

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

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

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

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ALIGN – EXHIBIT 2041
ClearCorrect Operating, LLC. v. Align Technology, Inc. IPR2025-00818

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12 Proceedings recorded by mechanical stenography,
13 transcript produced by computer-aided transcription.

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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

responsibility for their actions, they turned around and blamed us for the consequences of their own actions. And they filed what are called counterclaims, accusing Align of being a monopolist, accusing us of anticompetitive conduct responsible for their harms.

But what the evidence is going to show is that internally Straumann recognized exactly what was going on. Their problems were the result of their own decisions, lack of product innovation, aligners that often didn't fit right, and poor leadership, what their CEO referred to himself as self-inflicted wounds.

I am enormously proud to represent Align Technology in this case. And one of the reasons that I am so proud is because Align has truly transformed the provision of dental care.

You're going to hear early in this case from two orthodontists, Dr. Mitra Derakhshan and Dr. Maureen Valley. And part of what they're going to talk to you about is the importance of oral health and the way in which Align and Invisalign have transformed oral health. Because to be sure, it's partly about aesthetics, and it's partly about confidence that comes from having a smile that you're proud of.

But it also matters to your oral health, to your ability to brush your teeth, floss. It

prevents gum disease. It can help avoid tooth loss.

And we are learning more and more about how oral health is critically important to overall health, to gut health, even to brain health.

So these innovations have made a huge difference in terms of access to oral healthcare and health outcomes.

Now, I said this is a patent case. And this case is about five patents that we were awarded by the United States government for our inventions. Four of these patents involve the material that is used to make these clear plastic aligners, and Dr. Li is the lead inventor on those patents.

The other patent involves technology in this scanner, this intraoral scanner. And the lead inventor on that patent is Dr. Avi Kopelman.

Now, I'm going to talk to you this morning about why it is that Straumann infringes on our patents, on our intellectual property.

Now, Straumann denies that they infringe. They're going to tell you that they don't use our inventions. But I think they're also going to say even if we do, the patents are invalid. They're no good. And so I'm going to touch briefly on that as well.

And finally, I'm going to respond to this

allegation that we did anything wrong by virtue of our fair competition with Straumann.

But before we get into the details of infringement, I want to take a step back and I want to talk a little bit about how it is that we got here.

So Align was founded back in 1997 by two college friends who had this remarkable new idea that instead of braces, maybe they could use clear plastic aligners that were custom 3D printed. This was in the very early days of 3D printing technology in 1997. Custom 3D printed for every individual.

Now, this required a ton of change in how you thought about orthodontics because rather than going back to the orthodontist every few weeks and having them fiddle with the wires, you had to plan out the whole course of treatment and then make this set of custom aligners that you would wear for a week or two, then put in the next one, then put in the next one, and take you through your whole treatment journey.

In 1998, the company had about 25 employees. This is a picture from the very early days. And they were working on this technology and on trying to bring all of this together. And in 1999, Align came out with Invisalign, which was the first-ever clear aligner to use to straighten teeth.

Now, since then, there have been a whole series of innovations, new materials that have been used in the aligner itself. In 2006, this digital scanner first came onto the market.

In 2008, Align came out with a product for teenagers so that teenagers, especially, for example, who were playing sports, where having metal in your mouth was a problem, would have access to clear aligner technology too.

They came out with new ways to apply force to the teeth to be able to move them in the bone. They started doing clinical studies with respect to new materials. They came out with an outcome simulator so that you could see what the treatment was going to look like and how your teeth would look at the conclusion of that treatment.

They came out with new material. We're going to talk more about that.

New scanners. New scanners that could not only scan your teeth, but with respect to this, check for cavities at the same time and see cavities without the need necessarily to get x-rays.

They came out with a virtual care device so that rather than having to go back to the 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

companies is Straumann.

Straumann acquired a company called ClearCorrect, that you're going to hear about, as well as a company called Bay Materials. ClearCorrect made aligners. Bay Materials made the material.

Now, I told you that Invisalign came out in 1999. ClearCorrect came out with a clear aligner in 2006. In 2019, Align came out with SmartTrack. That was a new material for making these clear plastic aligners that was a breakthrough. Before this, these retainers, these aligners, had a tendency to crack and break. It was hard to get the right amount of both stiffness and flexibility.

Dr. Li and her colleagues spent eight years and tested over 260 materials in order to develop a new material for making these aligners. And that new material was a multi-layer material that had layers of two different plastics.

One of the plastics was relatively rigid. You're going to hear it was a copolyester. The other plastic was much more flexible. You're going to hear it referred to as TPU, polyurethane, thermoplastic polyurethane. And so you got the advantages both of a material that was relatively rigid and strong and a 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

arts by securing to inventors the exclusive right to their inventions.

If you make an invention, if you have an idea, if you do some experimental work, you have a choice. You can choose to keep it secret -- formula for Coca-Cola is one of the classic examples of that kind of secret -- and not file for a patent on it.

Or you have the option to go to the United States Patent Office and make your invention public, add to the sum of human knowledge. And in exchange for that disclosure, you are awarded a patent that gives you the exclusive right to that invention for a period of time.

And I think we are swapping out to get a better set of the slides here.

Thanks. And can you just click on it so I can activate the clicker?

Perfect. Thank you. Sorry about that.

So you can think of a patent as being like a deed to a piece of property. The patent is the thing that defines the boundaries of your property right. So if you're lucky enough to own a house, somewhere at the registrar's office, there's a deed and it specifies where the lot lines are. You can think of a patent as being like the lot lines for your

invention.

And if we take a look -- I'm just going to skip over that.

If we take a look at the end of the patent, and you'll have copies of these to look at, there is what are called claims. And those claims are what provide those lot lines and define the boundaries of the intellectual property that you own.

So this is Claim 1 of one of the patents that you're going to be asked to consider in the case. This is Claim 1 of the '613 patent.

Can I get -- can I get it, Mr. Smith, so that I can click to the next slide?

So I want to talk a little bit about how it is that you would decide whether there is infringement of a claim like that. So imagine that you have an idea to come up with strawberry shortcake. You might file a patent on strawberry shortcake, and it would be a dessert that has three layers: strawberries, whipped cream, and cake. And that would be your patent claim.

So let's say --

Can I get the clicker?

There we go. Sorry.

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,

1 and the product at issue here is Straumann's aligner
2 made from that multi-layer material called Zendura FLX.

3 So the claim here has a number of
4 requirements. I have pulled out the ones that you're
5 going to hear us talking about. You'll have all of
6 them, but I've pulled out the ones you're going to hear
7 us talking about.

8 And the claim requires three or more
9 layers, a hard layer that is copolyester, a soft layer
10 that is a thermoplastic polyurethane elastomer.

