?
04:00 10 A. That's -- I just testified to the contrary. I
04:00 11 just explained that when --
04:00 12 THE COURT: I'll take that as a no.
04:00 13 A. No. Sorry.
04:00 14 BY MS. FERRERA:
04:00 15 Q. Well, Dr. Singh, you gave a deposition in this
04:00 16 case.
04:00 17 Do you recall that?
04:00 18 A. I do.
04:00 19 Q. And you were under oath at the time of your
04:00 20 deposition, correct?
04:00 21 A. Yes.
04:00 22 Q. Same oath that you gave here today?
04:00 23 A. Yes.
04:00 24 Q. And one of my colleagues asked you some
04:00 25 questions, correct?

04:00 1 A. Yes.
04:00 2 Q. And you gave answers to those questions,
04:00 3 right?
04:00 4 A. Yes.
04:00 5 Q. Could you turn in the binder that we put up
04:01 6 there for you to Tab 4?
04:01 7 A. To which one?
04:01 8 Q. Tab 4.
04:01 9 A. Tab 4.
04:01 10 Q. Let me know when you get there.
04:01 11 A. Yes.
04:01 12 Q. And if you turn to Page 268. Starting at
04:01 13 Line 22.
04:01 14 Do you see that? 268.
04:01 15 A. I'm probably not in the right place.
04:01 16 MS. FERRERA: May I approach?
04:01 17 A. It seems to stop at 254.
04:01 18 BY MS. FERRERA:
04:01 19 Q. Let's see. Are you on Tab --
04:01 20 A. Oh, I was on Tab 3.
04:01 21 Q. Tab 4, it should be.
04:02 22 And it's on the -- we can put it on the screen
04:02 23 as well if that helps.
04:02 24 A. That's fine. I got it. Yes.
04:02 25 Q. Are you there, Doctor?

04:02 1 A. Yeah.
04:02 2 Q. And if you go down to Line 22 on Page 268.
04:02 3 A. Uh-huh.
04:02 4 Q. And do you see you were asked the question:
04:02 5 Do you agree not all scan data is surface data?
04:02 6 Do you see that question?
04:02 7 A. On Line 23?
04:02 8 Q. 22. And it's on the screen as well,
04:02 9 Dr. Singh.
04:02 10 A. Yes.
04:02 11 Q. You were asked: Do you agree not all scan
04:02 12 data is surface data?
04:02 13 A. Yes.
04:02 14 Q. And your answer was: In a very general
04:02 15 context, yes, I agree.
04:02 16 Do you see that?
04:02 17 A. That's right. In the context that is broader
04:02 18 than the '936 patent.
04:02 19 Q. And that's -- that was my question.
04:02 20 Now, let's turn to PDX-4.6, which I think is
04:02 21 one of the slides you looked at with your counsel.
04:03 22 This is Claim 1 of the '936 patent, right?
04:03 23 A. Yes.
04:03 24 Q. And you understand that for infringement,
04:03 25 every single element of the claim has to be met, right?

04:03 1 A. Yes.
04:03 2 Q. And if any one element is missing, then
04:03 3 there's no infringement, right?
04:03 4 A. Yes.
04:03 5 Q. Now, let's look at the replace limitation
04:03 6 which you have highlighted on your slide.
04:03 7 Do you see that?
04:03 8 A. Yes.
04:03 9 Q. And you highlighted just the first portion of
04:03 10 that limitation ending with the words "received second
04:03 11 scan data."
04:03 12 Do you see that?
04:03 13 A. Yes.
04:03 14 Q. You didn't highlight the rest of the claim,
04:03 15 right, or the claim limitation?
04:03 16 A. Yes.
04:03 17 Q. And in your direct testimony, you didn't talk
04:03 18 about the second portion of the claim limitation, did
04:03 19 you, Dr. Singh?
04:03 20 A. I did analyze it.
04:03 21 Q. You didn't give any opinion about the second
04:03 22 portion of the claim limitation during your direct
04:03 23 testimony, did you?
04:03 24 A. I did not.
04:03 25 Q. In fact, the only person in this case who's

04:04 1 going to talk about that second portion of the
04:04 2 limitation is ClearCorrect's expert, Dr. Balakrishnan,
04:04 3 right?
04:04 4 A. I'm not sure what Dr. Balakrishnan is going to
04:04 5 talk about, but I have provided opinions to the entire
04:04 6 portion.
04:04 7 Q. You didn't give any of that testimony here to
04:04 8 the jury today, right, with respect to the second
04:04 9 portion of the limitation?
04:04 10 A. I actually did.
04:04 11 Q. During your direct testimony, the only portion
04:04 12 of the claim that you talked about and discussed with
04:04 13 the jury was the part that's highlighted on the screen,
04:04 14 right?
04:04 15 A. Right. But I --
04:04 16 Q. That's --
04:04 17 THE COURT: Doctor.
04:04 18 BY MS. FERRERA:
04:04 19 Q. That was my question, Dr. Singh.
04:04 20 And you know that Dr. Balakrishnan has given
04:04 21 an opinion about the second portion of the limitation,
04:04 22 right?
04:04 23 A. Yes.
04:04 24 Q. And he's going to come and testify later in
04:04 25 this case, right? And so the jury will need to wait to

04:04 1 hear his testimony about that second portion before
04:04 2 reaching a decision on infringement, correct?
04:04 3 A. Sure.
04:04 4 MS. FERRERA: No further questions. Pass
04:05 5 the witness.
04:05 6 MR. NASH: Can we pull up PDX-4.6? And
04:05 7 can we zoom in on the entirety of the replace
04:05 8 requirement there at the bottom, all the way to the
04:05 9 word "and"?
04:05 10 There you go.
04:05 11 REDIRECT EXAMINATION
04:05 12 BY MR. NASH:
04:05 13 Q. Dr. Singh?
04:05 14 A. Yes.
04:05 15 Q. What opinion, if any, do you have on whether
04:06 16 the received second scan data includes surface data of
04:06 17 a physically changed portion of the patient's intraoral
04:06 18 cavity?
04:06 19 A. It is my opinion that that entire phrase is --
04:06 20 is met. The second scan data that we've been talking
04:06 21 about, that have been shown prior by Dr. Valley with
04:06 22 toothpaste on there, with -- by in conversation with
04:06 23 Mr. Kopelman, refers to a physically changed portion
04:06 24 that is being rescanned.
04:06 25 So there's -- you had a surface there before.

04:06 1 Now there's a different surface. And so all this
04:06 2 portion in red is saying is that in that second scan,
04:06 3 you can't just scan something that existed before. You
04:06 4 must include in that some portions of a surface that
04:07 5 has actually physically changed on the surface of the
04:07 6 tooth.
04:07 7 That's all that portion in red is saying, and
04:07 8 that is something that I have opined on in my report.
04:07 9 THE COURT: Yes, ma'am.
04:07 10 MS. FERRERA: May we approach,
04:07 11 Your Honor? I have an objection.
04:07 12 THE COURT: Sure.
04:07 13 (Bench conference.)
04:07 14 MS. FERRERA: Your Honor, Dr. Singh is
04:07 15 giving testimony now that was not in his expert report.
04:07 16 He did not give any opinion about what the meaning of
04:07 17 surface data in the claim is.
04:07 18 THE COURT: Mr. Nash, where is it in his
04:07 19 report?
04:07 20 MR. NASH: He's -- Your Honor, it's -- I
04:07 21 believe Paragraphs 41, 42.
04:07 22 THE COURT: Okay. Let's -- you have his
04:07 23 report?
04:07 24 MS. FERRERA: I do.
04:07 25 THE COURT: Look up 41 and 42.

04:08 1 MS. FERRERA: 441?
2 MR. NASH: 441.
04:08 3 MS. FERRERA: I think it's 441.
04:08 4 MR. NASH: 442. And that's also in the
04:08 5 context of this Paragraph 470, which incorporates that
04:08 6 by reference, Your Honor.
04:08 7 THE COURT: Okay. So 440, 441.
04:08 8 MS. FERRERA: He does not give any
04:08 9 opinion --
04:08 10 THE COURT: Have you looked at that?
04:08 11 MS. FERRERA: Yes. He does not give any
04:08 12 opinion in those paragraphs about what surface data
04:08 13 means. He did not give any opinion about what the
04:08 14 plain and ordinary meaning of surface data is. We
04:08 15 asked him in his deposition whether he had given an
04:08 16 opinion about the plain and ordinary meaning of surface
04:08 17 data.
04:08 18 THE COURT: May I see those?
04:08 19 MR. NASH: Your Honor, if I may, it
04:08 20 sounds like counsel is trying to contend that he should
04:08 21 have offered some claim construction when Your Honor
04:08 22 did not provide a claim construction; in fact, said
04:08 23 it's the plain and ordinary meaning. He's applying the
04:08 24 plain and ordinary meaning to that terminology.
04:08 25 Sorry, Your Honor.

04:09 1 THE COURT: Okay. In 441, just about
04:10 2 halfway down on this page, I would say one -- there's
04:10 3 one reference here that says: CanBeMatchedTo [lines
04:10 4 2172-2177] (is the surface area of the voxels available
04:10 5 for matching is greater than a threshold).
04:10 6 But I don't see where there's any opinion
04:10 7 offered about that.
04:10 8 So where -- Mr. Nash, where are you
04:10 9 saying he offered the opinion that you've just had him
04:10 10 offer?
04:10 11 MR. NASH: Yes, Your Honor. That's
04:10 12 exactly what he's offering is -- so 470 as well. 441,
04:10 13 445, 470.
04:10 14 THE COURT: But where in here? Highlight
04:10 15 in pink for me the part of the paragraph you think is
04:10 16 relevant.
04:11 17 MR. NASH: It's also coming from
04:11 18 Paragraph 469, Your Honor. He discusses taking the
04:12 19 point cloud and converting it into a 3D mesh, and it's
04:12 20 incorporating by reference those prior paragraphs.
04:12 21 And as he's testified to, this point
04:12 22 clouds and the mesh that derives from that constitutes
04:12 23 surface data.
04:12 24 THE COURT: Okay. I see in 464 where he
04:12 25 says: I understand the Court construed "replace at

04:12 1 least a portion of the removed surface portion of the
04:12 2 model," and it goes on. Is that part of what you're
04:12 3 asking about?
04:12 4 MR. NASH: That's right, Your Honor.
04:12 5 THE COURT: And what is your --
04:12 6 MR. NASH: That's the construction he
04:12 7 applied.
04:12 8 MS. FERRERA: Your Honor, what counsel is
04:12 9 asking him now is whether or not what he's described is
04:12 10 surface data, and he's asking him to explain what the
04:12 11 meaning of surface data is.
04:13 12 MR. NASH: No. Actually, Your Honor --
04:13 13 MS. FERRERA: Your Honor, he
04:13 14 specifically -- the witness is testifying that "surface
04:13 15 data" refers to the physical surface of the tooth, and
04:13 16 that's not in his report.
04:13 17 THE COURT: You -- the way you asked your
04:13 18 questions on cross, on the one hand, you did just
04:13 19 say -- you didn't say anything here about it, but you
04:13 20 did not only cross him but impeach him about surface
04:13 21 data. And I think Mr. Nash -- you opened the door to
04:13 22 Mr. Nash trying to have the expert explain what this
04:13 23 issue is about surface data and whether what he did was
04:13 24 right.
04:13 25 I'll let you take him on cross afterwards

04:13 1 about this, including whether or not you thought it was
04:13 2 adequately in his report or whether he can show where
04:13 3 it is.
04:13 4 MS. FERRERA: Thank you, Your Honor.
04:13 5 (Bench conference concludes.)
04:13 6 MR. NASH: Pass the witness, Your Honor.
04:14 7 MS. FERRERA: No further questions,
04:14 8 Your Honor.
04:14 9 THE COURT: Thank you, Doctor.
04:14 10 May he be excused?
04:14 11 MR. NASH: Yes, if Your Honor allows it.
04:14 12 THE COURT: I will.
04:14 13 And if -- if there's an issue I need to
04:14 14 take up outside of the jury's presence before the next
04:14 15 witness, I'm happy to take it up at the bench.
04:14 16 MR. NASH: Thank you, Your Honor.
04:14 17 (Bench conference.)
04:14 18 MR. HUNG: Should I go first?
04:14 19 THE COURT: Whoever's -- whatever the
04:14 20 issue is, I'm happy to take it up.
04:14 21 MR. HUNG: So, Your Honor, there's two
04:14 22 exhibits that relate to something called Zendura VIVA,
04:15 23 and the issue is that we accused Zendura FLX. This is
04:15 24 a materials patent case. It's about what these things
04:15 25 are made of.

04:15 1 And they -- the VIVA's made of the same
04:15 2 materials. On literally December 23rd, 2025, right
04:15 3 before the close of fact discovery, they served a rog
04:15 4 response where they said, VIVA's a noninfringing
5 alternative.
04:15 6 We said, this is crazy. It's the same
04:15 7 material.
04:15 8 So when our expert, Reitman, gave her
04:15 9 report, she said, this makes no sense. It's the same
04:15 10 material. It's not noninfringing.
04:15 11 They're now saying, no, no. You can't
04:15 12 offer that opinion because she can't -- she can't offer
04:15 13 this opinion because she never accused it. It's the
04:15 14 same material.
04:15 15 MR. MUELLER: I'm not following.
04:15 16 THE COURT: You don't want them to ask
04:15 17 about --
04:15 18 MR. HUNG: They don't want me to ask
04:15 19 about it.
04:15 20 THE COURT: About it being noninfringing?
04:15 21 MR. HUNG: They don't want me to ask
04:15 22 about VIVA.
04:15 23 THE COURT: Are you going to --
04:15 24 Mr. Mueller, are you going to argue that it is
04:15 25 noninfringing?

04:15 1 MR. MUELLER: No. No. That was --
2 (Simultaneous conversation.)
3 MR. HUNG: They were arguing --
04:16 4 THE COURT: He just said it's not an
04:16 5 accused product --
04:16 6 (Clarification by Reporter.)
04:16 7 THE COURT: What is it you are worried
04:16 8 about that they're going to put on that's relevant?
04:16 9 MR. HUNG: They are going to say that
04:16 10 VIVA is noninfringing. And they literally submitted a
04:16 11 rog response where they said that.
04:16 12 THE COURT: It's noninfringing or a
04:16 13 noninfringing alternative?
04:16 14 MR. HUNG: Noninfringing alternative.
04:16 15 THE COURT: Okay. And Mr. Mueller just
04:16 16 said that he won't do that.
04:16 17 MR. HUNG: Okay. So we're fine not
04:16 18 discussing it. And for simplicity, we're not going to
04:16 19 change the slides. We just won't ask about it, okay?
04:16 20 MR. MUELLER: I'm not sure about that,
04:16 21 Your Honor. Here's the -- the issue is this: The
04:16 22 issue is it's now being treated as an accused product
04:16 23 by Align. It's not. And I have the infringement
04:16 24 contentions right here. The final infringement
04:16 25 contentions list the accused product as Zendura FLX.

