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UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE PATENT TRIAL AND APPEAL BOARD  
THERMALTAKE TECHNOLOGY CO., LTD. ) Case No. IPR2024-01230  
and THERMALTAKE INC. (a.k.a. ) U.S. Patent No. 10,690,336  
THERMALTAKE USA) )  
 )  
Petitioners, )  
 )  
vs. )  
 )  
LIAN LI INDUSTRIAL CO., LTD., and )  
CHEN, CHIEN-HAO, )  
 )  
Patent Owners. )  
\_\_\_\_\_ )

DEPOSITION OF ANDREW WOLFE  
Palo Alto, California  
Friday, April 25, 2025

REPORTED BY: Derek L. Hoagland  
CSR No. 13445

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LIAN LI INDUSTRIAL CO., LTD., and )  
CHEN, CHIEN-HAO, )  
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Patent Owners. )  
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Deposition of ANDREW WOLFE, taken before Derek L.  
Hoagland, a Certified Shorthand Reporter for the State  
of California, commencing at 10:32 a.m., Pillsbury  
Winthrop Shaw Pittman LLP, located at 2550 Hanover St.,  
Palo Alto, CA 94304.

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I N D E X

| WITNESS                 | PAGE |
|-------------------------|------|
| ANDREW WOLFE            |      |
| Examination by Mr. Chen | 6    |

DOCUMENTS/INFORMATION REQUESTED

| PAGE | LINE |
|------|------|
| 11   | 17   |

E X H I B I T S

| EXHIBIT      | DESCRIPTION                                                     | MARKED |
|--------------|-----------------------------------------------------------------|--------|
| Exhibit 2012 | United States Patent Application<br>Publication US 2017/0314777 | 45     |

E X H I B I T S (Referenced)

| EXHIBIT      | DESCRIPTION                                                                        | MARKED |
|--------------|------------------------------------------------------------------------------------|--------|
| Exhibit 1005 | Curriculum Vitae                                                                   | 15     |
| Exhibit 1001 | United States Patent 10,690,336                                                    | 28     |
| Exhibit 1004 | Wolfe Declaration                                                                  | 29     |
| Exhibit 1002 | Declaration of David B. Tuckerman,<br>Ph.D                                         | 44     |
| Exhibit 1012 | United States Patent Application<br>Publication US 2017/0314777                    | 45     |
| Exhibit 1014 | Certified Translation of a Japanese<br>Unexamined Patent Application<br>2005-51085 | 66     |
| Exhibit 1008 | US Patent 10,082,286 to Huang                                                      | 82     |

1 10:32 a.m. P R O C E E D I N G S

2

3 MR. CHEN: Good morning, Dr. Wolfe.

4 THE DEPONENT: Good morning.

5 MR. CHEN: Nice to see you again. How are you  
6 doing?

7 THE DEPONENT: Doing good.

8 MR. CHEN: It's been a long time since the TPL  
9 days, huh?

10 THE DEPONENT: Mm-hmm.

11 MR. CHEN: Do you still recall that case?

12 THE DEPONENT: I have done different things. I  
13 don't remember which case it was.

14 MR. CHEN: Okay.

15 THE DEPONENT: You used to be at Cooley, right?

16 MR. CHEN: Yes, yes. And I don't even remember,  
17 when we did the TPO case, if I was -- I was, I think, at  
18 White & Case. Yeah.

19 Yeah, we met before.

20 ANDREW WOLFE,

21 having first been duly sworn,

22 was examined and testified as follows:

23 EXAMINATION

24 BY MR. CHEN:

25 Q. So today we're here for the deposition of you in

Page 5

1 support of the petition in this IPR proceeding.

2 Do you understand that?

3 A. Yes.

4 Q. Okay. Great. Specifically, IPR No. 2024-01230,  
5 which will appear in later exhibits. You can verify,  
6 but I will present to you that's the IPR proceeding we  
7 are doing the deposition for today.