11 So the first question for you is going to
12 be, does Zendura FLX have those layers? And the answer
13 to that question, you've already seen. It's in their
14 own documents. The answer to that question is yes. It
15 is multi-layer, and it is made out of those two types
16 of material.

17 So what is Straumann going to say about
18 that? I don't think they're going to disagree with
19 what I just said, but I do think they're going to say
20 that that soft layer doesn't satisfy this requirement
21 about what's called elongation at break.

22 So what is this about? This is a soft,
23 flexible material. "Elongation at break" means how
24 much can you pull it apart before it breaks. Okay? So
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,

1 when they were talking internally, they never blamed
2 Align for their problems until they got caught
3 infringing.

4 But here we are. And so I need to talk
5 to you about these allegations. Because the truth is
6 we compete, and we compete with them fair and square.

7 Just because we are successful does not
8 mean that we have done anything wrong.

9 H-E-B, amazing company, right? Everybody
10 loves H-E-B, right? Great products, great prices,
11 great service. Their competitors may not love them.
12 That doesn't mean they've done anything wrong.

13 You're going to see that among clear
14 aligners, Invisalign is far and away right now the most
15 popular choice. That's not surprising. We've been in
16 the market for almost 30 years. We've invested over
17 \$2 billion in research and development to develop these
18 products. We've spent \$1.4 billion educating
19 orthodontists about that product and educating patients
20 about this as an option.

21 So it's not surprising that a lot of
22 people, when they want a clear aligner, come in and ask
23 for Invisalign by name. And there's nothing wrong with
24 that.

25 So I want to talk to you about three

things in connection with these allegations being made by Straumann.

Theme No. 1, who are the competitors? Because first and foremost, the folks that we are competing with, that we were competing with from the very beginning on Day 1, that at that point were 100 percent of the market, and the folks that we continue to compete with to this day are braces. That is our number one competitor. And yes. We compete with other clear aligner companies too.

Point No. 2, when you look at what actually happens in the market, we compete fairly. We compete -- we compete vigorously. That's good for consumers. That's what the antitrust laws are supposed to want, we compete fairly.

And finally, that what Straumann is complaining about is a consequence of their own decisions.

So first, this question of what is the market? The market pretty straightforwardly, we think, is the market for teeth straightening. You need to get your teeth straightened, what are you going to use? Maybe you use braces. Maybe you use clear aligners.

Straumann says no. Straumann says the 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

1 and gentlemen.

2 Ladies and gentlemen, this is a case
3 about competition. At the heart of this case is the
4 question of whether the competition that Align has
5 engaged in is fair or unfair. And we intend to show
6 and the evidence will establish that Align has locked
7 in customers, created a closed system, harmed
8 competition, suppressed competitors, including
9 ClearCorrect, and that the real victim in this case is
10 ClearCorrect.

11 We are going to show that over a period
12 of years, Align planned and executed a strategy of
13 suppressing competition to preserve a dominant market
14 position in the dental aligner market.

15 Now, in jury selection you may recall, I
16 used the analogy of two students on the schoolyard and
17 one student mistreating another student and then
18 finally making an allegation, a false allegation, of
19 stealing a lunch. And at that point -- at that point,
20 the second student provided the full story and said,
21 that allegation is false. In fact, here's what's
22 really been happening. I'm the real victim here.
23 That's this case.

24 In this case, Align has been subjecting
25 the industry generally, and ClearCorrect specifically,

1 to anticompetitive conduct for years. On top of that,
2 Align in this lawsuit is making allegations of patent
3 infringement that are not correct. We will show that.
4 There is no infringement of any of the patents in this
5 case.

6 ClearCorrect and its parent Straumann are
7 here to say, enough. Enough. And we're here to
8 provide the full story, the full set of facts to all of
9 you.

10 Now, let's get started with a discussion
11 of the clear aligner marketplace in the United States.

12 Now, Ms. Durie said a few times that this
13 is the wrong way to look at it, that you should look at
14 the teeth-straightening market, including wire braces.

15 Ladies and gentlemen, you may recall
16 during jury selection, I asked you all a few questions
17 about purchasing vehicles, and some of you own trucks,
18 some of you don't. But those of you who own trucks, at
19 least some of you had specific reasons for purchasing a
20 truck. There were functional reasons why trucks were
21 different than other vehicles, even though all the
22 vehicles could transport you from Point A to Point B.

23 Now, it's correct that wire braces can
24 transport teeth, move teeth, straighten teeth. But
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

1 other clear aligner offered to the marketplace, and you
2 can see those companies are clustered near the bottom
3 in terms of annual revenues. Far above is Align and
4 its Invisalign product.

5 Now, credit where credit is due.
6 Invisalign is a good product, and part of their success
7 is due to that being a quality product. But that's not
8 the only reason. That's not the only reason.

9 Other reasons why they have achieved and
10 maintained this dominant market position in the U.S.
11 market for clear aligners is because of anticompetitive
12 conduct, and we're going to prove that in this trial
13 piece by piece, document by document, witness after
14 witness.

15 We are going to show that the real victim
16 here is ClearCorrect, which has been victimized by the
17 anticompetitive conduct of Align.

18 Now, just as background before we get
19 into some of the details, here's an overview of the
20 process for clear aligners. And I'll note at the
21 outset, Align does not hold patents on the basic idea
22 of a clear aligner. You may have had the impression
23 that there's something wrong with making clear aligners
24 and offering a competitive product. There's not.
25 Okay? There's not.

1 You will see that the patents in this
2 case are very specific, and they have very specific
3 requirements. Other companies are allowed to make
4 clear aligners and offer competitive products in the
5 marketplace. Align doesn't own the basic idea of any
6 type of clear aligner.

7 Here, we see a doctor discussing
8 treatment options with a patient. And in this case
9 when I say "doctor," I'm referring to dentists and
10 orthodontists who prescribe dental treatments.

11 The doctor will use what's called an
12 intraoral scanner, and Ms. Durie said a few words about
13 those, to scan the mouth of the patient and to scan the
14 topography, the shape of the teeth.

15 The scanner has a wand. It's connected
16 to a console. And that is the scanner equipment.

17 Now, then, there needs to be an aligner,
18 a plastic aligner which is designed to start to
19 straighten the teeth over time, and a patient will use
20 multiple aligners over the course of a treatment
21 program. Each aligner is designed to move the teeth a
22 bit more, and so progressively, the aligners move the
23 teeth into a straighter shape.

24 They are made of materials, and the
25 materials used in aligners are critical to this case.

1 We're going to talk a lot and present evidence about
2 the different types of materials that can be used in
3 aligners.

4 It's a fascinating area of technology,
5 and we're going to do our best to give you as much
6 information as we can.

7 It turns out that the materials used in
8 aligners, it can be quite unpredictable how they're
9 going to interact with each other, and it's difficult
10 and takes hard work and research and development to
11 find an effective composition of materials that will
12 work well, that will be safe and effective for
13 patients. And so you're going to learn a lot about
14 that over the course of the trial.