04:16 1 We're not going to make this
04:16 2 noninfringing alternative argument.
04:16 3 THE COURT: They're going to say they
04:16 4 accuse this and they're not accusing it?
04:17 5 MR. MUELLER: This is the only one that's
04:17 6 accused is FLX. And so the thing should be about FLX.
04:17 7 THE COURT: So what's your problem with
04:17 8 that?
04:17 9 MR. HUNG: We'll leave it alone.
04:17 10 MR. MUELLER: Thank you, Your Honor.
04:17 11 MR. HUNG: But I'm not going to change
04:17 12 the exhibit.
04:17 13 MR. MUELLER: I don't know what that
04:17 14 means.
04:17 15 MR. HUNG: I'm not going to redact the
04:17 16 exhibit.
04:17 17 MR. MUELLER: Your Honor, I'm not sure
04:17 18 what this means.
04:17 19 THE COURT: I have no idea.
04:17 20 (Bench conference concludes.)
04:17 21 MR. HUNG: All right. Your Honor, we
04:17 22 call Dr. Chunhua Li.
04:17 23 (The witness was sworn.)
04:18 24 DIRECT EXAMINATION
04:18 25 BY MR. HUNG:

04:18 1 Q. Dr. Li, good afternoon.
04:18 2 A. Good afternoon.
04:18 3 Q. Can you please introduce yourself to the jury?
04:18 4 A. I'm Chunhua Li. I'm the vice president of
04:18 5 material research and development at Align Technology.
04:18 6 Q. How long have you worked at Align, ma'am?
04:18 7 A. 23 years, since 2003.
04:18 8 Q. And can you help us all and can you pull
04:18 9 yourself a little bit closer to the mic?
04:18 10 A. Here?
04:18 11 Q. Thank you.
04:18 12 What do you do for Align?
04:18 13 A. I oversee materials research and development
04:18 14 work at Align, including Invisalign aligner materials.
04:18 15 Q. Before we dig into your time at Align, let's
04:18 16 talk about your background, okay?
04:18 17 Where did you go to school?
04:18 18 A. I went to school in China, Shanghai, China. I
04:19 19 got my bachelor degree and Ph.D. in polymer engineering
04:19 20 from Donghua University, Shanghai, China.
04:19 21 Q. How did you end up in the United States?
04:19 22 A. My husband came here for his Ph.D. study in
04:19 23 1990. I joined him. We become U.S. citizen in 1999.
04:19 24 Q. Where -- where did you work before Align,
04:19 25 ma'am?

04:19 1 A. I started out at Stanford University as a
04:19 2 research assistant at -- it's a department of chemical
04:19 3 engineering. Then I work for several medical device
04:19 4 companies in California, including Abbott.
04:19 5 Q. What did you do for those companies?
04:19 6 A. All my work involved polymers, polymers for
04:19 7 drug delivery, like a estrogen patch or nicotine patch
04:19 8 or polymers for catheter for heart.
04:19 9 Q. Dr. Li, can we step away from your
04:19 10 professional background and talk about you personally?
04:20 11 Can you tell the jury about your family?
04:20 12 A. Yes. I've been married to my husband for
04:20 13 37 years. My husband used to work for Lockheed Martin
04:20 14 as an engineer on the antimissile defense industry as
04:20 15 an engineer. And he worked there for almost 20 years.
04:20 16 Then, he now is a full-time elder at the local
04:20 17 Christian church.
04:20 18 Q. And do you have children, ma'am?
04:20 19 A. We have three daughters. They all born and
04:20 20 raised in California. One lives and works close by as
04:20 21 a product designer. Two are nurses in New York City.
04:20 22 Q. All right. Dr. Li, let's talk about Align.
04:20 23 How did you come to join Align in 2003?
04:20 24 A. Align recruited me from Abbott.
04:20 25 Q. And what are your first memories of working at

04:20 1 Align in 2003?
04:20 2 A. It's a very small start-up of -- with
04:20 3 cutting-edge technology. So we are working on
04:21 4 something very exciting, something have never done
04:21 5 before using clear plastic to move teeth.
04:21 6 Q. When you joined Align, what was the clear
04:21 7 plastic that Align was using?
04:21 8 A. A material called EX30. EX30's made of
04:21 9 Isoplast. It's a thermoplastic polyurethane, a
04:21 10 single-layer one.
04:21 11 Q. Was it any good?
04:21 12 A. Yes or no. Actually, it's the best material
04:21 13 at that time but was -- have some issues on stress
04:21 14 relaxation. What that means is the force kept
04:21 15 decreasing over time.
04:21 16 Q. Why is force decreasing over time a problem?
04:21 17 A. The principle for treatment is gentle constant
04:21 18 force so the tooth can move predictably. If you have
04:21 19 the force keep decreasing, that means that your
04:21 20 treatment might take longer.
04:21 21 Q. Did you understand, Dr. Li, as a polymer
04:21 22 scientist, why EX30 had this problem?
04:21 23 A. Yes. My Ph.D. dissertation actually was on
04:22 24 TPUs. EX30 is a TPU.
04:22 25 Q. And do you have any personal experience as to

04:22 1 why EX30 had this problem?
04:22 2 A. Yeah. Actually, I did the Invisalign
04:22 3 treatment was in EX30 aligners. When I first wear the
04:22 4 aligner was so stiff, so much force, and then I
04:22 5 realized I have a hard time to remove that aligner.
04:22 6 But afterwards, the force just decreases really
04:22 7 quickly, and a few days later, I don't feel anything
04:22 8 anymore. So I really want to improve that material.
04:22 9 Q. And did you solve that problem?
04:22 10 A. Yes. After a lot of studies and the
04:22 11 development work and the experiments, at the end we
04:22 12 introduced SmartTrack.
04:22 13 Q. All right. Dr. Li, let's pause there.
04:22 14 Tell the jury at a high level, what is
04:22 15 SmartTrack?
04:22 16 A. SmartTrack is a new aligner, multi-layer
04:22 17 aligner material developed at Align.
04:22 18 Q. When you joined in 2003, had Align already
04:23 19 been thinking about multi-layer aligners?
04:23 20 A. Yes. My predecessor Loc Phan actually even
04:23 21 apply a patent in 1998 on this idea of a multi-layer,
04:23 22 but it's not enough.
04:23 23 Q. Can you look in your binder at an exhibit,
04:23 24 DTX-616, and let me know if you recognize that.
04:23 25 A. Yes. That's Loc Phan's patent.

04:23 1 MR. HUNG: I'd like to offer this into
04:23 2 evidence.
04:23 3 MR. MUELLER: No objection, Your Honor.
04:23 4 THE COURT: Admitted.
04:23 5 BY MR. HUNG:
04:23 6 Q. All right. Let's see if we can pull this up.
04:23 7 Okay. So here's the patent, and let's call
04:23 8 out the date.
04:23 9 Dr. Li, when was this filed?
04:23 10 A. November 30, 1998.
04:23 11 Q. And now looking at Mr. Phan's patent, let's
04:23 12 look at Figure 4. What is this showing?
04:23 13 A. Here, you can see several layers of aligner
04:23 14 material with dark and the white colors.
04:24 15 Q. And now looking at Columns 8 and 9 of this
04:24 16 patent, you'll see a discussion of Example 2. What is
04:24 17 the 1998 patent showing?
04:24 18 A. Here, it has four layers. It was
04:24 19 polycarbonate -- PVCs or polycarbonate. You can see
04:24 20 the polycarbonate is a hard layer, and the PVC is the
04:24 21 softer ones here.
04:24 22 Q. Did Align release a multi-layer aligner before
04:24 23 you started working on SmartTrack?
04:24 24 A. No. EX30's relatively new for Align at that
04:24 25 time. So we continue our focus to really try to

04:24 1 improve EX30 material.
04:24 2 Q. Okay. Go back. When do you recall the
04:24 3 SmartTrack project officially kicking off?
04:24 4 A. It officially kick off in 2004 when I come
04:24 5 back from my maternity leave actually. So I was asked
04:24 6 to lead that project to really looking for a better
04:24 7 material to replace EX30.
04:24 8 Q. Okay. Can you turn in your binder to PTX-901?
04:24 9 And let me know if you recognize that.
04:24 10 A. Yes. That's my 2004 lab notebook.
04:25 11 MR. HUNG: I'd like to offer this.
04:25 12 MR. MUELLER: No objection, Your Honor.
04:25 13 THE COURT: It's admitted.
04:25 14 BY MR. HUNG:
04:25 15 Q. This is the cover, and let's go to a page --
04:25 16 and it's the second page. Let's highlight "Idea."
04:25 17 Do you recognize this idea and can you explain
04:25 18 it?
04:25 19 A. Yes. Actually, this is my early brainstorming
04:25 20 ideas about how to make a multi-layer aligner material.
04:25 21 And you can see here I'm talking about code TPU
04:25 22 elastomer polycarbonate. So the TPU layer would give
04:25 23 the flexibility and comfort and durability.
04:25 24 Q. What did you do after this February 2004
04:25 25 entry?

04:25 1 A. After this, my team and I set out to really
04:25 2 developing and search for the next generation of
04:25 3 aligner material. After eight years, we keep doing
04:25 4 material after material, development work, and try to
04:26 5 put that layers together and put different type of
04:26 6 material together. That's how we come to SmartTrack.
04:26 7 Q. Let's show the jury a little bit of this. In
04:26 8 your binder is JTX-77. It's a spreadsheet that's
04:26 9 printed.
04:26 10 Let me know if you recognize that.
04:26 11 A. Yes. This is a spreadsheet my coworker Yan
04:26 12 Chen put together to summarize all the testing we did
04:26 13 on all different type of materials that we tested.
04:26 14 MR. HUNG: I'd like to offer this.
04:26 15 MR. MUELLER: No objection, Your Honor.
04:26 16 THE COURT: Admitted.
04:26 17 BY MR. HUNG:
04:26 18 Q. All right. If you could talk about the sheet,
04:26 19 and I'm going to pull up the tabs at the bottom. And
04:26 20 using those, can you talk about the test that you ran?
04:26 21 A. Yeah. Actually, if you look at the sheet, it
04:26 22 has a lot of tabs underneath there. It's a durability,
04:26 23 tensile, stress relaxation, working range. Every one
04:26 24 of them actually means a certain type of test we did on
04:26 25 that material.

04:26 1 We have to develop the material, put them
04:26 2 together, become a sheet. Then we do testing, perform
04:26 3 all different type of testing on the material.
04:26 4 Q. Okay. Let's look at a couple of these. Let's
04:27 5 look at the tensile tab, and let's pull up the end of
04:27 6 this.
04:27 7 And can you tell the jury what -- how many
04:27 8 tensile test tabs you ran?
04:27 9 A. Tensile testing means that you pull the
04:27 10 material, and then you look at how strong the material
04:27 11 is and at what point the material will break.
04:27 12 And here, if you look at this sheet, we tested
04:27 13 more than 640 samples. A lot of testing.
04:27 14 Q. Let's look at another tab. Let's look at --
04:27 15 let's look at stress relaxation.
04:27 16 And how many tests did you run here?
04:27 17 A. Here, you can see we did more than 300 tests
04:27 18 on the stress relaxation.
04:27 19 Q. Okay. Another exhibit, another spreadsheet
04:27 20 printed. Look at JTX-79 in your binder, and let me
04:27 21 know if you recognize that. 79.
04:27 22 A. Yes. So this is a sheet that my coworker Yan
04:27 23 Chen summarized all the different materials. We put --
04:27 24 we did develop together. Also, those are the 269
04:28 25 samples we're really focused on.

04:28 1 MR. HUNG: I'd like to offer this.
04:28 2 MR. MUELLER: No objection, Your Honor.
04:28 3 THE COURT: Admitted.
04:28 4 BY MR. HUNG:
04:28 5 Q. Okay. Let's look at this sheet, and let's
04:28 6 pull out the 269.
04:28 7 Does this confirm the samples that you worked
04:28 8 on, ma'am, or focused on?
04:28 9 A. Yes. Actually, those are 269 samples that --
04:28 10 which including single layers, softer layers, hard
04:28 11 layers, single-layer material, dual-layer material,
04:28 12 soft/hard, different combinations and then -- and also
04:28 13 different combination of three layers together. We put
04:28 14 all different things in combinations too. So this is
04:28 15 269 samples.
04:28 16 Q. Okay. Let's show the jury. Okay? Let's show
04:28 17 them some of this. Let's look at Rows Eastman#43 and
04:28 18 44.
04:28 19 What are those?
04:28 20 A. Yeah. If you look at those two samples,
04:28 21 actually they have A and B. That means it's two
04:28 22 layers. This is a two-layer configuration. And Tritan
04:28 23 is a co-hard layer. And then EMAC, that's the
04:29 24 copolyester elastomer. So it's a softer layer. So
04:29 25 that's a hard/soft combination.

04:29 1 And the second one, it's 190 (sic). Actually,
04:29 2 it's a hard polymer with Tritan again and also a TPU
04:29 3 elastomer.
04:29 4 Q. All right. Let's show a couple more. Let's
04:29 5 look at entries 184 and 185.
04:29 6 What are Eastman#38 and 39?
04:29 7 A. Yeah. Those two are the hard-soft-hard, three
04:29 8 layers material, and those both are the hard-soft-hard
04:29 9 combination.
04:29 10 Q. All right. Let's look at another one. Let's
04:29 11 look at Bayer#16, and then we'll follow that with 34
04:29 12 and 34 again.
04:29 13 What's Bayer#16?
04:29 14 A. Bayer#16 is -- you can see it's another three
04:29 15 layers configuration. This one is soft-hard-soft
04:29 16 configuration. And Bayer#16 actually used to be our
04:29 17 favorite. And then Nos. 34 and -- the 33 line and 34
04:30 18 line is eventually what come into SmartTrack.
04:30 19 Q. All right. Let's talk about your first
04:30 20 favorite, okay?
04:30 21 Can you look at PTX-1873. It should be the
04:30 22 next exhibit in your binder.
04:30 23 And let me know if you recognize that.
04:30 24 A. Yes. I can see that's a presentation I did on
04:30 25 the SmartTrack aligner material in 2009.

04:30 1 MR. HUNG: All right. I'd like to offer
04:30 2 this.
04:30 3 MR. MUELLER: No objection, Your Honor.
04:30 4 THE COURT: Admitted.
04:30 5 BY MR. HUNG:
04:30 6 Q. All right. You see it says "Gen III." What
04:30 7 is Gen III?
04:30 8 A. That's an internal code name for SmartTrack.
04:30 9 Because we had eight years spend on develop SmartTrack,
04:30 10 so we have lot of code name, internal code name for
04:30 11 SmartTrack at different times, time frame.
04:30 12 So this is one of the internal code names for
04:30 13 SmartTrack.
04:30 14 Q. All right. Let's look at Page 2, and let's
04:30 15 blow this out.
04:30 16 What are we looking at here?
04:31 17 A. Here, I'm giving the configuration of the
04:31 18 SmartTrack. Actually, you can see here we talk about
04:31 19 the two softer layers outside with the TPU elastomers,
04:31 20 and the inside layer, the hard layer, is the Tritan
04:31 21 copolyester.
04:31 22 Q. Actually, Dr. Li, as of this date, is this
04:31 23 Bayer#16 or is this SmartTrack?
04:31 24 A. This is Bayer#16.
04:31 25 Q. Okay. Let's look at the third page. Okay?

