

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

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EXOCAD GMBH and EXOCAD)	
AMERICA, INC.,)	
)	
Petitioner,)	
)	Case IPR2018-00788
vs.)	Patent 9,336,336 B2
)	
3SHAPE A/S,)	
)	
Patent Owner.)	

- - - - -

Deposition of ELI SABER Ph.D.

Alexandria, Virginia

Monday, April 1, 2019 - 9:02 a.m.

Reported by:

Marjorie Peters

Job no: 24884

1 DEPOSITION OF ELI SABER PhD,
 2 a witness herein, called by the Petitioner for
 3 examination, taken pursuant to the
 4 37 C.F.R. § 42.53(d)(1), by and before Marjorie
 5 Peters, a Registered Merit Reporter, Certified
 6 Realtime Reporter and Notary Public in and for the
 7 Commonwealth of Virginia, at Buchanan Ingersoll &
 8 Rooney, 1737 King Street, Suite 500, Alexandria,
 9 Virginia, on Monday, April 1, 2019, at 9:02 a.m.

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 2 EXAMINATION PAGE
 3 ELI SABER PhD
 4 BY MR. LITTMAN 5
 5 BY MR. LEE 257

7 I N D E X O F E X H I B I T S
 8 EXHIBIT PAGE
 9 Exhibit 2001 Saber declaration, 3Shape 13
 10 Exhibit 2001, IPR2018-00788
 11 Exhibit 1001 Deichmann U.S. Patent 14
 12 9,336,336
 13 Exhibit 1002 Mundy Declaration 23
 14 Exhibit 1005 Sachdeva US Patent No. 26
 15 7,156,655
 16 Exhibit 2003 3Shape Blanz article 77
 17 Exhibit 1013 Sachdeva US patent No. 79
 18 7,234,937
 19 Exhibit 1008 Kopelman US Patent 6,845,175 180
 20 Exhibit 1007 Wiedman article 196

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1 P R O C E E D I N G S
 2 ELI SABER PhD,
 3 a witness, having been first duly sworn, was
 4 examined and testified as follows:
 5 EXAMINATION
 6 BY MR. LITTMAN:
 7 Q. Good morning.
 8 A. Good morning.
 9 Q. Can you state your name for the record?
 10 A. Yes. Eli Saber.
 11 Q. Okay. So have you ever been deposed
 12 before?
 13 A. I have.
 14 Q. How many times?
 15 A. Twice.
 16 Q. What cases were those?
 17 A. The first one was, was a case with
 18 Canon. I was -- I vaguely remember now, it's been
 19 such a long time. It's probably around 2010-2011, I
 20 think it's somewhere. I can find the exact date if
 21 you want.
 22 And the second time was last year.
 23 I want to say either July or August, but I don't
 24 remember exactly. I can find the date if you want.
 25 Q. The first case you were -- were you an

1 expert in that case?
 2 A. I was.
 3 Q. What party were you representing?
 4 A. I was asked to serve as an expert
 5 representing -- well, serve as an expert on a Canon
 6 case.
 7 Q. For Canon?
 8 A. For Canon.
 9 Q. What was that case about?
 10 A. It was image processing technologies, I
 11 think, versus Canon, but don't quote me on the exact
 12 name of the other company.
 13 The attorney was Mr. Ryan Clark from
 14 Fitzpatrick or something. He could provide you with
 15 all of the details that you are looking for, but I
 16 vaguely remember the stuff from that case.
 17 Q. Do you remember if it was a district
 18 court litigation?
 19 A. I don't recall.
 20 Q. Was it a patent case, do you recall?
 21 A. Yes. There were two patents, two
 22 patents, I believe involved, or maybe one patent
 23 involved in the case that I came in where Image
 24 Processing Technologies -- I think that's the name
 25 of the company; I'm not 100 percent sure anymore --

1 but Image Processing Technologies asserted that
 2 Canon is infringing on such-and-such claims from the
 3 patent.
 4 Q. Do you recall, were your opinions about
 5 non-infringement?
 6 A. I was asked to provide an opinion on
 7 invalidity. This was before the IPR process.
 8 So I was asked to provide an opinion
 9 on invalidity, and then an opinion on
 10 non-infringement.
 11 Q. Then you said you were deposed last
 12 year, maybe July or August 2018; right?
 13 A. Right. I think more or less -- I think
 14 it might have been August, but I don't remember
 15 exactly. Maybe it was July. Somewhere in there.
 16 Q. What was that case called?
 17 A. This was a case Align v. 3Shape.
 18 Q. And which party asked you to -- let me
 19 ask you, did you prepare an expert opinion in that
 20 case?
 21 A. Yes. I was asked to serve as an expert
 22 on behalf of 3Shape.
 23 Q. And that was a patent case also, I
 24 assume?
 25 A. Yes. There were two patents -- three