15 Those materials are formed through a
16 thermoforming process into the appropriate shape, and
17 we will take you through that process as well,
18 including how the ClearCorrect aligners, the ones that
19 are accused of infringement, are made. They're made in
20 Round Rock, and we're going to take you inside that
21 Round Rock facility and show you precisely how they are
22 made.

23 So let's go through some of the facts in
24 the case and put these on a timeline to give you the
25 chronology, and we're going to start with the

development of Invisalign's products, including some of the technology that's relevant to this case.

Now, in 1997, we have the founding of Align. And as Ms. Durie said, Align was launched to try to commercialize clear dental aligners. And again, credit where credit is due, it was a -- we have no quarrel with their founding of the company or their efforts to launch the aligners into the industry.

After the initial version of Invisalign, they wanted to improve it, and they went to a company called Bay Materials, Bay Materials, for help in finding materials that would be better for the next generation of Invisalign after the initial version.

Bay Materials was a company started in California by a gentleman named Ray Stewart, who started out of his garage. He was a materials scientist. He's now retired. And he had worked for decades on various types of material compositions for a whole wide range of industries.

So Bay Materials over time did specialized research on materials for different types of devices.

Here's a picture of John Lahlouh. I'll say a few more words about him in a bit. He's going to be a witness in this trial. This picture's not from

1 the founding. It's from later on in the company's
2 history. But you can see some equipment that
3 Mr. Lahlouh is working with and some of the raw
4 materials used in the composition's design by Bay
5 Materials.

6 Back in 1999, Align went to Bay Materials
7 for help with their aligners, and they worked together
8 on a material that became known as EX30. And this was
9 used in next generation of Invisalign. EX30 had a
10 single layer of materials that would be used in dental
11 aligners, and that will be in contrast to some
12 multi-layer materials that we'll talk about in a bit.

13 So Align goes to Bay Materials for help
14 with the EX30, and that becomes incorporated into the
15 updated version of Align's aligners in 2001. At that
16 point, the companies went their separate ways, and
17 Align, to its credit, continued to do research and
18 development, continued to try to find a next generation
19 after that.

20 And they worked with more than a dozen
21 companies over a decade. So a dozen different
22 companies on various aspects of creating a next
23 generation to follow the EX30 version of Invisalign.

24 And after about a decade of research with
25 all those other companies with whom they consulted,

1 they arrived at something they called SmartTrack. And
2 this is a press release from October of 2012. The
3 actual product was launched, as Ms. Durie said, in
4 2013. It was announced in 2012.

5 And here, this says that Align is
6 announcing SmartTrack, the next generation of
7 Invisalign clear aligner material. 2012, SmartTrack.

8 Now, critically, critically, this
9 material has something that's known as a soft-hard-soft
10 configuration. I'll say that again. It's important.
11 It's a multi-layer material, soft-hard-soft. And let
12 me try to show you a visual to explain exactly what I
13 mean.

14 Here, we have a patient's mouth, and if
15 you look closely, there's actually a clear plastic
16 aligner on the teeth on the bottom and the top.
17 There's -- so there's aligners in this patient's mouth
18 right now.

19 If we were to look at one of those
20 aligners and focus on one of the caps, so to speak, for
21 a tooth and cut it in half, it would have, if it was
22 using SmartTrack, the soft -- indicated by pink --
23 hard -- indicated by blue -- soft configuration.
24 Soft-hard-soft.

25 Now, these are all plastics, and they're

1 not pink and blue. They're clear. But they are
2 different materials. Soft on the outer layers and hard
3 on the inner layer. That was the SmartTrack material.

4 I'm going to contrast that later with
5 what ClearCorrect arrived at and what Bay Materials
6 developed for an alternative technology, but let me
7 pause on one point right now.

8 Ms. Durie said, and she's right, that for
9 a patent infringement case, the ultimate question is
10 the comparison of what we call the claims in the
11 patent, which is the section at the end. You take the
12 claims that are being asserted by the plaintiff and you
13 compare them to the accused product to see if all the
14 requirements in the claims are met.

15 That is the proper analysis, and that's
16 what we're going to do to show noninfringement.

17 But there's a backstory and a context to
18 this case, and Ms. Durie herself compared SmartTrack,
19 this product right here, with what's used in
20 ClearCorrect.

21 And so you're going to see that even
22 though it is 100 percent right that an infringement
23 analysis requires a comparison of the claims to the
24 products, the product-to-product comparison is relevant
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

1 this case. I mentioned to you earlier that in the late
2 1990s, that Align had gone to Bay Materials, and then
3 they had gone their separate ways after the EX30
4 project.

5 Well, it turns out that Bay Materials, on
6 its own, did further work on materials that could be
7 used in dental aligners. They did further independent
8 development when they went their own way.

9 Mr. Lahlouh, John Lahlouh, who will
10 testify in this case, is going to explain what
11 happened. And he's going to explain to you a
12 development process that stretched over years.

13 You heard Ms. Durie say that -- made an
14 accusation, I should say, that there was a shortcut
15 taken, a shortcut taken by the defendants. Just keep
16 that in mind, shortcut, as we walk through this
17 evidence and as you hear the testimony in this case.

18 Here's a lab notebook from John Lahlouh.
19 And if you look carefully at the date, it's
20 August 12th, 2002. And you can see it right there.
21 That's 24 years ago.

22 In that notebook, which came in -- a lab
23 notebook which also talks about alternatives to EX30,
24 the material used in the Align product that Bay
25 Materials had consulted for, now Bay Materials has

1 moved on to alternatives.

2 So here, we have this lab notebook, and
3 it has as the title of this page Multi-Layered
4 Construction. It also says a three-layer construction.

5 Now, do you recall Ms. Durie talked about
6 multi-layer construction using two different materials?

7 Well, here, we have a multi-layer construction using
8 two different materials. And how do we know that?

9 It's right there. If you look on the right-hand side
10 of the page, do you see there's two materials listed?

11 There's a Surlyn in the outer layers and another
12 material, Selar, in the middle. Two different
13 materials in a three-layer construction. And the
14 materials on the outer layers, the Surlyn, are hard.

15 2002, 24 years ago. Handwritten lab
16 notebook, three-layer construction, hard layers. Hard
17 layers on the outside.

18 This is different than SmartTrack.
19 SmartTrack has soft layers on the outside and the hard
20 layer on inside. This is talking about a multi-layer
21 construction with hard layers on the outside. 24 years
22 ago.