04:31 1 Confirming Bayer#16, what do we see?
04:31 2 A. Here, we're doing comparison between EX30 and
04:31 3 the Bayer#16. You can see actually Bayer#16 looks
04:31 4 really good, have a lot of green color. That means
04:31 5 it's really meet our performance requirement. Slightly
04:31 6 lower in cycles for durability. So except that test.
04:31 7 Q. What does "durability" mean?
04:31 8 A. Durability -- so for aligners, because these
04:31 9 are removable, so you do insertion, removal every day
04:31 10 when you try to brush your teeth and then eat meals.
04:32 11 So the durability measures how many cycles you
04:32 12 can do that before it cracks or deforms. So that's the
04:32 13 durability definition.
04:32 14 Q. Okay. You said this was pretty good. Why
04:32 15 didn't you stay with this?
04:32 16 A. Pretty good is not good enough for us. At
04:32 17 that time we really wanted to come up with a best
04:32 18 material for Invisalign aligners.
04:32 19 Q. All right. Let's -- we'll dig into exactly
04:32 20 what SmartTrack is in a second.
04:32 21 But at a high level, what are the two
04:32 22 materials?
04:32 23 A. The two material is the -- a hard copolyester
04:32 24 layer, was the -- was the Tritan copolyester, and then
04:32 25 also a soft TPU layer was Desmopan for SmartTrack.

04:32 1 Q. In your binder is PTX-405. And let me know if
04:32 2 you recognize that data sheet.
04:32 3 A. Yes. I recognize this as a Desmopan technical
04:32 4 data sheet.
04:32 5 MR. HUNG: I'd like to offer this.
04:33 6 MR. MUELLER: No objection.
04:33 7 THE COURT: Admitted.
04:33 8 MR. HUNG: And, Your Honor, we'll be
04:33 9 going on to the sealed record for this.
04:33 10 (Sealed proceedings.)
04:33 11 BY MR. HUNG:
04:33 12 Q. [redacted]
04:33 13 [redacted]
04:33 14 [redacted]
04:33 15 [redacted]
04:33 16 [redacted]
04:33 17 [redacted]
04:33 18 [redacted]
04:33 19 [redacted]
04:33 20 [redacted]
04:33 21 [redacted]
04:33 22 [redacted]
04:33 23 [redacted]
04:33 24 [redacted]
04:33 25 [redacted]

04:33 1 [redacted]
04:33 2 [redacted]
04:33 3 MR. HUNG: I'd like to offer this.
04:33 4 MR. MUELLER: No objection, Your Honor.
04:33 5 THE COURT: Admitted.
04:33 6 BY MR. HUNG:
04:33 7 Q. [redacted]
04:33 8 [redacted]
04:34 9 [redacted]
04:34 10 [redacted]
04:34 11 [redacted]
04:34 12 [redacted]
04:34 13 [redacted]
04:34 14 [redacted]
04:34 15 [redacted]
04:34 16 [redacted]
04:34 17 [redacted]
04:34 18 [redacted]
04:34 19 [redacted]
04:34 20 MR. HUNG: All right. We can go back on
04:34 21 the public record.
09:42 22 (Sealed proceedings end.)
04:34 23 BY MR. HUNG:
04:34 24 Q. All right. Let's look at another exhibit in
04:34 25 your binder, PTX-1874.

04:34 1 A. Yes.
04:34 2 Q. Do you recognize this?
04:34 3 A. Yes. That's another SmartTrack presentation I
04:34 4 did in 2011.
04:34 5 MR. HUNG: I'd like to offer this.
04:34 6 MR. MUELLER: No objection, Your Honor.
04:34 7 THE COURT: Admitted.
04:34 8 BY MR. HUNG:
04:34 9 Q. All right. Let's look at this presentation.
04:34 10 And first for the jury, what is LE-30?
04:35 11 A. Another internal code name for SmartTrack.
04:35 12 Q. All right.
04:35 13 MR. HUNG: Let's look at the next slide
04:35 14 and let's blow this up.
15 BY MR. HUNG:
04:35 16 Q. What did you find out about SmartTrack's
04:35 17 performance?
04:35 18 A. Here, actually I summarized the -- of the
04:35 19 advantages of SmartTrack. You can see we talk about
04:35 20 initial insertion force is lower and better stress
04:35 21 relaxation and longer working range. All around it's
04:35 22 better than EX30.
04:35 23 Q. Okay. Let's look at stress relaxation, okay?
04:35 24 MR. HUNG: Let's go to next page, and
04:35 25 let's blow this up.

BY MR. HUNG:

04:35 Q. What do we see about stress relaxation for
04:35 SmartTrack compared to the old one, EX30?
04:35 A. Yeah. Actually what we did on this testing is
04:35 we make EX30 aligner. We also make a SmartTrack
04:35 aligner. So we put on a test setup to really monitor
04:35 the force applied to the tooth over five days' time.
04:35 So you can see with EX30, actually at Day 5,
04:36 you only have 10 percent force left. While SmartTrack,
04:36 you had more than 50 percent force left. So this is a
04:36 very huge improvement.
04:36 MR. HUNG: Okay. Let's look at the next
04:36 slide.

BY MR. HUNG:

04:36 Q. This is referring to a pilot study, a pilot
04:36 launch.
04:36 And can you explain the pilot launch?
04:36 A. Yeah. Because the bench on the laboratory
04:36 testing, we can see SmartTrack performs so well, we
04:36 really want to see in patient's mouth in clinical
04:36 settings, are they still perform as well as what we saw
04:36 in lab? So we really set up to do more than 1,000
04:36 patients study, have real patients who wear this for
04:36 treatment. That's the studies. We launch a study in
04:36 May 16, 2011.

04:36 1 MR. HUNG: Okay. Let's go to Slide 14.
2 BY MR. HUNG:
04:36 3 Q. And let's -- TREX, it's in reference to TREX.
04:36 4 What is TREX?
04:36 5 A. Another internal code name for SmartTrack.
04:36 6 Q. Okay. And what is this slide showing about
04:37 7 upper extrusion for SmartTrack?
04:37 8 A. I told you about the pilot study with the
04:37 9 1,000 patients. So after like 20 weeks' treatment, we
04:37 10 got some scans back. Then we do analysis on those
04:37 11 scans to see how the SmartTrack aligners really did the
04:37 12 treatment.
04:37 13 So here, this graph shows for upper teeth.
04:37 14 That means that your front teeth here, when they do
04:37 15 extrusion, pull the tooth a little bit out to align
04:37 16 them, you can see the SmartTrack aligner performs so
04:37 17 much better than EX30 aligner. So if you look at Tooth
04:37 18 No. 7 and Tooth No. 10, and you can see actually
04:37 19 absolutely numbers. We're talking about 40 percent
04:37 20 improvement. That's huge.
04:37 21 Q. All right. What did you find for rotation?
04:37 22 A. Rotations, that means you turn the tooth a
04:37 23 little bit to align them to be in the better position.
04:38 24 And here, you also see the SmartTrack aligner
04:38 25 performed, improved definitely compared to EX30

04:38 1 aligners.

04:38 2 Q. Okay. There's another exhibit in your binder,

04:38 3 an announcement, PX-1875.

04:38 4 Do you recognize that?

04:38 5 A. Yeah. Actually, this is SmartTrack's

04:38 6 announcement, when we launched SmartTrack.

04:38 7 MR. HUNG: I'd like to offer it.

04:38 8 MR. MUELLER: No objection.

04:38 9 THE COURT: Admitted.

04:38 10 BY MR. HUNG:

04:38 11 Q. All right. Now I can show you -- or I can

04:38 12 show the jury.

04:38 13 Okay. What is this?

04:38 14 A. Well, this is a picture of SmartTrack

04:38 15 aligners, and also we mentioned that even in our

04:38 16 initial launch, we said over the past eight years, our

04:38 17 research and development program have been working

04:38 18 tirelessly to develop SmartTrack.

04:38 19 Q. Now, ma'am, go back in time.

04:38 20 When did you release SmartTrack?

04:38 21 A. We announced that to -- in October 2012 and

04:39 22 delivered to our customers -- it was SmartTrack

04:39 23 aligners in January 2013.

04:39 24 Q. Dr. Li, let's switch to the patents. How many

04:39 25 do you have?

04:39 1 A. I have more than 100 patents with 10 -- more
04:39 2 than 10 for SmartTrack alone.
04:39 3 Q. Are you personally involved with obtaining
04:39 4 patents before the Patent Office?
04:39 5 A. A little bit. From time to time, my patent
04:39 6 attorney will come to me with documents to review and
04:39 7 sign.
04:39 8 Q. Okay. Look in your binder at DTX-72. And let
04:39 9 me know if you recognize that patent.
04:39 10 A. Yes.
04:39 11 MR. HUNG: We'd like to offer it.
04:39 12 MR. MUELLER: Your Honor, just maybe ask
04:39 13 a bit more foundation.
04:39 14 MR. HUNG: Oh, sure.
15 BY MR. HUNG:
04:39 16 Q. What patent is this, DTX-72?
04:39 17 A. That's our first SmartTrack patent.
04:39 18 MR. MUELLER: No objection.
04:39 19 THE COURT: Admitted.
04:39 20 BY MR. HUNG:
04:39 21 Q. All right. Let's look at it.
04:39 22 And let's -- okay. When did you file for this
04:40 23 patent, ma'am?
04:40 24 A. May 14, 2012.
04:40 25 Q. And if you look on this patent, you'll see

04:40 1 inventors, yourself, Yan Chen, and all these other
04:40 2 people.
04:40 3 Who are all those other people?
04:40 4 A. Heinz, Klaus, Joerg, and the Craig are people
04:40 5 from Covestro. They used to be called Bayer. And we
04:40 6 work with them. So they are our current SmartTrack
04:40 7 supplier.
04:40 8 Q. Now, now you get to dig in a little bit.
04:40 9 Can you explain to the jury what you invented
04:40 10 in these patents -- in this patent?
04:40 11 A. We invented a very specific recipe to combine
04:40 12 a copolyester with certain modulus, and modulus has to
04:40 13 be more than 150,000 PSI. And then also a TPU
04:40 14 elastomer with elongation break more than 200 percent,
04:40 15 and the hardness has to be between 60A to 85D. And the
04:40 16 material, you put them together, a layer, different
04:41 17 layer configurations. Actually, you can get to
04:41 18 material that perform as aligner material really well,
04:41 19 not neither material alone can do.
04:41 20 Q. What does this combination help treat? Why is
04:41 21 this good for patients?
04:41 22 A. The co-layer, actually the hard layer of
04:41 23 copolyester, really deliver the force, gentle constant
04:41 24 force to really control tooth movement. And while the
04:41 25 TPU elastomer layer give you the flexibility,

04:41 1 durability to make sure you have that longer working
04:41 2 range too.
04:41 3 Q. Does this help you treat harder cases?
04:41 4 A. Yes. Actually, SmartTrack -- since
04:41 5 SmartTrack's launch, we can treat much more complex
04:41 6 cases.
04:41 7 Q. All right. Please turn in your binder to
04:41 8 DTX-462, a declaration.
04:41 9 Let me know if you recognize that.
04:41 10 A. Yes. I recognize this.
04:41 11 MR. HUNG: I'd like to offer this.
04:41 12 MR. MUELLER: No objection, Your Honor.
13 BY MR. HUNG:
04:42 14 Q. Okay. Dr. Li, here's a declaration. And why
04:42 15 did you submit this declaration to the U.S. Patent
04:42 16 Office?
04:42 17 A. The Patent Office rejected our application,
04:42 18 and the -- I submitted this declaration to expand our
04:42 19 invention to the Patent Office.
04:42 20 Q. Was this declaration for the patent that we
04:42 21 just looked at?
04:42 22 A. Yes.
04:42 23 Q. And let's look at the second page of this
04:42 24 declaration. And you'll see there's a reference to
04:42 25 Chen and DeSimone.

04:42 1 Who are they?
04:42 2 A. Chen is my coworker, Yan Chen. And DeSimone
04:42 3 referred to Joe DeSimone, who used to be Align
04:42 4 consultant.
04:42 5 Q. Why are you talking about your coworkers or
04:42 6 Align employees in this declaration?
04:42 7 A. The Patent Office rejected our application --
04:42 8 patent application because he saw that the -- our
04:42 9 patent invention was obviously in view of things Yan or
04:42 10 Joe has done for aligners.
04:42 11 And I just want to explain to the Patent
04:43 12 Office that I have been working with Yan and Joe all
04:43 13 the time on the development work. So I want to tell
04:43 14 the Patent Office that our invention's something really
04:43 15 different.
04:43 16 Q. All right. In your binder of four patents,
04:43 17 jump to it, they're the material patents. You could
04:43 18 take a look and see if you recognize those, JTX-2, 3,
04:43 19 4, 5.
04:43 20 A. Yes.
04:43 21 MR. HUNG: I'd like to offer the four
04:43 22 patents.
04:43 23 MR. MUELLER: No objection, Your Honor.
04:43 24 THE COURT: Admitted.
04:43 25 BY MR. HUNG:

04:43 1 Q. All right. Let's put these up, and let's pull
04:43 2 out the S&E.
04:43 3 Dr. Li, what are these four patents?
04:43 4 A. Those are additional patent we received base
04:43 5 on the 2012 SmartTrack patent applications.
04:43 6 Q. Who owns these?
04:43 7 A. Align does.
04:43 8 Q. All right. Let's look in your binder at
04:43 9 DTX-84, another declaration there.
04:43 10 Do you recognize that?
04:43 11 A. Yes.
04:44 12 Q. What is this?
04:44 13 A. This is another declaration I submitted to the
04:44 14 Patent Office.
04:44 15 Q. Did you submit it for the '613 patent?
04:44 16 A. Yes.
04:44 17 MR. HUNG: I'd like to offer this.
04:44 18 MR. MUELLER: No objection, Your Honor.
04:44 19 THE COURT: Admitted.
04:44 20 BY MR. HUNG:
04:44 21 Q. All right. Dr. Li, is this the same
04:44 22 declaration you submitted earlier?
04:44 23 A. No. Different one.
04:44 24 Q. Why?
04:44 25 A. Because the Patent Office still reject my