8 A. I understand.

9 Q. Okay. So can you please spell your full name  
10 for the record.

11 A. Sure. Andrew, A-n-d-r-e-w, Wolfe, W-o-l-f-e.

12 Q. So what have you done to prepare for today's  
13 deposition?

14 MR. WEBER: I would just object and counsel the  
15 witness not to reveal the content of attorney-client  
16 communications. But you otherwise may answer the  
17 question.

18 THE DEPONENT: So specifically for the  
19 deposition after the declaration had already been  
20 submitted?

21 BY MR. CHEN:

22 Q. Yes. Let's start with that.

23 A. I reviewed a number of the exhibits in the IPR,  
24 and I met with counsel twice to talk about those  
25 exhibits.

Page 6

1 Q. Okay. When did you meet with counsel to prepare  
2 for today's deposition?  
3 A. So today is Friday.  
4 Q. Mm-hmm.  
5 A. I met with counsel on Monday and Thursday.  
6 Q. Okay. So on Monday, which was the 21st of  
7 April, who did you meet with?  
8 A. With Mr. Weber.  
9 Q. Okay. How long did you meet with Mr. Weber?  
10 A. Approximately one hour.  
11 Q. During what time?  
12 A. I think it was in the morning, but I don't  
13 remember the exact time.  
14 Q. Okay. Where did you meet?  
15 A. We met over zoom. I was in my office. I don't  
16 know where he was.  
17 Q. Okay. So on Thursday, which is April 24th, who  
18 did you meet with?  
19 A. Again with Mr. Weber.  
20 Q. Okay. Where did the meeting take place?  
21 A. In this office, Pillsbury's Palo Alto office.  
22 Q. Okay. How long was the meeting?  
23 A. Approximately two hours.  
24 Q. Okay. That's good.  
25 Were those two meetings on Monday and Thursday

Page 7

1 the only preparation or work you've done since you  
2 provided your declaration in support of the petition in  
3 this IPR proceeding?

4 A. No.

5 Q. What else did you do in connection with this IPR  
6 proceeding after you provided your declaration in  
7 support of the petition, but before your Monday meeting  
8 with Mr. Weber?

9 A. I reviewed the board's initial determination and  
10 I reviewed some of the exhibits from the -- the IPR.

11 Q. Okay. Do you recall when you did those reviews?

12 A. Not completely.

13 Q. Okay. Just approximately would be fine.

14 A. I mean, some of it was done in the four or five  
15 days prior to Monday, but I believe I had also reviewed  
16 some materials a couple weeks before.

17 Q. Okay. So how much time have you spent reviewing  
18 those documents?

19 A. I don't know the actual number. Probably --  
20 since the declaration, probably somewhere in the 10 to  
21 20 hour range.

22 Q. So for today's deposition, is there any reason  
23 you cannot testify truthfully and completely?

24 A. Not that I'm aware of.

25 Q. Are you on any medication that you believe may

1       affect your testimony today?

2       A.       No.

3       Q.       Okay. Did you meet with any attorney after you  
4       provided your initial declaration but before Monday's  
5       meeting with Mr. Weber?

6       A.       I don't remember. There may have been a  
7       conversation about case status or scheduling.

8       Q.       Okay.

9       A.       I don't recall.

10      Q.       Do you recall when you completed the declaration  
11      in support of the petition in this IPR proceeding?

12      A.       There should be a signature date on it.

13              I signed it on July 26, 2024, so I must have  
14      completed it shortly before then.

15      Q.       Okay. So I see that you have a few documents in  
16      front of you. Can you please identify those documents  
17      for the record?

18      A.       Sure. They are all exhibits from IPR 2024-1230.  
19      I have Exhibit 1001, Exhibit 1004, Exhibit 1007,  
20      Exhibit 1008, Exhibit 1009, Exhibit 1010, Exhibit 1011,  
21      Exhibit 1012, and Exhibit 1014.