23 Now, Bay Materials was a small company
24 then and remains a relatively small shop today. In the
25 15 years or so that followed that lab notebook,

1 Mr. Lahlouh and his colleagues worked on a wide variety
2 of projects in various industries. They worked on
3 everything from bulletproof vests to cladding for the
4 sides of naval ships, to prevent rusting of the metal
5 on the sides of the ships, to battery technology. They
6 worked on some plastic used in thermometers for turkeys
7 for when you're cooking. Wide variety of industries.

8 But periodically, over time, Mr. Lahlouh
9 and his colleagues returned, returned to the idea of
10 new materials for dental aligners. And over time, over
11 time, Mr. Lahlouh and his colleagues refined, refined
12 that germ of the idea you can see way back in 2002,
13 refined it to become a hard-soft-hard configuration for
14 dental aligners.

15 They did that, you will learn, before
16 SmartTrack was even introduced to the market. And of
17 course, SmartTrack is the opposite. SmartTrack is
18 soft-hard-soft.

19 In 2018, after years of work -- no
20 shortcuts here. This is years of work starting back
21 24 years ago -- Bay Materials announced Zendura FLX.
22 They announced the commercial release of Zendura FLX, a
23 new material engineered specially for fabricating clear
24 aligner appliances.

25 And Mr. Lahlouh is going to tell you all

1 about the independent development work that led to
2 this. And he'll tell you that he was familiar with
3 Align. He was familiar with Align's aligners, and he
4 even looked at Align patents.

5 To copy? No. Quite the opposite. To
6 strike his own path, a path that he had been on for
7 years and years and years and develop his own
8 technology. So he and his colleagues developed Zendura
9 FLX, a new material engineered specially for
10 fabricating clear aligner appliances.

11 Zendura FLX is used in the ClearCorrect
12 aligners that are accused of infringement in this case,
13 and that's why it's so important to the issues in the
14 case. Zendura FLX is the material used in the
15 ClearCorrect aligners that are accused of infringement
16 in this case.

17 Now, let's talk about ClearCorrect.
18 ClearCorrect was founded in 2006, 20 years ago, in
19 Houston. And it has been based in Texas ever since.
20 The headquarters today is in Round Rock, and this is
21 actually a picture of a celebration photo from a few
22 months ago for the 20th anniversary of the company.

23 Now, if you look closely at the building,
24 you can see right below ClearCorrect, it says: A
25 Straumann Group brand.

1 And it is correct that Straumann acquired
2 ClearCorrect years ago. It's also correct that
3 Straumann acquired Bay Materials at a different point
4 in time. And so Straumann is the parent company of
5 both Bay Materials and ClearCorrect.

6 It's also correct that Straumann is a
7 Swiss dental company. That's all true. And we're
8 going to call witnesses, including Ms. Sterling from
9 Straumann, to explain what Straumann is and what
10 Straumann does.

11 But it's interesting that the plaintiff
12 and Ms. Durie in her opening statement only uses the
13 term "Straumann" to refer to the defendants. The
14 defendants include ClearCorrect. Straumann may be its
15 parent company, but ClearCorrect is a Texas company
16 headquartered in Round Rock. And the products at issue
17 in this case on the aligner side are ClearCorrect
18 aligners made using Zendura FLX material.

19 So we think it's important to be careful
20 and precise in referring to what's happening with
21 respect to the parties and the facts. And the truth
22 is, the aligners being made here are ClearCorrect
23 aligners manufactured right up the road in Round Rock.

24 The fact that Straumann is the parent
25 company doesn't change the basic fact that ClearCorrect

1 is a Texas operation which makes these aligners here
2 and does so using Zendura FLX material from Bay
3 Materials.

4 Now, in 2020, ClearCorrect which, again,
5 had been around since 2006, launched the aligners made
6 using the Zendura material. They called it as a
7 tradename ClearQuartz, but it was the Bay Materials
8 Zendura FLX material that was used in there. And it
9 used, as I said, the hard-soft-hard configuration, the
10 very opposite of what SmartTrack does with
11 soft-hard-soft.

12 I'll also note you might think that
13 because Straumann is the parent company today, Bay
14 Materials and ClearCorrect, that Bay Materials only
15 supplies Zendura FLX to ClearCorrect today. It doesn't
16 supply Zendura FLX to other clear aligner companies out
17 in the marketplace. Well, they do. They actually
18 supply it to anyone who wants to use it, even if that
19 other company is a direct competitor to ClearCorrect.

20 Bay Materials is an open shop. It'll
21 sell to any clear aligner company in the industry. So
22 it supplies to ClearCorrect. It also supplies to
23 ClearCorrect competitors.

24 So that's the development story, and
25 that's the backdrop for many of the technical issues in

1 the case. And as you can see, the two parties here,
2 Align on the one hand, ClearCorrect on the other, were
3 on different technological paths. One ended up with
4 soft-hard-soft, that's Align. One ended up with
5 hard-soft-hard, that's ClearCorrect, using the Bay
6 Materials Zendura FLX material.

7 Okay. Now, the way they should have
8 worked is that both parties compete on a level playing
9 field and let the best product win out on quality, on
10 price. Level playing field. In our American system,
11 we certainly believe in robust competition, but we also
12 believe in a level playing field.

13 And what should have happened here is
14 exactly that. But instead what has happened here is at
15 every turn, Align has been tilting the playing field in
16 unfair ways to achieve what you see here, their
17 dominant market position in the U.S. market for clear
18 dental aligners.

19 So let's look at how they did it. And
20 here's the timeline we just went through, and I want to
21 now zoom in on 2011 when Align purchased a company
22 called Cadent. So they purchased a company called
23 Cadent. There's nothing wrong with acquiring a
24 company, and they did it. It had a scanning business.

25 So at that point, Align began to offer

1 the scanners, which had previously -- the mouth
2 scanners, which previously had been sold by Cadent.
3 And Align began marketing these as the iTero scanners.
4 But what they did with those scanners was to begin to
5 lock in, lock in doctors to Invisalign. You'll see
6 that over time, they used these scanners with the wand
7 and the console to lock in doctors and therefore their
8 patients into Invisalign.

9 So let's look at exactly how they did it,
10 okay?

11 In 2012, they announced SmartTrack, the
12 soft-hard-soft.

13 Here's 2013, an internal e-mail: As
14 we're preparing for serious competition in three to
15 five years -- by the way, they were right. Serious
16 competition was coming in three to five years. Five
17 years was Zendura FLX being launched.

18 Internal e-mail: As we're preparing for
19 serious competition in three to five years, an iTero
20 customer is a locked-in Invisalign customer.

21 Align's own words, "locked in."

22 And they went on to say quite candidly:
23 We should be locking in every Invisalign customer into
24 iTero now.

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

1 only. We received this as part of the documents that
2 we received in this litigation. Confidential - for
3 internal use only, build the moat around your business.

4 Now, Ms. Durie compared Align at one
5 point to H-E-B, the grocery store. You ask yourself,
6 have you ever seen a moat at H-E-B? And of course the
7 answer is no.