04:44 1 applications for the '613 patent. So we submit this
04:44 2 again to explain to the -- to the Patent Office about
04:44 3 the invention. And this is actually declaration for
04:44 4 the different applications with -- '613 applications.
04:44 5 It was different type of claims, so we tailor this
04:44 6 declaration towards that application.
04:44 7 Q. I'm going to point to a statement, Dr. Li, and
04:44 8 I'm going to read it to you. This is from Paragraph 4.
04:44 9 It states: I would expect that the presence of only
04:44 10 two such layers, a hard and soft polymer layer -- a
04:45 11 hard polymer layer and a soft polymer layer, according
04:45 12 to the current claims, would also provide beneficial
04:45 13 and surprisingly superior properties of elongation,
04:45 14 time stress-relaxation, durability, and thermoform
04:45 15 ability.
04:45 16 Was that true?
04:45 17 A. Yes. Like what I mentioned, the key to
04:45 18 SmartTrack is the -- you have a hard copolyester layer
04:45 19 to deliver that gentle constant force. Then you have a
04:45 20 elastomer, TPU elastomer to give you that flexibility
04:45 21 and durability. The two in combination actually
04:45 22 provide the material that's better than EX30.
04:45 23 Q. Were you saying that all multi-layer materials
04:45 24 that you invented have to have all these properties of
04:45 25 elongation, time stress-relaxation, durability, and

04:45 1 thermoform ability?
04:45 2 A. No. That's not what I'm saying. I'm talking
04:45 3 balance of the property. If you remember, when we talk
04:45 4 about Bayer#16, that was one of our favorite.
04:46 5 Actually, the durability was not as good as EX30. So
04:46 6 we normally look at aligner material, look at the
04:46 7 overall balance of property.
04:46 8 Q. I expect that we will hear at some point an
04:46 9 allegation that you misrepresented yourself, Dr. Li.
04:46 10 Did you tell the truth in this declaration?
04:46 11 A. Absolutely.
04:46 12 Q. Do you stand by every word today?
04:46 13 A. Yes.
04:46 14 Q. One last question on the patent process. I
04:46 15 suspect this will come up.
04:46 16 We looked at those two huge sheets, those
04:46 17 sheets that you and Ms. Chen worked on. Why didn't you
04:46 18 submit those to the Patent Office?
04:46 19 A. I don't think it's relevant. I have never
04:46 20 submitted raw data sheets like that to the Patent
04:46 21 Office for my other applications.
04:46 22 Q. All right. Dr. Li, let's change topics to a
04:46 23 company called Bay Materials. Okay?
04:46 24 Do you know a company called Bay Materials?
04:46 25 A. Yes. I know them since I joined Align in

04:46 1 2003.
04:46 2 Q. When you joined, what did you know about them?
04:47 3 A. They were our middleman for EX30. So my
04:47 4 predecessor Loc hired Ray Stewart as a consultant for
04:47 5 Align to develop and select EX30 material. Then later
04:47 6 on they take that material. They want to be the
04:47 7 middleman to handle the purchasing of that material.
04:47 8 So they don't manufacture that material. So they get
04:47 9 somebody make -- to make that material. They do
04:47 10 quality check. Then they resell that to Align.
04:47 11 Q. Is Align still working with Bay Materials?
04:47 12 A. No. We ended the relationship in 2006.
04:47 13 Q. Why?
04:47 14 A. They have some supply chain issues. They also
04:47 15 have quality control issues, that they also charge us
04:47 16 huge markup with that just quality check. So we went
04:47 17 to a more reliable direct manufacturer of the EX30
04:47 18 material.
04:47 19 Q. Do you know what Bay Materials did after the
04:47 20 relationship ended?
04:47 21 A. They call -- EX30 become their Zendura A.
04:48 22 Then they sell that material to our competitors and
04:48 23 dental labs.
04:48 24 Q. All right. Dr. Li, at some point, you learned
04:48 25 that Bay Materials had released a new product called

04:48 1 Zendura FLX, right?
04:48 2 A. Yes.
04:48 3 Q. When did you learn about that?
04:48 4 A. Late 2018 or early 2019.
04:48 5 Q. What did you do?
04:48 6 A. So we obtained a sample. We tried to do
04:48 7 testing on it to see what they're made of.
04:48 8 Q. Can you look at DTX-0956, an e-mail?
04:48 9 Let me know if you recognize that e-mail.
04:48 10 A. Yes.
04:48 11 MR. HUNG: I'd like to offer this.
04:48 12 MR. MUELLER: No objection, Your Honor.
04:48 13 THE COURT: Admitted.
04:48 14 BY MR. HUNG:
04:48 15 Q. Okay. Here's the e-mail. And let's blow out
04:48 16 your discussion.
04:48 17 What are you discussing here, ma'am?
04:48 18 A. Here, this is our first -- after we did a test
04:49 19 on the Zendura FLX, we confirm actually they have
04:49 20 exactly same hard copolyester as what we have, Tritan,
04:49 21 and also the soft TPU layer elastomers were used. So I
04:49 22 was like, okay. They use the same material as we are.
04:49 23 Q. All right. Let's advance a page. And let's
04:49 24 highlight this.
04:49 25 Okay. What were -- did you have a view as to

04:49 1 whether you thought Zendura would be as good as
04:49 2 SmartTrack?
04:49 3 A. No. Because at that time their module was a
04:49 4 little bit lower. So we think their forces might not
04:49 5 be as good as SmartTrack.
04:49 6 Q. There's another document in your binder,
04:49 7 PTX-1877. Let me know if you recognize that
04:49 8 presentation.
04:49 9 A. Yes. That's my team's internal testing
04:49 10 summary about the Zendura FLX.
04:49 11 MR. HUNG: We'd like to offer this.
04:49 12 MR. MUELLER: No objection, Your Honor.
04:49 13 THE COURT: Admitted.
04:49 14 BY MR. HUNG:
04:50 15 Q. All right. Let's go to Page 4.
04:50 16 And what did your team find when they did
04:50 17 their internal testing?
04:50 18 A. So this is a fingerprint test, chemical
04:50 19 compositions of the polymers for the FLX material.
04:50 20 So if you look at this, my team's conclusion
04:50 21 is that they used the Tritan, the same hard layer we
04:50 22 used, and they used Texin, which is TPU elastomer, same
04:50 23 as us. And they used another Tritan, same as us.
04:50 24 So the -- we identified, confirmed, that they
04:50 25 used the same material as us.

04:50 1 Q. Okay. Let's go to Page 10.
04:50 2 And what did you find with respect to stress
04:50 3 relaxation?
04:50 4 A. Here is a stress relaxing test result that you
04:50 5 can see they're very similar result from Zendura FLX to
04:50 6 SmartTrack.
04:50 7 Q. Did you have a view at that time as to why
04:50 8 these results were similar?
04:50 9 A. Yes. Because they use exactly the same
04:51 10 material.
04:51 11 Q. Dr. Li, how did that make you feel?
04:51 12 A. I was upset. I feel like my team and I spent
04:51 13 eight years of our life doing material research and
04:51 14 development work and testing after testing and
04:51 15 experiment after experiment to really come up with
04:51 16 SmartTrack, with that invention. And they have a
04:51 17 thousand different materials they can pick out. They
04:51 18 picked exactly the same material as us, and I feel like
04:51 19 they take our invention away.
04:51 20 Q. Do you know which companies are making
04:51 21 aligners with Zendura FLX today?
04:51 22 A. Quite a lot. Spark, ClearCorrect, and Angel.
04:51 23 Q. Dr. Li, are you proud of the work that you've
04:51 24 done for Align?
04:51 25 A. Yes. I'm very proud what my team and I did on

04:51 1 SmartTrack, and SmartTrack aligner has treated more
04:51 2 than 21 million patients including my daughters. All
04:51 3 my daughters did the Invisalign treatments. And I
04:51 4 think it's very important invention for clear aligners
04:52 5 for Align, and I'm very proud to be part of that.
04:52 6 MR. HUNG: Thank you, Dr. Li.
04:52 7 Pass the witness.
04:52 8 CROSS-EXAMINATION
04:52 9 BY MR. MUELLER:
04:52 10 Q. Good afternoon, Dr. Li.
04:52 11 A. Hi.
04:52 12 Q. My name is Joe Mueller. It's nice to meet
04:52 13 you. May I ask you a few questions?
04:52 14 A. Sure.
04:52 15 Q. Now, Dr. Li, you said a few times in the last
04:52 16 few minutes that SmartTrack and Zendura FLX use the
04:52 17 exact same materials.
04:52 18 Do you recall those questions?
04:53 19 A. Yes.
04:53 20 Q. And you're referring to materials like Tritan,
04:53 21 right?
04:53 22 A. Yes.
04:53 23 Q. What is Tritan?
04:53 24 A. Tritan is a copolyester.
04:53 25 Q. And who makes Tritan?

04:53 1 A. Eastman.
04:53 2 Q. Eastman, which is a different company, right?
04:53 3 A. It's a chemical company.
04:53 4 Q. It's a chemical company. And Eastman offers
04:53 5 Tritan to anyone who wants to buy it, right?
04:53 6 A. Right.
04:53 7 Q. Align doesn't own Tritan, am I right, Dr. Li?
04:53 8 A. No.
04:53 9 Q. The TPU layers, where do those come from in
04:53 10 the -- in the -- let's keep ourselves for right now in
04:53 11 the SmartTrack product. Where are those materials
04:53 12 from?
04:53 13 A. TPU could be coming from any of the chemical
04:53 14 companies who sell TPU elastomer, so TPU polymers.
04:53 15 Q. And those TPUs, those materials are supplied
04:53 16 by third parties, true?
04:53 17 A. Yes.
04:53 18 Q. And they're available to anyone, right?
04:53 19 A. Right.
04:53 20 Q. And so the mere fact that someone's using
04:54 21 Tritan, the mere fact that someone's using Tritan
04:54 22 doesn't mean they're using your ideas, true?
04:54 23 A. Yes or no. There are a lot of type of
04:54 24 copolyesters.
04:54 25 Q. Dr. Li, Eastman makes Tritan, not Align. Am I

04:54 1 right?
04:54 2 A. Correct.
04:54 3 Q. Eastman offers Tritan to the world to do
04:54 4 whatever they want with it, right?
04:54 5 A. Right.
04:54 6 Q. The TPUs are offered by various chemical
04:54 7 companies, not Align, correct?
04:54 8 A. Correct.
04:54 9 Q. And they're offered to the world, correct?
04:54 10 A. Yes.
04:54 11 Q. And so the fact that a company uses Tritan or
04:54 12 uses TPU just means they're using chemical materials
04:54 13 available to the world, right, Dr. Li?
04:54 14 A. Yes.
04:54 15 Q. Okay. Now, you understand there's lots of
04:54 16 different ways these materials can be used, true?
04:54 17 A. Yes.
04:54 18 Q. And in the context of dental aligners, the
04:54 19 field that you've worked in, it can be unpredictable
04:55 20 how these chemical materials might interact with each
04:55 21 other, fair?
04:55 22 A. Not really.
04:55 23 Q. You don't think it's fair to describe
04:55 24 materials used in dental aligners as unpredictable. Is
04:55 25 that fair or not fair?

04:55 1 A. I think your question is very compounded.
04:55 2 Q. Well, let me try it again.
04:55 3 Dr. Li, do you think that it is not
04:55 4 predictable, not predictable the way in which materials
04:55 5 in dental aligners function?
04:55 6 A. That's a true statement.
04:55 7 Q. Okay. That's a true statement.
04:55 8 And so it takes a lot of trial and error to
04:55 9 find materials that will work effectively together for
04:55 10 dental aligners, right?
04:55 11 A. Right. That's why it took us eight years to
04:55 12 find that material.
04:55 13 Q. Dr. Li, it takes a lot of trial and error to
04:56 14 find a configuration of materials that will be
04:56 15 effective, true?
04:56 16 A. True.
04:56 17 Q. And one configuration, the configuration that
04:56 18 was ultimately sold as SmartTrack, has a soft material
04:56 19 in the outer layers, correct?
04:56 20 A. Correct.
04:56 21 Q. And a hard material in the inner layers,
04:56 22 right?
04:56 23 A. Right.
04:56 24 Q. Now, to be clear, those raw ingredients used
04:56 25 in SmartTrack came from third-party companies, these

04:56 1 chemical companies, right?
04:56 2 A. That's always the case.
04:56 3 Q. Dr. Li, they came from third-party companies,
04:56 4 true?
04:56 5 A. That's always the case. Yes.
04:56 6 Q. Okay. And those -- and the way in which you
04:56 7 and your colleagues chose to combine them was
04:56 8 soft-hard-soft, right?
04:56 9 A. For SmartTrack, that's the case.
04:56 10 Q. And that was the result of hundreds of
04:56 11 experiments that you did, various trial-and-error
04:56 12 experiments to find a configuration that would work
04:56 13 effectively for dental aligners, true?
04:57 14 A. We choose the best for SmartTrack.
04:57 15 Q. Dr. Li, if you could please -- if you
04:57 16 understand my question.
04:57 17 You did hundreds of experiments, trial and
04:57 18 error, to find a configuration that worked effectively
04:57 19 for dental aligners, and what you arrived at was
04:57 20 soft-hard-soft, true?
04:57 21 A. That's the best among the 269 test samples.
04:57 22 Q. Now, you and Mr. Hung went through a lot of
04:57 23 test data very quickly. I'd like to go through it a
04:57 24 little bit more slowly and ask you a few questions
04:57 25 about it.