22      Q.       Okay. Are you aware of any marking or imitation  
23      on those exhibits that are in front of you?

24      A.       I have not placed or seen any annotations on  
25      these exhibits.

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1 Q. So these exhibits are in their original  
2 condition?

3 A. To the best of my understanding, yes.

4 Q. Counsel, we would like to have copies of these,  
5 just, you know, for our record.

6 MR. WEBER: Okay.

7 MR. CHEN: Yeah. I mean -- yeah.

8 MR. WEBER: I think they came directly from the  
9 record, but if you want -- you're saying you want  
10 exactly what's sitting there copied --

11 MR. CHEN: Yes.

12 MR. WEBER: -- and provided to you?

13 MR. CHEN: Yeah.

14 MR. WEBER: Okay.

15 THE DEPONENT: We can just provide it to the  
16 court reporter.

17 MR. CHEN: You can give them to me after the  
18 deposition, of those copies, or you can make copies of  
19 them, you know, however you would like, just for the  
20 record, that's all.

21 MR. WEBER: Yeah, that's not a problem.

22 MR. CHEN: Yeah.

23 MR. WEBER: If Dr. Wolfe wants to hold on to  
24 those, then we'll make a copy to those. Otherwise,  
25 we'll just hand them over --

1 MR. CHEN: Okay.

2 MR. WEBER: -- when we're done.

3 MR. CHEN: Sounds good. Okay. Thank you.

4 BY MR. CHEN:

5 Q. So which law firm are you working with in  
6 support of this IPR proceeding?

7 A. The Pillsbury law firm.

8 Q. Okay. Do you recall the names of the attorneys  
9 you worked with at Pillsbury in connection with this  
10 proceeding, other than Mr. Weber?

11 A. No. I can't recall them off the top of my head.

12 Q. Okay. Are there any attorneys you worked with  
13 at Pillsbury other than Mr. Weber?

14 A. I think there were probably some others that I  
15 talked to last year, but I don't remember.

16 Q. Did you work with any Pillsbury attorney when  
17 you were preparing your declaration?

18 A. Yes.

19 Q. Was Mr. Weber one of the attorneys you worked  
20 with at that time?

21 A. Yes.

22 Q. Okay. You testified that there might have been  
23 other attorneys, but you just don't recall who they  
24 were?

25 A. Yeah. I have a vague recollection of having

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1 Zoom meetings with more than one person, but I don't  
2 remember who else was present.

3 Q. I see.

4 A. I know that they all would have been Pillsbury  
5 attorneys.

6 Q. Okay.

7 A. But I don't remember names.

8 Q. Okay. I see.

9 So Mr. Weber was the main attorney you worked  
10 with in connection with this IPR proceeding. Is that  
11 fair?

12 A. I think that's fair.

13 MR. CHEN: And, Counsel, I just wanted to make  
14 sure that I'm pronouncing your name correctly. Weber?

15 MR. WEBER: That's right. That works.

16 MR. CHEN: Okay. Sure.

17 BY MR. CHEN:

18 Q. So, Dr. Wolfe, where are you employed right now?

19 A. I am an employee of Santa Clara University.

20 Q. Oh, okay. What is your position at Santa Clara  
21 University?

22 A. My employee position is assistant teaching  
23 professor.

24 Q. Assistant teaching professor. Okay.

25 Is that a tenured track position?

Page 12

1 A. No.

2 Q. Okay. Is that a regular position or a  
3 contractor position?

4 A. It is a full-time permanent employee position.

5 Q. Oh, okay. Regular --

6 A. Yes.

7 Q. -- position?

8 Okay. I see.

9 So other than Santa Clara University, are you  
10 employed by anyone else?

11 A. Not an employee. I have a sole proprietorship  
12 for my consulting activities.

13 Q. Okay. Well, in paragraph 2 of your  
14 declaration -- please feel free to refer to it -- you  
15 mentioned that you are the sole employee of Wolfe  
16 Consulting. I suppose that's what you meant?