8 This moat was designed to protect from --
9 protect Align from competition. It was designed to
10 keep dentists and orthodontists inside the moat in this
11 closed system and to keep all the other competitors
12 outside the moat unable to compete on a level playing
13 field. That's what this was about.

14 And again, you don't have to take it from
15 me. The CEO, Joe Hogan, said: We have such a huge
16 share of the market, why do we want to give them this
17 option?

18 By the way, we have such a huge share of
19 the market. Recall the effort to try to expand the
20 market to include wire braces? Here's the CEO himself
21 saying: We have such a huge share of the market.

22 And he's obviously referring to dental
23 aligners.

24 Why do we want to give them this option?
25 And the option that he's referring to is making

1 Invisalign interoperable with other companies'
2 scanners.

3 What they did -- what they did, the moat,
4 was the following: They told dentists and
5 orthodontists, we're not going to supply you Invisalign
6 anymore unless you use our scanner, iTero. We're not
7 going to give you the ability to offer your patients
8 Invisalign unless you use our scanner.

9 Now, scanners are costly and they take up
10 some space in an office, and you can't have a bunch of
11 different scanners in your office. So effectively,
12 this was forcing doctors to use iTero, and then it
13 turns out iTero is more difficult to use with other
14 aligners than Invisalign.

15 So forcing them to use iTero or else lose
16 the supply of Invisalign -- that's another way to put
17 it. If you don't buy the iTero, no more Invisalign.
18 Once you have the iTero, it's more difficult to use
19 with other aligners. So it's sort of a one-two punch.
20 You have to use our scanner, and the scanner doesn't
21 work as well with other aligners than Invisalign.

22 And they were quite candid, again, in
23 internal communications. If you want to do Invisalign,
24 you're forced to buy iTero and live with it.

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

1 of Invisalign and Align means not diverting prospective
2 patients into non-Invisalign treatment.

3 And they said if you don't maintain good
4 standing, they would even remove you from the Find a
5 Doctor tool on their website.

6 Again, in their own communications, they
7 were candid about what they were trying to do.

8 Here, this says: Lock in DSOs. Those
9 are dental service organizations. Lock them in.

10 So these are all anticompetitive
11 activities, and you're going to hear about this in
12 detail, I can promise you, starting today about exactly
13 what they did. This harmed the entire market.

14 But with respect to Zendura FLX and
15 ClearCorrect, Align took this campaign of
16 anticompetitive conduct to the next level and
17 specifically targeted Zendura.

18 So when they learned of it being launched
19 in 2018, they started to test it. And there's nothing
20 wrong with that. You're allowed to test competitive
21 products out in the marketplace, sometimes called
22 reverse engineering. That's fine. Everybody is
23 allowed to do that.

24 But what you do with that information in
25 terms of whether you target someone unfairly is a whole

1 other matter. Here, after conducting some testing,
2 they said: It's the best material we've seen so far.

3 Now, remember Ms. Durie made a few
4 criticisms of the ClearCorrect aligners. Well, here
5 they are internally saying Zendura FLX is the best
6 material we've seen so far.

7 And they were very, very specific in what
8 it was, and they acknowledged that Bay Materials had
9 reverse, the reverse of SmartTrack, hard-soft-hard.
10 SmartTrack was soft-hard-soft. So this is the
11 opposite. They're recognizing that Bay Materials had
12 the reverse approach.

13 Mr. Hogan was worried. He said: I'm
14 really worried about marginalizing SmartTrack. I am
15 just looking for any area of leverage for SmartTrack
16 versus this material. Looking for leverage against
17 this new competitive product.

18 And then he said -- or he received an
19 e-mail from his colleague, the vice president of
20 research and development, Srini Kaza: Unless we can
21 stop with IP, they will keep coming.

22 IP stands for intellectual property, and
23 patents are a form of intellectual property. So unless
24 we can stop with IP, they will keep coming.

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

1 tried to stretch the claims, stretch the claims to get
2 new claims to go after Zendura FLX. And they submitted
3 new applications in a new declaration.

4 Now, this is our red line, so to speak,
5 showing the differences between the earlier declaration
6 that was made to the Patent Office and the new
7 declaration, and there were lots of changes. And we're
8 going to take a hard look at those over the course of
9 this trial to see if those new statements in the
10 changed declarations were well supported.

11 And let me make two points right now.

12 We think you will see that Align had
13 ample data that was relevant to the veracity and the
14 truthfulness of these statements that was not provided
15 to the Patent Office. That was not provided to the
16 Patent Office. You're going to have to consider the
17 question why.

18 The second thing is that I do want to
19 know -- Ms. Durie said, well, when a company sees that
20 someone's using their invention, they can go to the
21 Patent Office and file a new application.

22 I want to make one thing crystal clear.
23 Align never went to the Patent Office and said, we
24 think Zendura FLX is infringing. We'd like to make
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.

1 And just to give you one example of one
2 claim, we have this language here on "elongation at
3 break of greater than about 200 percent." You will see
4 the overwhelming evidence of testing that occurred
5 before this lawsuit was filed and after is that the
6 elongation at break of the ClearCorrect aligners and
7 the materials in them is less than, less than this
8 requirement. There's no infringement.

9 Now, let me ask Mr. John Lahlouh to stand
10 up for just a moment. Because in this case, Align is
11 not just arguing that there is infringement, but they
12 are arguing that there was willful infringement.
13 Willful infringement.

14 Mr. Lahlouh was at Bay Materials -- has
15 been at Bay Materials for almost 25 years, and he was
16 centrally involved in the work that led to Zendura FLX.

17 That 2002 notebook was his. He's had a
18 distinguished materials scientist career for decades on
19 a whole wide range of industries, including the
20 materials used in dental aligners. And you're going to
21 hear, you're going to hear that the Zendura FLX
22 material reflected his own hard work and his own
23 innovation as well as that of his colleagues.

24 Now, Align has told us that they are
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

1 cover the basic idea of an intraoral scanner. Those
2 have been around for decades.

3 This covers a very specific feature used
4 in certain scenarios when after an initial scan, one of
5 the teeth is physically moved in a patient's mouth and
6 there needs to be a rescan. In that scenario, this
7 claim is directed to a very specific way of doing even
8 that. You have to use a particular type of surface
9 data.

10 And you will hear that the scanners that
11 Straumann sells don't use that very specific type of
12 rescan approach, doesn't use the surface data required
13 by that very particular approach for that very specific
14 scenario. So there too, there is no infringement.

15 One more note on the scanners. In sharp
16 contrast to the iTero scanner that Align sells, where
17 Align says to doctors, you have to use our scanner if
18 you want Invisalign, and then you will see the evidence
19 will show that that scanner is more cumbersome to use
20 with other aligners, that's part of their effort to
21 create that closed system and lock in customers, lock
22 in doctors.