04:57 1 In the years that you worked on research and
04:57 2 development that led to SmartTrack, as you said, you
04:57 3 did well over 200 experiments, correct?
04:57 4 A. Correct.
04:57 5 Q. Over 200 different configurations of
04:57 6 materials, right?
04:57 7 A. Yes.
04:57 8 Q. Some of them were single layer, just one
04:57 9 layer, right?
04:57 10 A. Yes.
04:57 11 Q. Some were two layer, true?
04:57 12 A. Yes.
04:57 13 Q. And some were three layer, correct?
04:57 14 A. Yes.
04:57 15 Q. And what you did in some of those spreadsheets
04:57 16 that you went through is you listed various types of
04:58 17 criteria for how to judge the quality of these
04:58 18 differentiations, fair?
04:58 19 A. We have some requirements, fair.
04:58 20 Q. And the requirements included things like
04:58 21 durability metrics, true?
04:58 22 A. True.
04:58 23 Q. And others as well. And we're going to get
04:58 24 into some of them.
04:58 25 But you had various criteria by which you

04:58 1 judged these experiments that you performed, right?
04:58 2 A. Yes.
04:58 3 Q. And again, it wasn't predictable. It was not
04:58 4 predictable, not predictable what was going to come out
04:58 5 of these experiments, right?
04:58 6 A. Yes.
04:58 7 Q. Okay. But you did the experiments, and you
04:58 8 ultimately arrived at soft-hard-soft for SmartTrack?
04:58 9 A. We choose the best.
04:58 10 Q. Dr. Li, SmartTrack, soft-hard-soft, correct?
04:58 11 A. We choose the best. Yes. That's the
04:58 12 SmartTrack configuration.
04:58 13 Q. Soft --
04:58 14 A. But we also tried hard-soft-hard.
04:58 15 Q. Dr. Li, if you'll please just answer my
04:59 16 question.
04:59 17 SmartTrack, which you ultimately arrived at
04:59 18 and sold to the market, is soft-hard-soft, correct?
04:59 19 A. Yes. That was the best.
04:59 20 Q. And you understand, Dr. Li, that the accused
04:59 21 product in this case, the ClearCorrect aligners that
04:59 22 contain Zendura FLX, use hard-soft-hard, right?
04:59 23 A. Yes.
04:59 24 Q. Now, let's go to tab -- find it in your
04:59 25 binder, if you could, please, Dr. Li. And let me know

04:59 1 when you're there. Tab 5.
04:59 2 A. Yes. I'm there.
04:59 3 Q. And this is a set of slides titled Gen III
04:59 4 Sleep Aligner Material Project Update. It's DTX-0285.
04:59 5 Do you see this, Dr. Li?
04:59 6 A. Yes.
04:59 7 MR. MUELLER: And, Your Honor, I'm not
04:59 8 100 percent sure if this was admitted as part of the
04:59 9 set by Mr. Hung, but I offer it.
05:00 10 MR. HUNG: No objection.
05:00 11 THE COURT: Admitted.
05:00 12 BY MR. MUELLER:
05:00 13 Q. This relates to the work that you did in the
05:00 14 development process, that trial-and-error process, that
05:00 15 led to SmartTrack, correct?
05:00 16 A. It's a part of our development update.
05:00 17 Q. And you worked in this time period, those
05:00 18 years of trial and error, with at least 19 third-party
05:00 19 companies to find materials that you could use in these
05:00 20 various configurations, right?
05:00 21 A. Yes.
05:00 22 Q. And as we -- you talked about, you did -- you
05:00 23 performed hundreds of experiments on different
05:00 24 configurations, correct?
05:00 25 A. Yes.

05:00 1 Q. And you tracked the results, true?
05:00 2 A. We do.
05:00 3 Q. And you listed various criteria in these
05:00 4 spreadsheets that you compiled which listed how these
05:00 5 materials did according to tests that you ran, right?
05:00 6 A. Yes.
05:00 7 Q. And for some of them, your spreadsheets
05:00 8 included reasons to reject, correct?
05:01 9 A. Yes.
05:01 10 Q. And you ultimately selected Bayer#16, which
05:01 11 became SmartTrack, correct?
05:01 12 A. Correct.
05:01 13 Q. Now, you compared many of these materials to
05:01 14 the older EX30 material that had been used in an
05:01 15 earlier version of Invisalign, right?
05:01 16 A. Yes.
05:01 17 Q. And after you identified this soft-hard-soft
05:01 18 that in your view was the best, you sought patent
05:01 19 protection for the ideas that you had come up with,
05:01 20 true?
05:01 21 A. Yes.
05:01 22 Q. And you went to the Patent Office and filed
05:01 23 patent applications, correct?
05:01 24 A. Correct.
05:01 25 Q. Now, if you could, Dr. Li, if you could turn

05:01 1 to Tab 11 in your binder.
05:02 2 A. Yes.
05:02 3 Q. This is DTX-462.
05:02 4 MR. MUELLER: And I believe this was
05:02 5 admitted with Mr. Hung, but just to be safe, I'm going
05:02 6 to offer it again, DTX-462.
05:02 7 MR. HUNG: No objection.
05:02 8 THE COURT: Admitted.
05:02 9 BY MR. MUELLER:
05:02 10 Q. This was a declaration that you submitted to
05:02 11 the Patent Office. And do you see it says:
05:02 12 Declaration of Chunhua Li, Ph.D., right, Dr. Li?
05:02 13 A. Yes.
05:02 14 Q. And this was something that you submitted
05:02 15 under oath. You swore to tell the truth in this
05:02 16 declaration, right?
05:02 17 A. Yes.
05:02 18 Q. Let's go to Paragraph 3, numbered Paragraph 3.
05:02 19 And here, here, I want to go midway through. Moreover,
05:02 20 the appliances -- and that refers to dental aligners,
05:02 21 right, "appliances"?
05:02 22 Is that right, Dr. Li?
05:02 23 A. Yes.
05:02 24 Q. The appliances recited in the claims of the
05:02 25 '681 application exhibit unexpectedly positive results

05:03 1 over previously known appliances.
05:03 2 Do you see that, Dr. Li?
05:03 3 A. Yes.
05:03 4 Q. And then if we go to the very next paragraph,
05:03 5 this has the Roman numeral title right above it: Not
05:03 6 Predictable.
05:03 7 Do you see that, Dr. Li?
05:03 8 A. Yes.
05:03 9 Q. And I asked you a couple of minutes ago
05:03 10 whether the technology on which you did trial-and-error
05:03 11 experiments was not predictable, and I believe you said
05:03 12 it was, right?
05:03 13 A. Correct.
05:03 14 Q. And you said the same thing to the Patent
05:03 15 Office in this declaration, correct?
05:03 16 A. Yes.
05:03 17 Q. You said "not predictable," and just knowing
05:03 18 what materials are going to go into a configuration
05:03 19 doesn't necessarily allow you to predict how effective
05:03 20 the aligner will be, right?
05:03 21 A. Yes.
05:03 22 Q. And that's why you needed to do the hundreds
05:03 23 of experiments, the trial and error, to see what would
05:03 24 work and what would not, true?
05:03 25 A. We also did the clinical study.

05:03 1 Q. And what you arrived at as a function of all
05:04 2 those experiments and your hard work, the hard work of
05:04 3 you and your colleagues, was soft-hard-soft as the
05:04 4 SmartTrack product, true?
05:04 5 A. With a specific chemical composition.
05:04 6 Q. Now, let's look at exactly what you said to
05:04 7 the Patent Office. And actually, before we get into
05:04 8 the substance, if you just go to the date on the last
05:04 9 page where you signed this really quick, this Page 8.
05:04 10 This is back in November of 2016.
05:04 11 Do you see that?
05:04 12 A. Yes.
05:04 13 Q. Okay. So let's go to Paragraph 4. This is
05:04 14 ten years ago. And back in 2016, you said that:
05:04 15 Several years ago, Align Technology set out to develop
05:04 16 a product that could replace its single-layer,
05:04 17 thermoplastic polyurethane appliance product (referred
05:04 18 to herein as "EX30").
05:04 19 If we go down to the sentence -- two sentences
05:05 20 down: Over the course of more than seven years, Align
05:05 21 worked diligently to develop a suitable appliance that
05:05 22 would meet various criteria for effective orthodontic
05:05 23 treatment.
05:05 24 That was true?
05:05 25 A. True.

05:05 1 Q. You went on to say: During this development
05:05 2 process, my team evaluated, in an iterative fashion,
05:05 3 more than 250 distinct materials and/or material
05:05 4 combinations for possible use in an improved appliance
05:05 5 device.
05:05 6 And this is a reference to all those
05:05 7 experiments, the trial and error that you conducted,
05:05 8 true?
05:05 9 A. Yes.
05:05 10 Q. You went on to say: After years of
05:05 11 development, Align produced the SmartTrack material
05:05 12 (also referred to herein as "ST30"), which is a product
05:05 13 according to the instant claims comprising a layered
05:06 14 material with a hard copolyester layer between two soft
05:06 15 layers of thermoplastic polyurethane elastomer.
05:06 16 And so you said explicitly to the Patent
05:06 17 Office in this declaration, SmartTrack was the result
05:06 18 of all this trial and error, correct?
05:06 19 A. That's a description of SmartTrack.
05:06 20 Q. And what you said in particular was that the
05:06 21 instant claims, and that means the claims in this
05:06 22 particular patent application, right?
05:06 23 A. It is that patent.
05:06 24 Q. And this is the application that you described
05:06 25 to Mr. Hung as the SmartTrack patent.

05:06 1 Remember that?
05:06 2 A. Yes.
05:06 3 Q. And this is the SmartTrack patent. And it
05:06 4 describes instant claims comprising a layered material
05:06 5 with a hard copolyester layer between two soft layers
05:06 6 of thermoplastic polyurethane elastomer.
05:06 7 Now, you went on to say: We found that the
05:06 8 resulting orthodontic appliances incorporating the
05:06 9 SmartTrack material had surprisingly superior
05:07 10 properties of modulus of elasticity, elongation, time
05:07 11 stress-relaxation, durability, and thermoform ability.
05:07 12 Each of these properties is important for the
05:07 13 production of appliances to apply orthodontic,
05:07 14 teeth-moving forces in an oral environment.
05:07 15 Do you see that, Dr. Li?
05:07 16 A. Yes.
05:07 17 Q. And of course, all this was true, right?
05:07 18 A. Of course.
05:07 19 Q. Now, in this declaration, Dr. Li, you did not
05:07 20 say to the Patent Office, We have discovered that just
05:07 21 having two different materials results in an effective
05:07 22 dental aligner, right?
05:07 23 A. This is a declaration. Yes.
05:07 24 Q. You did not say that in the declaration?
05:07 25 A. We're talking about SmartTrack. We're talking

05:07 1 about SmartTrack.
05:07 2 Q. Dr. Li, if you could please just -- my
05:07 3 question is this: In this declaration from ten years
05:07 4 ago when you began filing patent applications after
05:08 5 conceiving of SmartTrack, you did not tell the Patent
05:08 6 Office at that time, We have realized that having two
05:08 7 different materials in a dental aligner results in an
05:08 8 effective aligner, right?
05:08 9 A. Not in this declaration.
05:08 10 Q. Nor, Dr. Li, nor, Dr. Li, did you tell the
05:08 11 Patent Office ten years ago that you had developed an
05:08 12 effective hard-soft-hard dental aligner, correct?
05:08 13 A. The first patent claims already covers that.
05:08 14 Q. Dr. Li, if you'd please just stay with my
05:08 15 question.
05:08 16 In this declaration ten years ago, you did not
05:08 17 tell the Patent Office that you had developed an
05:08 18 effective hard-soft-hard aligner, right?
05:08 19 A. I think the patent application is not just
05:08 20 depending on one declaration. It also have other, all
05:08 21 the patent applications with associated files
05:09 22 associated with that application.
05:09 23 Q. Dr. Li, please. In this declaration from ten
05:09 24 years ago, you did not tell the Patent Office, did not
05:09 25 tell the Patent Office that you had developed an

05:09 1 effective dental aligner with a hard-soft-hard
05:09 2 configuration, correct?
05:09 3 A. This declaration is for SmartTrack.
05:09 4 Q. Dr. Li --
05:09 5 A. Which is a soft-hard-soft.
05:09 6 Q. I'm sorry. I didn't catch that answer. Would
05:09 7 you say it one more time, please?
05:09 8 A. This is for SmartTrack patent.
05:09 9 Q. Soft-hard-soft?
05:09 10 A. Yes.
05:09 11 Q. Not hard-soft-hard?
05:09 12 A. No.
05:09 13 Q. And this declaration nowhere says that you had
05:09 14 developed an effective hard-soft-hard aligner, correct?
05:09 15 A. Not this declaration.
05:09 16 MR. MUELLER: Your Honor, I'm going to
05:09 17 shift subjects. It might be a good time for the
05:09 18 evening break if Your Honor's inclined?
05:09 19 THE COURT: How much longer do you have
05:09 20 with her?
05:09 21 MR. MUELLER: I'm not sure, but it's more
05:09 22 than -- more than 10 minutes. It's probably 15 or 20.
05:09 23 THE COURT: Would you all like to stay
05:10 24 and finish this witness?
05:10 25 Okay. Let's keep going.

05:10 1 MR. MUELLER: Okay.
05:10 2 BY MR. MUELLER:
05:10 3 Q. All right. Let's do this, Dr. Li. Let's
05:10 4 fast-forward to 2018 when Zendura FLX was released to
05:10 5 the market. And at that time, that's just the product
05:10 6 made by Bay Materials with the hard-soft-hard
05:10 7 configuration, right?
05:10 8 A. Uh-huh.
05:10 9 Q. And you studied that product, correct?
05:10 10 A. We did assessment.
05:10 11 Q. You did reverse engineering of it, right?
05:10 12 A. I didn't do reverse engineering.
05:10 13 Q. Okay. Well, let me show you a couple of
05:10 14 documents here. But you and your colleagues did
05:10 15 reverse engineering on Zendura FLX, correct?
05:10 16 A. No.
05:10 17 Q. Well, let's take a look at -- if you go to
05:10 18 Tab 20 in your binder. This is an e-mail and
05:11 19 attachment that you received on May 7th, 2019, right?
05:11 20 A. Yes.
05:11 21 Q. It's from Yan Chen, one of your co-inventors
05:11 22 on the patents at issue in this case?
05:11 23 A. Yes.
05:11 24 MR. MUELLER: Your Honor, I offer it.
05:11 25 MR. HUNG: No objection.

05:11 1 THE COURT: Admitted.
05:11 2 BY MR. MUELLER:
05:11 3 Q. And I'd like to go to the attached meeting
05:11 4 minutes which are attached to this e-mail. These are
05:11 5 minutes from an in-person meeting that you attended in
05:11 6 April of 2019 with Covestro, right?
05:11 7 A. Yes.
05:11 8 Q. And you were working with Covestro at that
05:11 9 time, correct?
05:11 10 A. They are our supplier of SmartTrack.
05:11 11 Q. So let's go to the bottom row on Page 3. Last
05:11 12 row. It says: For better understanding, film
05:11 13 performance stack lamination will be used for reverse
05:11 14 engineering of Zendura FLX.
05:11 15 Right?
05:11 16 A. This is what we're talking about, how to do
05:12 17 assessment of SmartTrack. Also the FLX.
05:12 18 Q. Dr. Li, Covestro was your supplier for the
05:12 19 SmartTrack material, correct?
05:12 20 A. Yes.
05:12 21 Q. This is referring to a meeting that you had in
05:12 22 2019 with Covestro, correct?
05:12 23 A. Yes.
05:12 24 Q. And the meeting minutes, the record of what
05:12 25 happened at that meeting, reflect that there was a plan

05:12 1 to conduct reverse engineering of Zendura FLX, true?
05:12 2 A. You have to think about what --
05:12 3 THE COURT: Ma'am, you need to answer his
05:12 4 question.
05:12 5 A. Not true.
05:12 6 BY MR. MUELLER:
05:12 7 Q. So the meeting minutes were wrong?
05:12 8 A. No. That reverse engineer has different
05:12 9 meaning.
05:12 10 Q. Now, let's go to DTX-220, which I believe is
05:12 11 in evidence.
05:12 12 And this is the e-mail that you discussed with
05:13 13 Mr. Hung, correct?
05:13 14 A. No. I'm not in this e-mail.
05:13 15 Q. Okay. If we -- I'm going to --
05:13 16 MR. MUELLER: Actually, I will offer
05:13 17 this. I thought you used it.
05:13 18 MR. HUNG: Yeah. She's mentioned later.
05:13 19 I don't object. That's fine.
05:13 20 MR. MUELLER: Okay. So we offer it,
05:13 21 Your Honor, just so the record is complete here.
22 BY MR. MUELLER:
05:13 23 Q. And this is a discussion of testing Zendura
05:13 24 FLX for full assessment and working to provide
05:13 25 competitive claims to the competitive marketing team.