17 A. Yes. I mean, again, I'm not an employment  
18 lawyer. So I don't know that I have the terminology  
19 right. But I don't take a salary, so -- and I don't --  
20 but -- but Wolfe consulting is a -- a d/b/a for --

21 Q. Oh.

22 A. -- me.

23 Q. Oh, okay. I see.

24 So in your own words, what does Wolfe Consulting  
25 do as its services?

1 A. I provide advice to high-tech companies. Over  
2 the years, sometimes that has been technical advice.

3 Q. Mm-hmm.

4 A. Sometimes that has been business advice,  
5 strategic planning, or market analysis. And sometimes I  
6 provide advice related to litigation, either as an  
7 expert witness or in developing strategy.

8 Q. Mm-hmm. Dr. Wolfe, where did you receive your  
9 bachelor's degree?

10 A. Johns Hopkins University.

11 Q. What was your major?

12 A. Electrical engineering and computer science.

13 Q. So I have a copy of Exhibit 5, but you have it  
14 too, so.

15 A. I do not.

16 Q. Oh, you do not. Oh, okay. So --

17 THE REPORTER: Would you like to mark it anew?

18 MR. CHEN: Well, it's already premarked, so just  
19 Exhibit 5. So I will just give you --

20 THE REPORTER: Would you like me to put a  
21 sticker on it?

22 THE DEPONENT: I believe it is Exhibit 1005. Is  
23 that correct?

24 MR. CHEN: Yes, Exhibit 1005. Correct. Yes.

25 MR. WEBER: Thanks.

1 (Referencing Exhibit 1005.)

2 BY MR. CHEN:

3 Q. So Dr. Wolfe, do you have Exhibit 1005 in front  
4 of you?

5 A. Yes.

6 Q. What is Exhibit 1005?

7 A. This would have been a copy of my CV.

8 Q. Mm-hmm.

9 A. As of sometime last summer.

10 Q. So under the section Education, it states:  
11 "BSEE in electrical engineering and computer  
12 science."

13 What does BSEE stand for?

14 A. I think it stands for Bachelor of Science in  
15 electrical engineering.

16 Q. Oh, I see. Okay.

17 So where did you go to graduate school?

18 A. Primarily at Carnegie Mellon, although I spent a  
19 year of my graduate school lent out to Stanford.

20 Q. Okay. What does that mean?

21 A. I was physically at Stanford. I had an office  
22 at Stanford. I was part of the group at Stanford, but I  
23 was technically still registered at Carnegie Mellon as a  
24 student.

25 Q. Oh, okay. Did you take classes at Stanford

Page 15

1 during that time?

2 A. I was allowed to audit classes, but I didn't  
3 register for any classes. At that point in my career, I  
4 wasn't taking classes anyway. I was working on my  
5 dissertation.

6 Q. Oh, I see. Oh, okay. So that was actually  
7 after your master's degree at Carnegie, I guess?

8 A. Yes.

9 Q. Oh, okay. So you went to graduate school at  
10 Carnegie first and obtained a master's degree in -- in  
11 1987?

12 A. I went to Carnegie Mellon in 1985 as a Ph.D.  
13 student. By 1987, I had enough credits that I was just  
14 allowed to fill out the paperwork and be given a  
15 master's degree.

16 Q. Okay.

17 A. And then I stayed enrolled, but I actually had  
18 worked out an agreement to physically spend a year at  
19 Stanford.

20 Q. I see. That makes sense. I did the same thing,  
21 so I -- I get what you're saying.

22 So you were enrolled at Carnegie Mellon as a  
23 Ph.D. student, but, you know, during the course of  
24 taking classes, you accumulated enough credits to obtain  
25 kind of a separate master's degree, which was what you

1 did?

2 A. Yes.

3 Q. Okay. Understood. Okay. And you obtained a  
4 doctoral degree in '92?

5 A. Officially, I left in September of '91. But it  
6 was after the graduation date for '91, so I actually got  
7 my degree the next May.