23 In contrast, Straumann, which its scanner
24 business came from a company that was called Dental
25 Wings. And in product literature, they described it as

1 the Dental Wings Open System, Open System.

2 That was true for the original Dental
3 Wings products and is true today for the scanners at
4 issue in this case. They're open products.

5 ClearCorrect will sell a dentist dental
6 aligners even if they don't buy their scanner, okay?
7 And the Straumann scanner will work just as well with
8 any company's aligner. It's an open system. Open on
9 the supply of aligners. Open on the supply of
10 scanners.

11 And that's the way it's done in this
12 industry by other companies as well, with one
13 exception. Align. Align is the closed system company.
14 Align is the lock-in company. And Align has that
15 dominant market position in substantial part because of
16 its lock-in closed system approach.

17 Now, Ms. Durie showed you this clause in
18 the patent, the patent clause in the Constitution,
19 which says: To promote progress of science and the
20 useful arts.

21 And I'd like to ask you to consider, as
22 you hear the evidence in this case, is this set of
23 patent claims being made by Align here really to
24 promote the progress of science and the useful arts?
25 And I suggest to you the evidence will show it's not.

1 It's not. It's yet another step in the continuing
2 campaign to suppress competition from companies like
3 ClearCorrect.

4 And in the end, ladies and gentlemen,
5 ClearCorrect is the victim here. This is Ms. Durie's
6 slide, and she showed that ClearCorrect has lost money
7 in certain time periods. And that's true. That's
8 true.

9 It's not because they have a bad product.
10 You've heard and seen about documents that will be
11 introduced where Align recognizes how good that product
12 is and describes it as the best competitor out there in
13 terms of Straumann and describes the material itself as
14 a competitive threat.

15 ClearCorrect and the other companies
16 shown here -- there's one company missing. The other
17 companies shown here are suffering because of the
18 anticompetitive conduct of Align. ClearCorrect and
19 Straumann owe Align nothing for the patent claims
20 because there's no infringement for these patents.
21 None. ClearCorrect and Straumann owe zero.

22 But we are going to ask for compensation
23 for the anticompetitive conduct of Align.

24 We will present an economist named
25 Dr. Ray Perryman, and he will demonstrate and he will

1 show that even a very conservative estimate of the harm
2 suffered by ClearCorrect is in the hundreds of millions
3 of dollars because of lost sales attributable to the
4 anticompetitive conduct of Align. Anticompetitive
5 conduct that for years and years and years has been
6 unfairly tilting the playing field through this closed
7 system and these lock-in strategies.

8 And on top of all that, patent claims
9 that are not well founded. No infringement by Align --
10 I'm sorry, no infringement by ClearCorrect or
11 Straumann. And the real victim here is ClearCorrect.

12 This is a case, this is a case about
13 competition. What's fair and what's not. This is a
14 case about what Invisalign and Align have done to
15 maintain what you see here. Because if we go back one
16 slide, did you notice there was one company missing?

17 THE COURT: Counsel, you have two
18 minutes.

19 MR. MUELLER: Thank you, Your Honor.

20 Align. All of the numbers you see here
21 reflect those companies clustered at the bottom. The
22 missing company is Align, and Align is where Align is
23 not just because Align makes a good product. It does.
24 And credit where credit is due. Align is where Align
25 is because of the anticompetitive conduct.

10:42 1 And, ladies and gentlemen, after the
10:42 2 evidence is in, after we have presented documents and
10:42 3 witness testimony on all the issues in this case, we're
10:42 4 going to return to you and we're going to ask you to
10:42 5 right the wrongs, hold Align accountable for its
10:42 6 anticompetitive conduct, reject, reject their baseless
10:42 7 patent claims because there is no infringement, none,
10:42 8 the patents in this case.

10:42 9 We're going to ask you to hold them
10:42 10 accountable under federal and Texas state antitrust law
10:43 11 for locking in customers, creating a closed system,
10:43 12 suppressing competition, stacking the deck, and tilting
10:43 13 the playing field.

10:43 14 Once you have all the evidence, we will
10:43 15 ask you to return a verdict in favor of the defendants.

10:43 16 Thank you very much, ladies and
10:43 17 gentlemen.

10:43 18 THE COURT: Thank you, sir.

10:43 19 Ladies and gentlemen of the jury, we're
10:43 20 going to take our morning recess now. Before we part,
10:43 21 I have a couple of instructions I'm going to give you
10:43 22 about what to do while we're not -- while you all are
10:43 23 together but you're not with us.

10:43 24 The first is you may not discuss anything
10:43 25 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

1 the only thing that you may consider. So it would be
2 wasted time on your part to go do an independent
3 investigation.

4 Now, the good news is from now on every
5 time we break, I'm going to just say, please remember
6 my instructions, and not go through all this.

7 But with that being said, we'll have 10
8 or 15 minutes of recess. We'll take up our first
9 witness the plaintiff puts on when we return. And then
10 we'll go as close to lunch as -- as it takes us. And
11 then we'll see where we go from there in terms of
12 another witness or not.

13 So again, please don't discuss the case
14 while you're in the jury room.

15 THE BAILIFF: All rise.

16 (Jury exited the courtroom.)

17 THE COURT: Thank you. You may be
18 seated.

19 I thought the openings were very good. I
20 actually did not regret giving either of you
21 45 minutes, which I thought over the weekend I probably
22 would. And so thank you for that.

23 When we get back, we'll start with the
24 first witness, who is Dr. Derakhshan.

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

1 know, that's what I went to, you know, school for, that
2 passion to meet patients from all ages, whether they're
3 kids, teens, adults, and really make an impact.

4 But I also think it's important to, you know,
5 use the product, see what's happening in the office,
6 and really test a lot of what we innovate and continue
7 to innovate at Align.

8 Q. How did you come to work at Align?

9 A. I was studying for my dental boards, and
10 actually one of my classmates, who's also an
11 orthodontist, was telling me about this company. And I
12 went to visit them. They were looking for
13 orthodontists.

14 And I was just blown away and fascinated by
15 this new way of teeth straightening that could be
16 really done digitally, you know, through computers and
17 also through clear plastic. And it was just something
18 I really wanted to be a part of. Just there's a --
19 this new alternative to braces.

20 Q. How big was Align when you joined?

21 A. We were probably about less than 100 people or
22 so.

23 Q. And tell us just a little bit about those
24 early days.

25 A. Yeah. I mean, you know, you could imagine we

1 were a start-up. We were all just working together,
2 trying to figure out how do you move teeth, how do you
3 move teeth with plastic, just coming up with a lot of
4 different ideas and, you know, developing the software,
5 developing, you know, principles of tooth movement that
6 were similar to braces.