05:13 1 Do you see that?
05:13 2 A. Yes.
05:13 3 Q. And you were involved in this competitive
05:13 4 analysis of Zendura FLX, right?
05:13 5 A. Yes.
05:13 6 Q. And first it says Bay Material reversed the
05:13 7 layer configuration. So instead of soft-hard-soft, it
05:13 8 had the reverse, hard-soft-hard?
05:13 9 Do you see that?
05:13 10 A. Yes.
05:13 11 Q. And that's true. It was hard-soft-hard, not,
05:13 12 not soft-hard-soft, correct?
05:14 13 A. Yes.
05:14 14 Q. Now, if we go a little bit further down,
05:14 15 there's some discussion of differences, differences
05:14 16 related to -- between the two materials.
05:14 17 Do you see that in the bottom?
05:14 18 A. Yes.
05:14 19 Q. For example, Zendura FLX should be similar in
05:14 20 stress relaxation but may have less force as a whole
05:14 21 (in other words, too soft to do movements like
05:14 22 posterior arch expansion).
05:14 23 Do you see that?
05:14 24 A. Yes.
05:14 25 Q. Then it goes on to say: Higher elasticity:

05:14 1 SmartTrack may be better in this property.
05:14 2 Do you see that, Dr. Li?
05:14 3 A. Yes.
05:14 4 Q. And then it goes on to say: SmartTrack should
05:14 5 be better in patient comfort as the soft outer layer
05:14 6 faces the tooth surface?
05:14 7 A. Yes.
05:14 8 Q. These are all identifications of differences
05:14 9 between SmartTrack and the newly released Zendura FLX,
05:14 10 right?
05:14 11 A. Yes.
05:14 12 Q. You weren't saying they were the same. You're
05:14 13 identifying differences, correct?
05:15 14 A. Yes.
05:15 15 Q. Yes. That's correct?
05:15 16 A. Yes.
05:15 17 Q. Okay. Now, at some point -- at some point,
05:15 18 you understand that the chief executive officer of
05:15 19 Align, Joe Hogan, became very concerned about Zendura
05:15 20 FLX.
05:15 21 You don't know that?
05:15 22 A. No.
05:15 23 Q. Were you here for the opening statement?
05:15 24 A. I was.
05:15 25 Q. And did you see that I showed the jury some

05:15 1 documents that are now in evidence about Mr. Hogan
05:15 2 making statements about "can we hit them with some IP"?
05:15 3 A. I think I saw that, but I didn't really look
05:15 4 at that --
05:15 5 Q. Fair enough.
05:15 6 A. -- e-mail.
05:15 7 Q. Let me put it to you this way, Dr. Li. Do you
05:15 8 know one way or the other whether the chief executive
05:15 9 officer of Align was trying to hit Zendura FLX with IP?
05:15 10 A. I'm not aware of, but the -- now you told me,
05:15 11 yes, I'm aware of now.
05:16 12 Q. And do you know one way or the other whether
05:16 13 the chief executive officer of the company of Align,
05:16 14 Joe Hogan, wished that the asset was off the market,
05:16 15 Zendura FLX.
05:16 16 Do you know one way or the other?
05:16 17 A. I don't -- I'm not aware. I'm just -- I'm an
05:16 18 engineer, so I didn't hear that from Joe. So I don't
05:16 19 know what he's thinking.
05:16 20 Q. Do you know one way or another whether the
05:16 21 executive management committee at Align had identified
05:16 22 the Bay Materials hard-soft-hard structure as a major
05:16 23 competitive threat to SmartTrack?
05:16 24 Do you know one way or the other?
05:16 25 A. We do consider them as a competitor.

05:16 1 Q. You do consider Zendura FLX as a competitor,
05:16 2 right?
05:16 3 A. To SmartTrack.
05:16 4 Q. And did you know, though, did you know that
05:16 5 the executive management committee considered the Bay
05:16 6 Materials hard-soft-hard structure as a major
05:16 7 competitive threat to SmartTrack?
05:16 8 A. I'm not totally aware of that.
05:17 9 Q. Well, one thing, Dr. Li, you do know is that
05:17 10 at some point you were asked to submit a new
05:17 11 declaration to the Patent Office to support new patent
05:17 12 applications to the Patent Office after Zendura FLX had
05:17 13 been released, correct?
05:17 14 A. I was asked to do a continuation on SmartTrack
05:17 15 patents.
05:17 16 Q. Okay. Well, let me ask you about this. If
05:17 17 you could please turn to Tab 24 in your binder. This
05:17 18 is DTX-84.
05:17 19 A. You said 24?
05:17 20 Q. Yes, please, ma'am, Tab 24. And take your
05:17 21 time, and let me know when you're there.
05:17 22 A. Yes. I'm here.
05:17 23 Q. Tab 24 is DTX-84. And this is a declaration
05:17 24 that you submitted during the prosecution of a later
05:17 25 application after Zendura FLX had been released, right?

05:17 1 A. It's a '613 declaration. Yes.
05:17 2 Q. And that's -- it's an application that led to
05:17 3 one of the patents at issue in this case, correct?
05:18 4 A. Yes.
05:18 5 Q. The '613, true?
05:18 6 A. That's a continuation patent for -- based on
05:18 7 the SmartTrack patent.
05:18 8 Q. All right.
05:18 9 MR. MUELLER: Now, I believe DTX-84 is in
05:18 10 evidence, but just to be ultra safe, I offer it.
05:18 11 MR. HUNG: No objection.
05:18 12 THE COURT: Admitted.
05:18 13 BY MR. MUELLER:
05:18 14 Q. And let's look at the signature page first.
05:18 15 This is dated the 16th day of September 2019, right?
05:18 16 A. Yes.
05:18 17 Q. So we were looking at a declaration a little
05:18 18 while ago from 2016.
05:18 19 Do you recall that, Dr. Li?
05:18 20 A. Yes.
05:18 21 Q. That was the declaration in which you
05:18 22 described SmartTrack as the successful result of your
05:18 23 experiments in that unpredictable technology, right?
05:18 24 A. Yes.
05:18 25 Q. And now we have a declaration three years

05:18 1 later, after Zendura from FLX was released in 2018,
05:18 2 right?
05:18 3 A. Yes.
05:18 4 Q. And fair to say, Dr. Li, some changes were
05:18 5 made?
05:18 6 A. This declaration is for '613 patent. So we
05:19 7 tailor the declaration towards that one.
05:19 8 Q. Right. But just so we have the chronology, we
05:19 9 have the first declaration in 2016, right?
05:19 10 A. For the original SmartTrack patent.
05:19 11 Q. Zendura FLX is released in 2018, true?
05:19 12 A. True.
05:19 13 Q. And then we have a new declaration in 2019,
05:19 14 and changes were made as compared to the declaration in
05:19 15 2016, correct?
05:19 16 A. It's for the continuation applications.
05:19 17 MR. MUELLER: Your Honor, may I set up a
05:19 18 placard?
05:19 19 THE COURT: I'm sorry. I couldn't hear
05:19 20 you.
05:19 21 MR. MUELLER: I'm sorry. May I set up a
05:19 22 placard?
23 THE COURT: Of course.
24 BY MR. MUELLER:
05:19 25 Q. Dr. Li, I want to walk through exactly what

05:19 1 the changes were as between this declaration in 2019
05:19 2 after Zendura FLX and the one that you submitted in
05:19 3 2016, okay?
05:19 4 A. Okay.
05:19 5 Q. So --
05:20 6 A. Can you display here? I can't see that.
05:20 7 MR. MUELLER: May I move this over a
05:20 8 little bit?
05:20 9 THE COURT: Of course.
05:20 10 MR. HUNG: Your Honor, can I stand up?
05:20 11 THE COURT: Wherever you need to go.
12 BY MR. MUELLER:
05:20 13 Q. All right. Dr. Li, you may recall that I
05:20 14 asked you some questions about the 2016 declaration,
05:20 15 Paragraph 4 in particular.
05:20 16 Do you recall that?
05:20 17 A. Yeah.
05:20 18 Q. And this is the paragraph that had the Roman
05:20 19 numeral III right above it, unpredictable -- not
05:20 20 predictable, right?
05:20 21 A. Uh-huh.
05:20 22 Q. Okay. So let's go through, and what we're
05:20 23 going to do here is take this original declaration, and
05:20 24 then I'm going to strip off some magnets that are going
05:20 25 to show what the language was in the next declaration

05:20 1 after Zendura FLX in 2019, okay?
05:20 2 A. Okay.
05:20 3 Q. All right. So first sentence: Several years
05:21 4 ago, Align Technology set out to develop a product that
05:21 5 could replace its single-layer thermoplastic
05:21 6 polyurethane appliance product (referred to herein as
05:21 7 "EX30").
05:21 8 That was in the original declaration, true?
05:21 9 Is that true?
05:21 10 A. Yes.
05:21 11 Q. And it was also in the new declaration as well
05:21 12 in 2019, right, Dr. Li?
05:21 13 A. Actually, it's a little bit far for me to see
05:21 14 very clearly, but if you -- I think if you want to, I
05:21 15 will suggest, do you have that screen here so I can see
05:21 16 it, or if you want to do that way, that's fine. I will
05:21 17 have to guess.
05:21 18 MR. MUELLER: Your Honor, if I might,
05:21 19 could I bring it over there and bring a microphone over
05:21 20 here so I'm closer to Dr. Li?
05:21 21 THE COURT: Sure. Whatever works best.
05:21 22 MR. MUELLER: Sure.
05:22 23 BY MR. MUELLER:
05:22 24 Q. Okay. All right. Dr. Li, I want to make sure
05:22 25 that you have a chance to read this carefully.

05:22 1 The first sentence is the same, right?
05:22 2 A. Yes, sir.
05:22 3 Q. Let me now ask you about the second sentence.
05:22 4 It says: At the time, EX30 appliances were the
05:22 5 standard of care for orthodontic treatment; for
05:22 6 example, Paragraph 3 of Chen -- and that was a
05:22 7 publication by your colleague; am I right?
05:22 8 A. Chen is my colleague.
05:22 9 Q. Right.
05:22 10 -- describes EX30 appliances when it states
05:22 11 that some dental appliances are made using
05:22 12 thermoplastic polyurethane.
05:23 13 Right? That's what you said in 2016?
05:23 14 A. Yes.
05:23 15 Q. And you said the same in 2019.
05:23 16 Do you see that, Dr. Li?
05:23 17 A. Okay.
05:23 18 Q. Okay. Now, over the course of more than seven
05:23 19 years, Align worked diligently to develop a suitable
05:23 20 appliance that would meet various criteria for
05:23 21 effective orthodontic treatment.
05:23 22 That was said in 2016, right?
05:23 23 A. Yeah. I think so.
05:23 24 Q. And that was also said in 2019. So thus far,
05:23 25 we're the same text, fair?

05:23 1 A. That's fair.
05:23 2 Q. It goes on to say: During this development
05:23 3 process, my team evaluated in an iterative fashion more
05:23 4 than 250 distinct materials and/or material
05:23 5 combinations for possible use in an improved appliance
05:24 6 device.
05:24 7 That was the reference to the trial-and-error
05:24 8 experiments in your original declaration, fair?
05:24 9 A. Fair.
05:24 10 Q. Now, here, there's one change. The word
05:24 11 "device" is not in the 2019 declaration, but otherwise
05:24 12 it's the same. True?
05:24 13 A. Okay.
05:24 14 Q. It goes on to say: After years of
05:24 15 development, Align produced the SmartTrack material
05:24 16 (also referred to herein as "ST30"), which is a product
05:24 17 according to the instant claims comprising a layered
05:24 18 material with a hard copolyester layer between two soft
05:24 19 layers of thermoplastic polyurethane elastomer.
05:24 20 This is what was said in 2016, true?
05:24 21 A. For SmartTrack patent, yes.
05:24 22 Q. Right. And it says: Expressly after years of
05:25 23 development, years of development, Align produced the
05:25 24 SmartTrack, which is a product according to the instant
05:25 25 claims comprising a layered material with a hard

05:25 1 copolyester layer between two soft layers,
05:25 2 soft-hard-soft.
05:25 3 A. That's for SmartTrack patent, yes.
05:25 4 Q. Now, after Zendura's released and this new
05:25 5 declaration is submitted in 2019, the language was
05:25 6 changed. And instead, it said: After years of
05:25 7 development, Align produced the SmartTrack material
05:25 8 (also referred to herein as "ST30"), which is a product
05:25 9 according to the current claims comprising a
05:25 10 multilayered material with a hard polymer layer between
05:25 11 two soft polymer layers.
05:25 12 Do you see that?
05:25 13 A. Yes.
05:25 14 Q. This is different text. You've eliminated
05:25 15 words "copolyester" and "of thermoplastic polyurethane
05:26 16 elastomer," right?
05:26 17 A. This is for a different application. Yes. We
05:26 18 tailor towards that application.
05:26 19 Q. But you're still saying this hard layer
05:26 20 between two soft layers, true?
05:26 21 A. Uh-huh. Yes.
05:26 22 Q. And then you continue, and the text changed
05:26 23 again. You also said: We found that the materials
05:26 24 with both hard and soft polymer layers according to the
05:26 25 current claims in orthodontic appliances had

05:26 1 surprisingly superior properties.
05:26 2 Do you see that?
05:26 3 A. Yes.
05:26 4 Q. And you deleted "incorporating the SmartTrack
05:26 5 material," right?
05:26 6 A. We are doing continuation with SmartTrack
05:26 7 patents.
05:26 8 Q. You deleted the "modulus of elasticity,"
05:26 9 correct?
05:26 10 A. I see it now.
05:26 11 Q. And you say -- instead of "the resulting
05:26 12 materials," referring to SmartTrack, now you say: We
05:26 13 found that materials, the materials with both hard and
05:27 14 soft layers according to the claims.
05:27 15 Do you see that?
05:27 16 A. Yes.
05:27 17 Q. Now let's continue. Here, in the original
05:27 18 declaration, it said: Each of these properties is
05:27 19 important for the production of appliances to apply
05:27 20 orthodontic, teeth-moving forces in an oral
05:27 21 environment.
05:27 22 Right?
05:27 23 A. Yes.
05:27 24 Q. And that was the same in the 2019 declaration,
05:27 25 correct?