8 Q. Oh, I see. Okay. What was your dissertation  
9 for your Ph.D., if you recall?

10 A. It was on a design for a parallel computer  
11 architecture.

12 Q. Okay. In your recent employment section in your  
13 CV, there's an item labeled as "Lecturer."

14 Do you see that?

15 A. Yes.

16 Q. Is that the same position as what you mentioned  
17 earlier, assistant teaching professor, if I recall it  
18 correctly?

19 A. Not exactly.

20 Q. Okay.

21 A. September 2024, we started operating under a  
22 union contract.

23 Q. Okay.

24 A. Some new classifications were created.

25 Q. Mm-hmm.

1 A. I, over the summer, re-interviewed, reapplied  
2 for a different position and was given that -- that new  
3 position.

4 Q. Okay. Now, you mentioned that this copy of the  
5 CV was prepared right before you provided your  
6 declaration.

7 A. Yeah. This is --

8 Q. Okay.

9 A. -- from June or July of 2024.

10 Q. Okay. I suppose it was before your new  
11 interview with the university that you just mentioned?

12 A. I don't remember when the interview is, but I  
13 did not get an offer for the new position until August,  
14 and I didn't take the new position until September.

15 Q. I see. Okay. So I suppose since the CV, there  
16 has been some updates?

17 A. Yes.

18 Q. Okay. In that case, why don't you tell me what  
19 the updates are, so that -- you know.

20 A. I don't know if I can remember them all.

21 Q. Mm-hmm.

22 A. And that is one. As I said, there was a change  
23 in title.

24 Q. Okay.

25 A. And I'm sure at the end -- let's see. Let's

1 look at what else.

2 I believe I had one additional publication in  
3 the late summer.

4 Q. Okay.

5 A. And there would have been some additional  
6 testimony --

7 Q. I see.

8 A. -- between that time and now.

9 Q. Okay. I see. Okay.

10 So in paragraph 9 of your declaration, which is  
11 Exhibit 1004, you have mentioned that from '91 to '97,  
12 you served on the faculty of Princeton University as an  
13 assistant professor of electrical engineering.

14 Do you see that?

15 A. Yes.

16 Q. Was that a tenured track position?

17 A. Yes.

18 Q. Okay. Let me see.

19 Did you get tenured?

20 A. I did not. I left.

21 Q. Okay. Let me see.

22 What did you do after you left Princeton?

23 A. I moved to Santa Clara.

24 Q. Mm-hmm.

25 A. And I took a -- an executive role at a company

Page 19

1 that was at that time called S3, that made components  
2 for PCs. And then as the business of that company  
3 changed, I took on a variety of other roles and the  
4 business changed. We began making more consumer  
5 products at that time. So I had a number of roles at  
6 that company for the next five or six years.

7 Q. I see. So what prompted the move, if you  
8 recall?

9 A. Princeton did not offer to put me up for tenure  
10 the first year I was eligible.

11 Q. Okay.

12 A. So I started contacting other universities --

13 Q. Mm-hmm.

14 A. -- to see if I could get another position, and  
15 word got out in industry that I was job hunting and I  
16 just started getting calls from --

17 Q. Oh. Okay.

18 A. -- computer companies, and the founders of S3 --

19 Q. Mm-hmm.

20 A. -- contacted me --

21 Q. Mm-hmm.

22 A. -- and offered me twice as much money and ten  
23 times the resources that I had at the university.

24 Q. Got it. Understood. Like an offer you couldn't  
25 refuse?

1 A. Yes.

2 Q. How long did you work at S3?

3 A. From May '97 through October 2002 as an  
4 employee, and then I consulted for them through  
5 March 2003.

6 Q. Did you say '97?

7 A. Yes.

8 Q. Oh, I see. So it looks like during that time  
9 you also taught at Stanford. Is that right?

10 A. I did. I taught one class at Stanford.

11 Q. I see.

12 A. I think three times.

13 Q. I see. Okay. So what did you do after you  
14 concluded your work at S3?

15 A. I was working with a small team to try to get a  
16 startup funded. But while I was doing that, you know,  
17 one of my roles at S3 had been to oversee the legal  
18 department.