7 But also just trying to educate doctors
8 because, you know, this was a new way to teeth
9 straightening, and we had to get out there and educate
10 the profession about how to do this.

11 Q. What did Align's solution have in common with
12 braces at that time?

13 A. Well, as a doctor, in the end, for me, it's
14 about giving you the outcome that you want. And so
15 whether I'm going to use braces, whether I'm going to
16 use clear aligners or Invisalign, that's what's most
17 important or what's most similar. It's getting you
18 that quality outcome with a product that I can do based
19 on the treatment plan that I make for you.

20 Q. And what was different, from your point of
21 view, about braces and aligners?

22 A. Well, I think, you know, if we -- if you've
23 seen braces and, you know, there's an aligner, the
24 obvious is one is, you know, metal and they're glued to
25 teeth. And the other one is, you know, clear plastic

1 and removable.

2 Q. Did the Invisalign system as it came to be
3 involve anything other than just the aligners?

4 A. Oh, yes. I mean, you know, that's -- the end
5 product or the aligner is, you know, what you end up
6 putting in your mouth to move your teeth, but there's a
7 whole lot of innovation and sophistication behind that.

8 You need software, computer software, that
9 digitally models the teeth from beginning to end. You
10 need manufacturing to be able to fabricate and make the
11 aligners. There's a lot that goes into different
12 features into the aligners so we could be able to treat
13 all different types of cases. There's, you know, how
14 do we get models of your teeth and processing those
15 models. So there's a lot. It's really a full system.

16 Q. What about treatment planning? Can you just
17 tell us how that works?

18 A. Yeah. Treatment planning is when we receive a
19 3D representation of the model of your teeth. We
20 basically take your initial position based on the
21 doctor's treatment plan of how they want to move your
22 teeth and we map that out. We basically create like a
23 little roadmap in a computer program, moving your teeth
24 stage by stage or bit by bit until you get the final
25 result.

1 Q. You should have a binder in front of you
2 there. If you can turn to DTX-433 in your binder.

3 Can you tell us what that is?

4 A. Yes. This is the Invisalign system textbook.
5 It's the first textbook on the Invisalign system.

6 MS. DURIE: We offer DTX-433.

7 MR. MUELLER: No objection, Your Honor.

8 THE COURT: Admitted.

9 MS. DURIE: And if -- is it received?
10 I'm sorry.

11 And if I could please have you publish,
12 Mr. Smith, the first page of DTX-433.

13 BY MS. DURIE:

14 Q. And you've got a physical copy of a book next
15 to you that's PTX-898. Can you hold that up for the
16 jury and just explain to them what this is?

17 A. Yes. This is an Invisalign textbook. It's a
18 textbook that basically talks a lot about how to use
19 Invisalign, how -- what's the science behind
20 Invisalign. And part of the reason why we put this
21 textbook together, in addition to Professor Tuncay, is
22 really a way to educate, educate our doctors on how to
23 use our products and our innovations.

24 Q. Are you one of the people who wrote the book?

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,

1 usually what happens is, you know, you'd go to a
2 doctor's office, a dentist or an orthodontist. We
3 probably start with a dental exam, asking you, you
4 know, what you want to change about your teeth. We
5 might take some x-rays, and we have a conversation.
6 And we talk to you about, you know, your different
7 options, put together a treatment plan, and then decide
8 if we want to treat you with braces or Invisalign.

9 Q. Does the dentist or orthodontist take an
10 impression of your teeth?

11 A. Yes. If we -- we're going to start treatment,
12 we can take an impression, which is a physical
13 impression. So maybe some of you have had dental work
14 done, maybe a crown or a bridge. You might remember a
15 dentist sometimes puts some goop into a tray and sticks
16 it in your mouth for about two minutes to form and it's
17 to kind of harden up. You could have an impression
18 done like that.

19 Q. And is there an alternative way to have the
20 equivalent of an impression of your teeth?

21 A. Yeah. I mean, with innovation and technology,
22 now there's scanners that are available where
23 essentially you could do that digitally or through a
24 digital impression.

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 --

1 you could see the impact on the predictability of tooth
2 movement and the efficacy in the way it could move
3 teeth, but also in the way that the material would fit,
4 the way the material would feel, and even just the
5 comfort of the material from patients.

6 Q. Now, did Align test SmartTrack before making
7 it available to the public?

8 A. Yes.

9 Q. Were you involved in those clinical trials?

10 A. Yes.

11 Q. How many patients were treated in those
12 clinical trials?

13 A. Over 1,000 patients.

14 Q. And were the trials successful?

15 A. Yes.

16 Q. Can you tell us a little bit about what your
17 personal reaction was when you saw the results of those
18 clinical trials?

19 A. Yeah. I think we were all excited and
20 actually amazed. I mean, you know -- you know, our R&D
21 teams spend eight years. They test hundreds of
22 materials. And you go -- you go to a clinical trial,
23 and you see the results and you're like, wow, we have
24 this great material that's going to make patients'
25 lives better. It's going to make treatment more

1 efficient for them. It's going -- it's more
2 comfortable for them.

3 And so it's super exciting.

4 Q. Do you know how much money Align has invested
5 in research and development over the life of the
6 company?

7 A. Yeah. Over \$2 billion.

8 Q. That was billion with a B?

9 A. Yes, billion with a B.

10 Q. Has Align received any United States patents
11 for its innovations?

12 A. Yes. We have actually over 400 patents.

13 Q. If I could ask you to turn in your binder to
14 JTX-78, what do we see here?

15 A. This is a website in which we have the list of
16 our patents for the Invisalign system, which is our
17 clear aligner system, as well as our iTero scanner.

18 MS. DURIE: We offer JTX-78.

19 MR. MUELLER: No objection, Your Honor.

20 THE COURT: Admitted.

21 MS. DURIE: If we could please publish
22 the first page.

23 BY MS. DURIE:

24 Q. I see here there's a heading for Invisalign
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 you 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 onOrmco'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

1 inhouse and are conducting extensive testing, but based
2 on initial findings, it is a triple layer material,
3 probably a Zendura product.

4 Do you see that?

5 A. Yes.

6 MR. MUELLER: Let's go to Page 2.

7 BY MR. MUELLER:

8 Q. Mr. Kaza, in an e-mail on November 30th, 2018,
9 at 6:53, Page 2.

10 MR. MUELLER: There we go.

11 BY MR. MUELLER:

12 Q. He says, the second sentence -- talking about
13 materials. And he says in the second sentence: They
14 flipped the construction. Soft layer in the middle and
15 copolyester outside.

16 Do you see that?

17 A. Yes.

18 Q. So let's see what Mr. Hogan said in response.
19 He says to the vice president of research and
20 development: I think at this point there's not a lot
21 of mystery on what properties a material needs to be
22 like SmartTrack.