05:27 1 A. Yes.
05:27 2 Q. Now, there's a sentence here that was added.
05:27 3 This was not in the 2016 declaration, correct?
05:27 4 A. Yeah. You list it here. I think it's
05:27 5 correct.
05:27 6 Q. This is something you added for the 2019
05:27 7 declaration, right?
05:27 8 A. 2019's for a different application.
05:27 9 Q. Right. This is the declaration after Zendura
05:27 10 FLX was released, right, Dr. Li?
05:27 11 A. This is for the '613 patent as continuation
05:27 12 for SmartTrack patent.
05:27 13 Q. And there's an additional statement. And you
05:27 14 said: I would expect that the presence of only two
05:28 15 such layers, two such layers (i.e., a hard polymer
05:28 16 layer and a soft polymer layer according to the current
05:28 17 claims) would also provide beneficial and surprisingly
05:28 18 superior properties of elongation, time
05:28 19 stress-relaxation, durability, and thermoform ability.
05:28 20 Do you see that, Dr. Li?
05:28 21 A. I see that sentence.
05:28 22 Q. And so the original declaration had been very,
05:28 23 very clear that there was the two soft polymer layers
05:28 24 and the hard layer, three layers total, correct?
05:28 25 A. For SmartTrack patent, yes.

05:28 1 Q. And in 2019, you added a sentence saying: I
05:28 2 would expect that the presence of only two -- of only
05:28 3 two such layers would also provide beneficial and
05:28 4 surprisingly superior properties of elongation, time
05:28 5 stress-relaxation, durability, and thermoform ability,
05:28 6 right, Dr. Li?
05:28 7 A. Yes. According to current claims, which is
05:28 8 the copolyester and TPU elastomer.
05:29 9 Q. Now, Dr. Li, you had done hundreds of tests
05:29 10 before submitting your original 2016 declaration, true?
05:29 11 A. True.
05:29 12 Q. And you had tested single-layer and
05:29 13 double-layer and triple-layer products, right?
05:29 14 A. In different combinations.
05:29 15 Q. And you arrived at the conclusion after
05:29 16 hundreds of experiments that the effective solution
05:29 17 that you released as SmartTrack had three layers?
05:29 18 A. We released the best.
05:29 19 MR. MUELLER: Your Honor, may I return to
05:29 20 the podium?
05:29 21 THE COURT: Of course.
05:29 22 A. Yeah.
05:29 23 THE COURT: Do you want to leave that up?
05:29 24 MR. MUELLER: May I leave it up there,
05:29 25 Your Honor?

05:29 1 THE COURT: Sure.
2 BY MR. MUELLER:
05:29 3 Q. So if we just have the chronology straight, in
05:29 4 2016, you told the Patent Office that in this
05:29 5 not-predictable field when you've done hundreds of
05:29 6 experiments, you arrived at a solution that you called
05:29 7 SmartTrack that had soft layers on the outside, the
05:29 8 outer layers, and a hard layer on the inside. Three
05:30 9 layers total, correct?
05:30 10 A. Correct.
05:30 11 Q. In the 2019 declaration after Zendura FLX, you
05:30 12 now say, I would expect that only two layers would be
05:30 13 successful according to the properties that mattered,
05:30 14 right?
05:30 15 A. That's what that sentence said.
05:30 16 Q. But in fact, Dr. Li, you had done hundreds of
05:30 17 tests that had shown two-layer products were
05:30 18 unsuccessful time after time after time, according to
05:30 19 your own criteria, right?
05:30 20 A. I -- I don't think that's right.
05:30 21 Q. Dr. Li, you had listed in your spreadsheet
05:30 22 reasons to reject single-layer and two-layer
05:30 23 configurations over and over and over and over again,
05:30 24 true?
05:30 25 A. True, but we picked the best.

05:30 1 Q. You picked the best?
05:30 2 A. There's --
05:30 3 THE COURT: Doctor, I'm sorry. Just
05:30 4 answer his question.
05:30 5 A. Yes. We pick the best.
05:30 6 THE COURT: Just answer his question.
05:30 7 I'm not going to ask you to do that again. Do you
05:31 8 understand?
05:31 9 THE WITNESS: Thank you.
05:31 10 BY MR. MUELLER:
05:31 11 Q. What you picked was a three-layer material,
05:31 12 soft-hard-soft?
05:31 13 A. Yes.
05:31 14 Q. And, Dr. Li, one way you could have told the
05:31 15 Patent Office the full story here is rather than
05:31 16 saying, I would expect two layers to work, you could
05:31 17 have provided all the tests you'd done on two layers to
05:31 18 show exactly what you found, right?
05:31 19 A. I don't normally supply the Patent Office with
05:31 20 raw data.
05:31 21 Q. Dr. Li, did you or did you not provide the
05:31 22 experimental data that you had conducted on two-layer
05:31 23 configurations?
05:31 24 A. Not raw data.
05:31 25 Q. Did you or did you not provide the Patent

05:31 1 Office with the experimental data that you had
05:31 2 conducted on single-layer configurations?
05:31 3 A. Yes.
05:31 4 Q. Did you or did you not provide that full
05:31 5 spreadsheet of information that you had compiled
05:32 6 reflecting your hundreds of experiments?
05:32 7 A. No.
05:32 8 Q. What you did instead was you added a sentence
05:32 9 saying, I would expect success for a two-layer
05:32 10 construction, right?
05:32 11 A. Yes.
05:32 12 Q. After previously telling the Patent Office
05:32 13 three years before that this field is not predictable,
05:32 14 right?
05:32 15 A. Yes.
05:32 16 Q. And you had done hundreds of experiments to
05:32 17 see what worked and what didn't, and you didn't provide
05:32 18 the Patent Office with that data, true?
05:32 19 A. True.
05:32 20 Q. Now, these patents, the patents in this case,
05:32 21 which were all based on applications filed after
05:32 22 Zendura FLX, right?
05:32 23 A. That's a continuation after 2018.
05:32 24 Q. After you submitted this new declaration to
05:32 25 the Patent Office, true?

05:32 1 A. Yes.
05:32 2 Q. Without providing any of your test data to the
05:32 3 Patent Office, right?
05:32 4 A. No additional testing.
05:32 5 Q. You did not provide your testing spreadsheets
05:32 6 to the Patent Office, correct?
05:32 7 A. Correct.
05:33 8 Q. And one other thing you did not provide to the
05:33 9 Patent Office, you never told the Patent Office the
05:33 10 infringement theories that Align was going to bring in
05:33 11 this case, correct?
05:33 12 A. I don't know what you're trying to ask me.
05:33 13 Q. I want to be very clear. There was no request
05:33 14 to the Patent Office. You never said in any form or
05:33 15 fashion, We believe Zendura FLX is using our
05:33 16 technology, and we're asking you, the Patent Office, if
05:33 17 you agree.
05:33 18 That never happened?
05:33 19 A. I'm not part of that process.
05:33 20 Q. In your declaration and as far as you know,
05:33 21 Align as a company never told the Patent Office that it
05:33 22 planned to use these new patents to go after Zendura
05:33 23 FLX. That just never happened?
05:33 24 MR. HUNG: Objection, Your Honor.
05:33 25 Foundation. Speculation.

05:33 1 THE COURT: Overruled.
05:33 2 MR. MUELLER: As far as Dr. Li --
05:33 3 THE COURT: Overruled.
05:33 4 BY MR. MUELLER:
05:33 5 Q. As far as you know, Dr. Li, neither you nor
05:33 6 anyone from Align, as far as you know, went to the
05:34 7 Patent Office and said, We plan to use these new
05:34 8 applications, if they issue, to go after Zendura FLX.
05:34 9 That never happened?
05:34 10 A. I'm not part of that process.
05:34 11 Q. So again, Dr. Li, as far as you know, that
05:34 12 never happened, true?
05:34 13 A. I don't know.
05:34 14 MR. MUELLER: Thank you, Dr. Li. I have
05:34 15 no further questions.
05:34 16 Pass the witness, Your Honor.
05:34 17 REDIRECT EXAMINATION
05:34 18 BY MR. HUNG:
05:34 19 Q. Dr. Li, do you do your taxes every year?
05:34 20 A. I do.
05:34 21 Q. Do you file the same tax form with the same
05:34 22 information every year?
05:34 23 A. Of course not.
05:34 24 Q. You update it, right?
05:34 25 A. Of course.

05:34 1 Q. Now, let's look at DTX-72.
05:34 2 MR. HUNG: Can you pull up DTX-72, and
05:34 3 let's go to claims. Last page.
05:34 4 And if there's a way to put those claims
05:34 5 side by side with JTX-2 so we can show the jury whether
05:34 6 the claims were the same relating to the two
05:34 7 applications.
05:35 8 And if we could blow up on the -- one
05:35 9 page more on the left. If we can pull up Claim 1 in
05:35 10 each.
11 BY MR. HUNG:
05:35 12 Q. Let's look at those two claims together,
05:35 13 Dr. Li. Are those claims the same?
05:35 14 A. They're different.
05:35 15 Q. When you submitted the declaration that is on
05:35 16 that easel --
05:35 17 THE COURT: Counsel, I'm sorry. Up here
05:35 18 at least we can't hear because of the feedback.
05:35 19 Everyone needs to put their phones or whatever they're
05:35 20 doing in airplane mode or turn them off or whatever
05:35 21 because all we hear up here is white noise. So...
05:35 22 MR. HUNG: I don't think it's me, but let
05:36 23 me --
05:36 24 THE COURT: Whoever it is, Kristie can't
05:36 25 hear you, so it's a problem.

05:36 1 BY MR. HUNG:
05:36 2 Q. When you submitted that declaration up there,
05:36 3 which claim set was it for? Was it for what you see on
05:36 4 the left or what you see on the right?
05:36 5 A. I think the new one, '613.
05:36 6 Q. The set on the right, the '613, right?
05:36 7 A. Right.
05:36 8 Q. Had the claims changed during this period,
05:36 9 ma'am?
05:36 10 A. Yes.
05:36 11 Q. When you wrote that last line, ma'am, and I
05:36 12 asked you about this, were you telling the truth?
05:36 13 A. Yes.
05:36 14 MR. HUNG: If we can pull up JTX-079.
05:36 15 The reasons to reject. If we can blow up the very top
05:36 16 of it actually.
17 BY MR. HUNG:
05:36 18 Q. Let's just look at the top. Do the first few.
05:36 19 What were you rejecting as compared to,
05:36 20 Dr. Li, when you made this table with Ms. Chen?
05:36 21 A. Modulus is the reason here, it says.
05:37 22 Q. Were you saying something was better than
05:37 23 SmartTrack or not better than SmartTrack? Why did you
05:37 24 create this table?
05:37 25 A. We create data to compare the other materials

05:37 1 to SmartTrack.
05:37 2 Q. To see whether they were as good as
05:37 3 SmartTrack?
05:37 4 A. Yes.
05:37 5 Q. So what does "reason to reject" mean in that
05:37 6 column, ma'am?
05:37 7 A. That means the modulus is too high or too low
05:37 8 compared to SmartTrack.
05:37 9 Q. Were you saying that you didn't think that
05:37 10 these materials were good?
05:37 11 A. No.
05:37 12 MR. HUNG: Nothing further.
05:37 13 CROSS-EXAMINATION
05:37 14 BY MR. MUELLER:
05:37 15 Q. Well, Dr. Li, one thing you could have done is
05:37 16 give this to the Patient Office and provide your
05:37 17 explanation of the spreadsheet and this data, right?
05:37 18 A. I wasn't -- I haven't submit data like this to
05:37 19 Patent Office in the past.
05:37 20 Q. This was not submitted, correct?
05:37 21 A. No.
05:37 22 MR. MUELLER: Thank you, ma'am. I have
05:37 23 no further questions.
05:37 24 Your Honor, I did have a housekeeping --
05:37 25 MR. HUNG: Actually, I did have one

05:37 1 thing. Thank you for reminding me.

05:38 2 Can we pull up JTX-2, and let's look at

05:38 3 the Figures 4, 5, and 7.

05:38 4 If we look at JTX-2, let's look at the

05:38 5 data that we submitted for a second to the Patent

05:38 6 Office. Let's look at Figure 4, I think.

05:38 7 Keep on going. First graph. There you

05:38 8 go.

9 FURTHER REDIRECT EXAMINATION

10 BY MR. HUNG:

05:38 11 Q. What is Figure 5, and what do you show the

05:38 12 world and the Patent Office when you submitted this?

05:38 13 A. That's the relaxation data.

05:38 14 MR. HUNG: Let's go to the next slide.

15 BY MR. HUNG:

05:38 16 Q. Is this data, ma'am, Figure 6?

05:38 17 A. This is forces, initial insertion force and at

05:38 18 the end of the day, what happened.

05:38 19 Q. Did you conceal this from the world?

05:38 20 A. They're put into the application.

05:38 21 Q. Let's look at Figure 7.

05:39 22 What do you show the world here, ma'am?

05:39 23 A. Here is working range.

05:39 24 Q. For -- for your application?

05:39 25 A. Yeah. For the application.

05:39 1 MR. HUNG: Let's look at the next slide.
2 BY MR. HUNG:
05:39 3 Q. What do you show here, ma'am?
05:39 4 A. This is another biological acceptable working
05:39 5 range and say how the forces look like.
05:39 6 Q. For a lower insertion force, right?
05:39 7 A. Right.
05:39 8 Q. Did you think that you needed to disclose the
05:39 9 data that he just mentioned to the Patent Office?
05:39 10 A. No. I thought those are raw data. So we put
05:39 11 together a specification and this representative data
05:39 12 to the Patent Office.
05:39 13 MR. MUELLER: Thank you.
05:39 14 Nothing further, Your Honor.
05:39 15 THE COURT: Thank you, ma'am. You may
05:39 16 step down.
05:39 17 THE WITNESS: Thank you.
05:39 18 MR. MUELLER: Just a couple of quick
05:39 19 housekeeping exhibit issues. If I could, Your Honor, I
05:39 20 would like to mark that board as DDX-20.2, the
05:39 21 declaration board.
05:39 22 THE COURT: And why don't we take a photo
05:39 23 of it and that way it can be used as an exhibit.
05:39 24 MR. MUELLER: Yes, Your Honor.
05:39 25 Absolutely.

05:39 1 Also, I believe Your Honor admitted
05:40 2 DTX-95. I didn't say the number on the record. I just
05:40 3 want to say it now. DTX-95.
05:40 4 And I also offered with no objection
05:40 5 DTX-220.
05:40 6 MR. HUNG: Your Honor, we understand that
05:40 7 you are just marking the board, not moving it into
05:40 8 evidence.
05:40 9 MR. MUELLER: That's correct. For a
05:40 10 demonstrative.
05:40 11 THE COURT: Then I misunderstood.
05:40 12 MR. MUELLER: Yeah.
05:40 13 THE COURT: Is the board an exhibit or a
05:40 14 demonstrative?
05:40 15 MR. MUELLER: Demonstrative, Your Honor.
05:40 16 THE COURT: Then I'm -- thank you. I
05:40 17 thought you were -- okay.
05:40 18 Ladies and gentlemen of the jury, we're
05:40 19 talking up here, treating you like you aren't here. I
05:40 20 apologize.
05:40 21 All day long you've heard the lawyers ask
05:40 22 to have an exhibit moved into evidence, which is really
05:40 23 the only reason they have me sit up here, so I can say
05:40 24 "admitted." And once I say it's admitted, then that
05:40 25 means you'll have it during the course of your

05:40 1 deliberations.