1 patents involved that I was asked to provide expert
 2 opinion on.
 3 Q. Were your opinions about
 4 non-infringement?
 5 A. I was asked to serve as an expert in a
 6 non-infringement portion of the case.
 7 Q. Did you provide opinions on invalidity
 8 as well?
 9 A. No.
 10 Q. Do you recall what the patents were?
 11 A. Not off the top of my head. No.
 12 Q. Do you recall what the technology in the
 13 patents were?
 14 A. Yes. It was about modelling of teeth.
 15 Gingival models of tissue and teeth, which Align
 16 held a couple of patents on, and they were asserting
 17 claims against 3Shape.
 18 Q. Your opinions were that the various
 19 claims were not infringed; is that right?
 20 MR. LEE: Objection. 402.
 21 A. Well, I provided opinions -- I mean, I
 22 can't -- I don't know what is confidential, what is
 23 not confidential, so I would prefer to -- if you
 24 wanted to know the details, just contact Pepper
 25 Hamilton. I think the attorney was Mr. Colton

1 Petnik [PH], and he can provide you all of the
 2 details.
 3 But I served as an expert for
 4 non-infringement. It was an ITC case.
 5 Q. Do you know if the case is ongoing?
 6 A. I testified in September, and after
 7 that, I kind of dropped off. I haven't kept in
 8 touch.
 9 So I wasn't needed anymore.
 10 Q. Right. And you haven't testified at
 11 trial in that case?
 12 MR. LEE: Objection, 402, 611(b).
 13 A. I testified in the ITC court for that
 14 case.
 15 Q. Okay. So you also testified in the ITC
 16 court in that case. Do you remember when that was?
 17 MR. LEE: Objection 402, 611(b).
 18 A. It was sometime in September. I don't
 19 exactly recall the exact date, but it was last
 20 September.
 21 Q. Have you testified in court in any other
 22 matters?
 23 A. No, I have not.
 24 Q. So I know you have been deposed a couple
 25 of times. I just want to go through a couple of the

1 basics that perhaps you understand already.
 2 A. Please. Please.
 3 Q. So today I'm going to be asking you a
 4 series of questions. Do you understand that?
 5 A. Yes.
 6 Q. And your answers to those questions are
 7 under oath; do you understand that?
 8 A. I do.
 9 Q. And if you don't understand a question,
 10 can you ask that I clarify it; does that make sense?
 11 A. I will.
 12 Q. Also, since we have a court reporter
 13 taking a written record, I'll just ask you that if
 14 the answer is a yes or no that you actually answer
 15 it orally instead of a nod of the head; does that
 16 make sense as well?
 17 A. Yes. Thank you.
 18 Q. Then just kind of as a general matter,
 19 you know, a reminder that both of us should try not
 20 to talk too fast and not try to speak over each
 21 other. I will do my best at that, and if you can as
 22 well, that will be helpful for everyone as well.
 23 A. I will be as quiet as possible.
 24 Q. Okay. Is there anything that prevents
 25 you from testifying truthfully today that you can

1 signal processing umbrella.
 2 Q. Do you have any experience in the dental
 3 field?
 4 A. I'm sorry.
 5 Q. Do you have any experience in the dental
 6 field?
 7 A. What -- can you clarify what you mean by
 8 experience in the dental field?
 9 Q. Have you ever designed any dental
 10 products?
 11 A. You mean like a dental -- go in and do a
 12 dental restoration on a patient?
 13 Q. Let's start there. Have you ever done
 14 that?
 15 A. No, I'm not a dentist.
 16 Q. Have you designed any other products in
 17 the dental area?
 18 A. Again, are you asking me if I went in on
 19 to a patient and did some dental work? No, I have
 20 not.
 21 Q. Broader this time. Have you done
 22 anything in the dental area beyond that?
 23 A. No, I have not. I worked on the 3Shape
 24 case with... Yeah.
 25 Q. Okay. But aside from your work as an

1 think of?
 2 A. No.
 3 Q. Okay.
 4 So are you a Professor at the Kate
 5 Gleason College of Engineering; is that right?
 6 A. Yes. I'm a Professor at the Kate
 7 Gleason College of Engineering at the Rochester
 8 Institute of Technology.
 9 Q. You have been there since 2004; is that
 10 right?
 11 A. Well, I started at RIT as an adjunct
 12 faculty in 1997, and I taught courses along the way.
 13 I joined full time in 2004.
 14 Q. I see.
 15 A. Just to be...
 16 Q. Right.
 17 A. Careful. Precise and accurate.
 18 Q. What's your area that you teach?
 19 A. I teach -- I'm an electrical engineer by
 20 training. My Ph.D. is in electrical engineering,
 21 and I teach in the -- I mean, I can teach a variety
 22 of electrical engineering courses, but my specialty,
 23 or I'm specialized in the image video and computer
 24 vision area, which is normally under what we call
 25 the signal processing umbrella or multidimensional