19 Q. Mm-hmm.

20 A. And I knew a lot of people who worked on patent  
21 litigation, and I got a call asking if I would do some  
22 expert work. I had done some before, when I was at  
23 Princeton. And I started doing some expert work, and  
24 within six or seven months it was clear that I could  
25 have a lot of potential to do expert work, so I started

Page 21

1 doing that full time and just...

2 Q. Okay.

3 A. By then I had already moved into an office, and  
4 I just did consulting, both technical consulting, I was  
5 doing some business strategy consulting for Xerox Park  
6 right up the street here, and the various consulting  
7 jobs were keeping me busy full time --

8 Q. Mm-hmm.

9 A. -- until -- until about 2013, when I contacted  
10 Santa Clara and asked if I could do some teaching.

11 Q. Oh, I see. Okay. So you have been teaching at  
12 Santa Clara University for approximately 12 years?

13 A. Yes, initially part time.

14 Q. Okay.

15 A. And then I don't remember exactly, somewhere  
16 around 2018, 2019 I went full time.

17 Q. When did you start Wolfe Consulting?

18 A. Probably mid-2003.

19 Q. Okay. So other than teaching at Santa Clara  
20 University, you were also working on the side doing  
21 consulting work, I suppose?

22 A. Yes.

23 Q. Okay. I see.

24 Does Santa Clara University know about your  
25 consulting work?

1 A. They know that it exists, yes.

2 Q. Okay. Are you teaching right now at Santa Clara

3 University?

4 A. I taught yesterday.

5 Q. Oh, okay. What was the class?

6 A. I am teaching what we call realtime systems.

7 It's a more advanced microprocessor systems class.

8 Q. Uh-huh.

9 A. Building embedded devices around ARM processors.

10 Q. Mm-hmm.

11 A. And then on Mondays, I'm teaching a printed

12 circuit board design and manufacturing class.

13 Q. I see. How many classes are you teaching right

14 now?

15 A. Right now, I'm only teaching two because I have

16 a lot of other things they consider teaching

17 responsibilities.

18 Q. Okay.

19 A. I have one -- I have five labs a week that I

20 supervise, and I have six senior thesis teams that I am

21 supervising at the moment.

22 Q. Okay.

23 A. So those all count as fractional teaching --

24 fractional classes.

25 Q. I see. Okay.

1 A. I teach seven course equivalents a year.

2 Q. So the labs and the senior thesis count as,

3 like, five, courses?

4 A. No, no. I taught two courses in -- earlier in

5 the year as well.

6 Q. Oh, I see?

7 A. So I will teach four actual courses this year.

8 Q. Okay.

9 A. And something like 14 labs and 6 senior thesis.

10 Q. Okay. And then those will count as three?

11 A. Those count as three, approximately.

12 Q. Okay. On page 1 of your CV, you mention that

13 you worked with HTC.

14 Do you see that?

15 A. Yes.

16 Q. Do you recall what subject matter you worked

17 with HTC on?

18 A. A number of things. I mean, always with phones,

19 I think.

20 Q. Okay.

21 A. But -- and I think for HTC, it's always been

22 patent defense cases. I did two trials in the Eastern

23 District, where they were being sued on some infrared

24 remote control technology that was in the phones. I

25 worked with them on their FRAND case against Ericsson,

1 and I think on some earlier cases where they had various  
2 software capabilities in Android that had been accused  
3 of violating patents.

4 Q. I see. Okay.

5 THE REPORTER: You said FRAND?

6 THE DEPONENT: F-R-A-N-D.

7 THE REPORTER: Thank you.

8 BY MR. CHEN:

9 Q. So let's see. So let's go back to your  
10 declaration, which is Exhibit 1004. Do you recall when  
11 you first started working on the declaration?