05:40 2 Now, something that frustrates every jury

05:40 3 is you'll have seen the exhibit that's behind my

05:40 4 favorite CSO Bob, and you'll be back in the jury room

05:41 5 and you'll say, I know we saw this, but we don't have

05:41 6 it.

05:41 7 The lawyers have used this as a

05:41 8 demonstrative to help you, but it is not in evidence.

05:41 9 You will not have it back there. And at the end of the

05:41 10 trial, I will give you instructions about what is

05:41 11 evidence and what is not. But especially something

05:41 12 like this, where there was time spent on it, I don't

05:41 13 want one of you all frustrated, thinking you saw

05:41 14 something and that you don't have it.

05:41 15 This is a demonstrative. You can

05:41 16 consider any of the answers to questions that related

05:41 17 to it. That is evidence. But the exhibit itself is

05:41 18 just a demonstrative to assist you in understanding

05:41 19 what the testimony was.

05:41 20 Now, that was a lot longer lecture than I

05:41 21 meant for it to be. For seven of you, I -- have a

05:41 22 great long trip home tonight. For the gentleman who's

05:41 23 walking three blocks, you know, try not to sweat on

05:41 24 your way back to your condo.

05:41 25 If we start tomorrow at -- I have a

05:42 1 hearing -- a separate hearing. I've got to take care
05:42 2 of it. It'll take a few minutes.
05:42 3 If you all can be here by about 8:30 or a
05:42 4 little after, we'll try to get started by 8:45. I have
05:42 5 a very short Zoom hearing I have to take care of at
05:42 6 8:30. As soon as I'm done with that, we'll get started
05:42 7 in here, so.
05:42 8 Thank you. Have a good evening, and
05:42 9 please remember my instructions.
05:42 10 THE BAILIFF: All rise.
05:42 11 (Jury exited the courtroom.)
05:42 12 THE COURT: Thank you. You may be
05:42 13 seated.
05:42 14 We'll start tomorrow, I assume, with the
05:42 15 two short depos.
05:42 16 MR. DURST: Your Honor, may -- there's
05:42 17 some issues with Straumann objecting on the hearsay
05:43 18 grounds to one of their own exhibits, an internal
05:43 19 document. We have submitted briefs to the Court on
05:43 20 that.
05:43 21 THE COURT: I have a very quizzical look
05:43 22 on their part.
05:43 23 MR. MUELLER: It's actually not an
05:43 24 internal document. It's a third-party consulting
05:43 25 report by Bing, the consulting firm. There is briefing

05:43 1 on that, Your Honor. We submitted, I think, late last
05:43 2 night or early this morning.
05:43 3 THE COURT: And does that go with one of
05:43 4 the two depos?
05:43 5 MR. DURST: It does, Your Honor.
05:43 6 THE COURT: And do I -- we have that?
05:43 7 Okay. We'll look at that as soon as we break, and I'll
05:43 8 let you know what we're going to do.
05:43 9 MR. DURST: Your Honor, there's also one
05:43 10 other issue, and that is we are likely to rest
05:43 11 tomorrow, our case-in-chief.
05:43 12 And this afternoon, about midday, we got
05:43 13 a new witness disclosure from the defendants that
05:43 14 radically changed their order of witnesses and proposed
05:43 15 breaking up a witness into two within their own
05:43 16 case-in-chief. We have objected to that, and we have
05:44 17 flagged that for them.
05:44 18 THE COURT: Okay. Let me -- I'm sorry.
05:44 19 Let me make sure I follow you. After you finish, they
05:44 20 want to have a single witness who will be broken up
05:44 21 into two --
05:44 22 MR. DURST: Within their own
05:44 23 case-in-chief.
05:44 24 THE COURT: Okay. Before -- I'll get to
05:44 25 you -- just one --

05:44 1 MR. DURST: We have objected to that, and
05:44 2 at this moment, the status is they're thinking about
05:44 3 whether they're really going to try to do that.
05:44 4 THE COURT: If you're going to finish
05:44 5 tomorrow, does the defendant have two days worth of a
05:44 6 trial left?
05:44 7 MR. MUELLER: Yes. For -- I'm sorry.
05:44 8 I'm not sure I'm following.
05:44 9 THE COURT: Maybe I'm just not following.
05:44 10 Mr. Durst set my little heart on fire
05:44 11 when he said that they would finish sometime tomorrow.
05:44 12 Now, I have this trial going through the end of next
05:44 13 week. And I find it hard to believe if they're going
05:44 14 to finish tomorrow that it will take that long, but
05:44 15 maybe I'm just not following.
05:44 16 MR. MUELLER: The reason why, Your Honor,
05:45 17 is because they are reserving their antitrust rebuttal
05:45 18 experts for next week.
05:45 19 THE COURT: So your case is going to
05:45 20 take -- your case is going to take through the end of
05:45 21 next week.
05:45 22 MR. MUELLER: Our case will --
05:45 23 THE COURT: Your case and their rebuttal
05:45 24 to your case.
05:45 25 MR. DURST: We expect that to be the

05:45 1 case, Your Honor.
05:45 2 MR. MUELLER: I agree. I expect that we
05:45 3 would be closing either end of Wednesday or first thing
05:45 4 Thursday morning, one of those two.
05:45 5 THE COURT: Okay.
05:45 6 MR. MUELLER: I do think that we're going
05:45 7 to have enough witnesses to get there.
05:45 8 THE COURT: Well, here's my problem: The
05:45 9 amount of time I gave you was in part based on the
05:45 10 number of patents, and it appears to me that despite
05:45 11 having five patents, which is fine, we're almost done
05:45 12 with the patent case.
05:45 13 And so it seems to me that maybe I
05:45 14 miscalculated on the amount of time to give when the
05:45 15 primary amount of days is going to be taken up in your
05:46 16 case.
05:46 17 MR. MUELLER: I could give perhaps a bit
05:46 18 of a summary of what's coming. So in terms of once
05:46 19 they rest, we would intend to call as our first witness
05:46 20 Dr. Perryman on the patent damages issues. He's here
05:46 21 on two categories of topics: Patent damages,
05:46 22 antitrust -- antitrust damages.
05:46 23 On patent damages --
05:46 24 THE COURT: And is he the witness you
05:46 25 want to split up between the patent and antitrust?

05:46 1 MR. MUELLER: Correct. And the reason is
05:46 2 straightforward. Lasinski -- Mr. Lasinski, I should
05:46 3 say, their damages expert --
05:46 4 THE COURT: He's a rebuttal witness on
05:46 5 the damages, and he's a --
05:46 6 MR. MUELLER: Exactly. That's exactly
05:46 7 right. So what we want to do is just call him
05:46 8 immediately after Mr. Lasinski.
05:46 9 THE COURT: But I'm not somewhat
05:46 10 following why your side needs what will turn out to be
05:46 11 five trial days. That's 12 hours per side. It seems
05:46 12 like a lot.
05:46 13 MR. MUELLER: Well, here's what will
05:47 14 follow Dr. Perryman. After Dr. Perryman, we will have
05:47 15 a fact witness on issues that relate to both some of
05:47 16 the patent issues that have come up but also some of
05:47 17 the antitrust issues from ClearCorrect. We will also
05:47 18 have our technical expert.
05:47 19 THE COURT: That's right. You also have
05:47 20 a --
05:47 21 MR. MUELLER: We have two technical
05:47 22 experts on the patent issues. We have two fact
05:47 23 witnesses in the patent issues. And then we have three
05:47 24 or four fact witnesses on the antitrust issues. And
05:47 25 then two more experts on the antitrust issues in the

05:47 1 form of Dr. Perryman Part 2 on antitrust, as well as
05:47 2 Dr. Taylor. You've seen some references to him as
05:47 3 well.
05:47 4 So there's actually quite a bit left.
05:47 5 Then they would call two antitrust experts in rebuttal.
05:47 6 THE COURT: In rebuttal.
05:47 7 Bob, what do you think? Are you buying
05:47 8 this?
05:47 9 (Laughter.)
05:47 10 THE COURT: Okay. Well, okay. So I'm
05:47 11 going to say this: By next Thursday, in time to do
05:48 12 closing arguments on Thursday, which is maybe even
05:48 13 longer because I'll have an antitrust charge as well,
05:48 14 we need to be done with the evidence by about 3 o'clock
05:48 15 next Thursday so that the jury can begin deliberations
05:48 16 on Friday.
05:48 17 (Off-the-record discussion.)
05:48 18 THE COURT: Oh, I'm sorry. Oh, that
05:48 19 also -- okay. Oh, it's the 4th, right?
05:48 20 MR. DURST: Yes. That's right,
05:48 21 Your Honor.
05:48 22 THE COURT: Okay. Okay. So that's good.
05:48 23 Wednesday -- by Wednesday at 3:00, we
05:48 24 need to be done with evidence.
05:48 25 MR. MUELLER: Yes.

05:48 1 THE COURT: And then Thursday morning, we
05:48 2 can -- we can do opening -- closing arguments. And I
05:48 3 just want to get them -- I want to get the verdict
05:48 4 before the 4th.
05:48 5 MR. MUELLER: Yes. Understand,
05:48 6 Your Honor.
7 THE COURT: And I want them to have the
05:48 8 whole day.
05:48 9 MR. DURST: And you've been very helpful
05:48 10 with that previously during the pretrial conferences.
05:48 11 We talked about that schedule. So we were expecting --
05:48 12 THE COURT: All good. All good. I'm
05:48 13 sorry. I just -- that makes much more sense to me now.
05:49 14 And that's fine.
05:49 15 MR. DURST: And, Your Honor, we do --
05:49 16 with respect to Mr. Perryman --
05:49 17 THE COURT: I'm going to let them do the
05:49 18 way they want. I can see he's going to be a damages
05:49 19 expert because they don't even have to call him on the
05:49 20 patent side. And so in my mind, he's two different
05:49 21 witnesses.
05:49 22 I know he's not, but he's -- they have no
05:49 23 burden on the one, and they do have a burden on the
05:49 24 other. And so it seems to me that when they put him on
05:49 25 in one case, it's a rebuttal to your case if they want

05:49 1 to. And they don't have to. And in the other case,
05:49 2 it's an affirmative -- he's testifying in an
05:49 3 affirmative manner.
05:49 4 So I'm going to allow them to do that.
05:49 5 Now, what is -- if there's some -- if
05:49 6 there's something that makes it unfair because
05:49 7 there's -- if there's some surprise or something that
05:49 8 I'm not following --
05:49 9 MR. DURST: Your Honor, it is
05:49 10 dramatically unfair and a huge surprise because for two
05:49 11 weeks, including yesterday afternoon, they have
05:50 12 repeatedly represented to us that Mr. Perryman was
05:50 13 going once and he was going next to last in their
05:50 14 order. And this afternoon, while we were in court --
05:50 15 THE COURT: So -- I'm sorry. Let me
05:50 16 interrupt. So by next to last, that would -- he would
05:50 17 have been --
05:50 18 MR. DURST: Next week.
19 THE COURT: He would have been next week
20 on?
05:50 21 MR. DURST: On both.
22 THE COURT: On both.
05:50 23 MR. DURST: Going once and next to last.
05:50 24 THE COURT: How --
05:50 25 MR. MUELLER: Your Honor, I'd say this:

05:50 1 First of all, we just received in the last couple hours
05:50 2 a shift of one of their experts from this week to next
05:50 3 week after we have our portion of the case. That's in
05:50 4 the last couple of hours one of their experts was
05:50 5 moved.
05:50 6 THE COURT: Well, here's -- here's the
05:50 7 question: When would you put Perryman on on your
05:50 8 case -- on their case?
05:50 9 MR. MUELLER: We'll put him first. I
05:50 10 think he'll probably be on for a half hour, 20 minutes.
05:50 11 He's a rebuttal to Mr. Lasinski only.
05:50 12 THE COURT: I've not bifurcated the case
05:50 13 in a way that makes it one or the other.
05:50 14 Here's how I'm going to split the baby.
05:50 15 If you -- if the defendant wants to put Perryman on at
05:51 16 two different times because it's two different cases,
05:51 17 I'm going to allow you to do that. But you're not
05:51 18 going to do it before next week. You can do it anytime
05:51 19 Monday.
05:51 20 MR. MUELLER: That's fine.
05:51 21 THE COURT: You can do the rebuttal case
05:51 22 first. It needs to be clearly rebuttal and -- or
05:51 23 whatever the right word is. But -- and the cross will
05:51 24 be limited to the damages -- patent damages rebuttal.
05:51 25 And then you can put your -- him on in whatever order

05:51 1 you want.
05:51 2 Once -- even -- even if you started your
05:51 3 case, it needs to be -- I'm okay with you separating
4 him any way you want to.
5 MR. MUELLER: Thank you, Your Honor.
05:51 6 THE COURT: Does that help?
05:51 7 MR. DURST: Understood, Your Honor.
05:51 8 Thank you.
05:51 9 THE COURT: Okay. Is there anything
05:51 10 else?
05:51 11 MR. MUELLER: Nothing from the
05:51 12 defendants, Your Honor. Thank you.
05:51 13 MR. DURST: Nothing beyond those items,
05:51 14 Your Honor.
05:51 15 THE COURT: And also let me -- let me
05:51 16 talk to -- if y'all will give me a second, let me talk
05:51 17 to Anna about the issue on hearsay.
05:51 18 Is that the only issue with regard to the
05:52 19 depos, is --
05:52 20 MR. DURST: It is, Your Honor.
05:52 21 (Off-the-record bench conference.)
05:52 22 THE COURT: I'm going to overrule the
05:52 23 objection, and it can be used.
05:52 24 MR. DURST: Thank you, Your Honor.
05:52 25 THE COURT: Anything else?

05:52 1 MR. DURST: None here.

05:52 2 MR. MUELLER: No, Your Honor. Thank you.

05:52 3 THE BAILIFF: All rise.

05:52 4 (Hearing adjourned.)

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1 UNITED STATES DISTRICT COURT)
2 WESTERN DISTRICT OF TEXAS)
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5 I, Kristie M. Davis, Official Court
6 Reporter for the United States District Court, Western
7 District of Texas, do certify that the foregoing is a
8 correct transcript from the record of proceedings in
9 the above-entitled matter.
10 I certify that the transcript fees and
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12 Judicial Conference of the United States.
13 Certified to by me this 12th day of July
14 2026.
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