23 Now, he says: The issue is if they have
24 copied us, if they have copied us and have a
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,
12:21 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
12:27 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

1 meant by their discussion of their system. As a
2 doctor, that iTero, I can do what I want with that
3 iTero. I can order aligners, other braces and
4 anything. So that's an open system.

5 Q. Let's put it this way. We looked at e-mail
6 after e-mail in which the top executives at Align used
7 the term "closed system," true?

8 A. Yes. That's what was said.

9 MR. MUELLER: Nothing further. Thank you
10 very much, Dr. Derakhshan.

11 THE WITNESS: Thank you.

12 THE COURT: See, don't ever trust them
13 when they say final question.

14 (Laughter.)

15 THE COURT: That's what I've learned.

16 Ladies and gentlemen of the jury, please
17 remember my instructions. If you would be back -- it's
18 12:30. If you'd be back by 1:45, we will resume.

19 THE BAILIFF: All rise.

20 (Jury exited the courtroom.)

21 THE COURT: Thank you. You may be
22 seated.

23 MS. DURIE: May this witness be excused?

24 THE COURT: Is she -- not -- to leave?

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.

02:07 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
02:41 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
02:51 22 slide.

02:51 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
03:13 23 Court.

03:14 24 MS. FERRERA: I pass the witness.

03:14 25 MS. DURIE: Thank you.

REDIRECT EXAMINATION

BY MS. DURIE:

Q. Dr. Valley, just a couple more questions.

How long have you been prescribing Invisalign?

A. I was one of the very first orthodontists in the world to do the Invisalign system. I was fortunate to be kind of at the epicenter of when this all came to be.

Q. And why do you prescribe Invisalign to your patients today when they come in and they want a clear aligner?

A. I have choices. I feel Invisalign gives me the confidence that I can deliver that quality of care that I want for my patients.

MS. DURIE: Thank you. No further questions.

MS. FERRERA: Nothing further,
Your Honor.

THE COURT: Thank you, ma'am.

MS. DURIE: May the witness be excused?

THE COURT: Yes, ma'am.

MR. NASH: Your Honor, plaintiff calls
Dr. Karan Singh.

(The witness was sworn.)

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.

1 I analyze its specification, its claims, to figure out
2 what the claimed inventions, how they expect the
3 accused products to operate.

4 Next, I analyze accused products and how they
5 operate. And in this context I relied on conversations
6 with Dr. Valley, viewing -- reviewing videos,
7 instruction manuals, other material. And most
8 importantly, I looked under the hood of the software.
9 In other words, I analyzed the source code of the
10 software.

11 And then finally, as a third step, I saw
12 whether the source code matched the claim requirements
13 that was listed in the claim of the '936 patent.

14 Q. Well, Dr. Singh, I think you mentioned the
15 word "source code." Can you explain to the jury what
16 is source code?

17 A. Sure. Sorry. Yes.

18 So source code at a very high level is a set
19 of human readable instructions that computer
20 programmers write essentially to create software. And
21 basically it's how the software does what it does.

22 Q. Now, did you review source code for the Virtuo
23 Vivo devices?

24 A. I did.

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

coordinated on the -- to take care of those issues.

MR. NASH: Yes, Your Honor.

THE COURT: Ladies and gentlemen of the jury, we're about to take our afternoon recess. Let me go ahead before we break, though, and quickly tell you that what you're about to hear in the case is information that one side or the other has provided with the understanding that it would not be made public, that it would be in the courtroom, but only the lawyers and the people who are associated with the companies and you, the jurors, would get to hear it.

So at the end of the trial, I just want you to know I'm going to instruct you that you cannot reveal any of the information that you're about to hear while it's under the sealed section of -- I found it's better to tell you before you start hearing it than tell you afterwards and hope you remember what was what, so.

With that limitation I just gave, we will stand in recess for the next 15 minutes.

THE BAILIFF: All rise.

(Jury exited the courtroom.)

THE COURT: You may be seated.

Doctor, you may step down. You can sit 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] [REDACTED]

03:50 6 [REDACTED]

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03:56 6 [REDACTED]

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
04:15 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] [REDACTED]

04:33 13 [REDACTED]

04:33 14 [REDACTED]

04:33 15 [REDACTED] [REDACTED]

04:33 16 [REDACTED] [REDACTED] [REDACTED]

04:33 17 [REDACTED]

04:33 18 [REDACTED]

04:33 19 [REDACTED] [REDACTED] [REDACTED]

04:33 20 [REDACTED]

04:33 21 [REDACTED]

04:33 22 [REDACTED] [REDACTED] [REDACTED]

04:33 23 [REDACTED]

04:33 24 [REDACTED] [REDACTED]

04:33 25 [REDACTED] [REDACTED]

04:33 1 [REDACTED] [REDACTED] [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] [REDACTED] [REDACTED]

04:33 8 [REDACTED] [REDACTED]

04:34 9 [REDACTED]

04:34 10 [REDACTED]

04:34 11 [REDACTED]

04:34 12 [REDACTED] [REDACTED] [REDACTED]

04:34 13 [REDACTED]

04:34 14 [REDACTED] [REDACTED] [REDACTED]

04:34 15 [REDACTED]

04:34 16 [REDACTED] [REDACTED]

04:34 17 [REDACTED] [REDACTED]

04:34 18 [REDACTED] [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.

1 BY MR. HUNG:

04:35 2 Q. What do we see about stress relaxation for
04:35 3 SmartTrack compared to the old one, EX30?

04:35 4 A. Yeah. Actually what we did on this testing is
04:35 5 we make EX30 aligner. We also make a SmartTrack
04:35 6 aligner. So we put on a test setup to really monitor
04:35 7 the force applied to the tooth over five days' time.

04:35 8 So you can see with EX30, actually at Day 5,
04:36 9 you only have 10 percent force left. While SmartTrack,
04:36 10 you had more than 50 percent force left. So this is a
04:36 11 very huge improvement.

04:36 12 MR. HUNG: Okay. Let's look at the next
04:36 13 slide.

14 BY MR. HUNG:

04:36 15 Q. This is referring to a pilot study, a pilot
04:36 16 launch.

04:36 17 And can you explain the pilot launch?

04:36 18 A. Yeah. Because the bench on the laboratory
04:36 19 testing, we can see SmartTrack performs so well, we
04:36 20 really want to see in patient's mouth in clinical
04:36 21 settings, are they still perform as well as what we saw
04:36 22 in lab? So we really set up to do more than 1,000
04:36 23 patients study, have real patients who wear this for
04:36 24 treatment. That's the studies. We launch a study in
04:36 25 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 depositions.

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
11 format comply with those prescribed by the Court and
12 Judicial Conference of the United States.

13 Certified to by me this 12th day of July
14 2026.

15
16 /s/ Kristie M. Davis
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