1 expert witness in the case, you haven't; is that
 2 right?
 3 A. I haven't designed any dental products.
 4 Q. Okay. And you haven't taught any
 5 classes on dental products specifically; right?
 6 A. I taught classes on obviously computer
 7 vision quite a bit but not specifically on designing
 8 a dental product.
 9 (Exhibit 2001, Saber declaration, 3Shape Exhibit
 10 2001, IPR2018-00788, was marked for identification.)
 11 Q. So I have handed you what's marked as
 12 Exhibit 2001. Do you recognize this document?
 13 A. Yes.
 14 Q. What is it?
 15 A. It's my declaration.
 16 Q. It's the declaration you prepared in the
 17 Exocad v. 3Shape IPR 2018-00788; right?
 18 A. That's correct.
 19 Q. So if you could turn to Paragraph 25.
 20 If you could just read Paragraph 25, and like my
 21 question after you read it is, if there's anything
 22 beyond what's in that paragraph that you used to
 23 form the basis of your opinion?
 24 A. You want me to read it out loud?
 25 Q. No. You don't have to read it out loud.

1 A. Okay.
 2 Yeah. That pretty much sums it up.
 3 Q. So you didn't talk to any other person
 4 with experience in the dental field; is that right?
 5 A. No.
 6 Q. Did you speak with anyone with knowledge
 7 of the market for digital dentistry products?
 8 A. No.
 9 Q. And did you speak with anyone with
 10 knowledge of what dental lab technicians seek in
 11 digital dental products?
 12 A. No.
 13 Q. Did you speak with anyone with knowledge
 14 about what any users of dental products seek with
 15 dental digital products?
 16 A. No.
 17 (Exhibit 1001, Deichmann U.S. Patent 9,336,336, was
 18 marked for identification.)
 19 Q. I'll hand you this. This is another
 20 relevant document.
 21 So I have handed the witness a
 22 document that's marked Exhibit 1001. Do you
 23 recognize this document?
 24 A. I do.
 25 Q. What is it?

1 A. Well, it's hard to see what's exactly is
 2 shown in this figure, but I will look at the
 3 description.
 4 Q. Yeah. I was going to say, I'll refer
 5 you to column 25, lines 7 through 16, I think. Look
 6 at that as well if that helps you answer the
 7 question.
 8 A. What was the question again, sir?
 9 Q. So does Figure 11J and its corresponding
 10 description at column 25, lines 7 through 16, is
 11 that an example of the claim limitation I read about
 12 arranging the at least one 2D image in the 3D
 13 virtual model?
 14 MR. LEE: Objection, 403.
 15 A. Well, let's look at a description of the
 16 figure. So it says, 11J shows the 2D image 1101,
 17 which obviously is not easy to see here because of
 18 the poor xerography, with the cut-out area, 1130, so
 19 that's your cut-out area 1130, along the line 1131,
 20 which is -- looks like the line around more or less
 21 the oral cavity, of the lips. And the 3D virtual
 22 model 1102 is now visible in the cut-out area of the
 23 2D image. That is the description.
 24 Q. Right. So does that meet the claim
 25 limitation?

1 A. It's the patent 9,336,336.
 2 Q. This is the patent that's the subject
 3 matter of the IPR that we're here to discuss today?
 4 A. It is. It is.
 5 Q. So I just wanted to, before I jumped
 6 into your report, ask you a couple of overview
 7 questions about the '336 patent. So if you turn to
 8 Claim 1 which is on page 42, columns 25 and 26.
 9 If you see at the top of column 26
 10 starting around line 12, there's this claim
 11 limitation that says, "Arranged the at least one 2D
 12 image relative to the 3D virtual model in a virtual
 13 3D space such that the at least one 2D image and the
 14 3D model are aligned when viewed from a viewpoint
 15 and remain separate representations after being
 16 arranged, whereby the 3D virtual model and the at
 17 least one 2D image are both visualized in the 3D
 18 space"; do you see that?
 19 A. I do.
 20 Q. If you could turn to Figure 11J?
 21 A. 11J?
 22 Q. 11J on page 28.
 23 A. Yes, sir.
 24 Q. Is that showing an example of the claim
 25 limitation that I just recited?

1 MR. LEE: Objection, 403.
 2 A. In what sense are you asking? Can you
 3 be more specific of what your question is.
 4 Q. I'm just trying to get an idea if that's
 5 one example of something that is described in that
 6 claim limitation.
 7 MR. LEE: Objection, 403.
 8 A. Well, like I -- as I said, the
 9 description is there. It shows the 2D image of the
 10 cut-out area along the lines, and it shows a 3D
 11 virtual model that is now visible in the cut-out
 12 area.
 13 Q. Right. So does that meet the claim
 14 limitation?
 15 MR. LEE: Objection, 403.
 16 A. So the claim limitation says a range
 17 that at least one 2D image relative to the 3D
 18 virtual model in the 3D virtual space.
 19 So in this particular image in the
 20 3D virtual model is not visible. In the 3D virtual
 21 space such that the at least one 2D image and the 3D
 22 virtual model are aligned when viewed from the
 23 viewpoint and remain -- it's hard to tell from this
 24 figure, they're -- you know, the level of alignment
 25 and all of that; but it's -- when viewed from a

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