12 A. No, I don't recall.

13 Q. Do you recall who provided the first draft of  
14 your declaration?

15 A. I did.

16 Q. Did you work with Mr. Weber on your declaration?

17 A. Yes.

18 Q. Let's turn to page 13 of your declaration, which  
19 is Exhibit 1004.

20 A. Okay.

21 Q. So there's a Section 3.1 about level of ordinary  
22 skill in the art.

23 Do you see that?

24 A. I do.

25 Q. So that section includes paragraphs 24 through

Page 25

1 29.

2 A. Yes.

3 Q. Did you write the text in paragraphs 24 through  
4 29?

5 A. Some of it.

6 Q. Okay. Do you recall which paragraphs were  
7 written by you?

8 A. Not specifically. I know that paragraph 27 was  
9 written by me.

10 Q. Okay.

11 A. And 28 was definitely written by me. Paragraph  
12 25 definitely was not.

13 Q. Okay.

14 A. But I don't recall exactly how the rest of them  
15 came to be.

16 Q. And you -- you testified you don't recall  
17 exactly how the rest of them came to be. Did you  
18 receive the text in some of those paragraphs from  
19 counsel?

20 A. I don't recall. I don't recall if I derived  
21 them from a prior declaration or if I received them from  
22 counsel in this -- in this case.

23 Q. Oh, I see?

24 A. In some cases, they're -- they're recitations of  
25 my understanding of -- of legal factors, and I wouldn't

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1 have drafted the legal descriptions myself. I would  
2 have gotten them at some point along the line from an  
3 attorney.

4 Q. Okay. So Section 3.2, Claim Construction -- I'm  
5 sorry. Strike that.

6 Section 3.2, Claim Interpretation, on page 17 of  
7 your declaration, which is Exhibit 1004.

8 Do you see that?

9 A. Yes.

10 Q. So it includes paragraphs 30 and 31, right?

11 A. Yes.

12 Q. Did -- did you write those paragraphs?

13 A. I don't recall. I think it's most likely that I  
14 pulled them from a prior declaration and re-reviewed  
15 them.

16 Q. Mm-hmm.

17 A. And I don't recall how they got in prior  
18 declarations.

19 Q. So for Section 3.3 through Section 3.4 from  
20 page 16 to 20 of your declaration, which is  
21 Exhibit 1004, same answer as to where the text came  
22 from?

23 A. Yes. I reviewed it as part of this declaration,  
24 but I think I probably pulled it from an earlier  
25 declaration.

1 Q. I see.

2 MR. CHEN: So we've been on the record for  
3 about, like, 50 minutes, I guess.

4 THE REPORTER: Would you like to go off?

5 MR. CHEN: Yeah. Let's take a short break.

6 (A recess transpires.)

7 MR. CHEN: So welcome back, Dr. Wolfe. So let  
8 me actually share with you Exhibit 1001.

9 (Referencing Exhibit 1001.)

10 MR. CHEN: Which I think you have a copy, but.

11 Mr. Court Reporter, do you need a copy, or  
12 what's --

13 (Discussion off the record.)

14 MR. WEBER: You've talked about his deck. I  
15 don't know if.

16 MR. CHEN: Yeah, so actually, can we just go off  
17 the record for a moment?

18 (A recess transpires.)

19 MR. CHEN: We can go back on record.

20 BY MR. CHEN:

21 Q. So, Dr. Wolfe, do you have Exhibit 1001 in front  
22 of you?

23 A. Yes.

24 Q. What is Exhibit 1001?

25 A. United States Patent 10,690,336.

1 Q. And do you have Exhibit 1004 in front of you?

2 A. Yes.

3 (Referencing Exhibit 1004.)

4 BY MR. CHEN:

5 Q. Just for the record, again, what is

6 Exhibit 1004?

7 A. The declaration I put in for IPR 2024-1230.

8 Q. Does Exhibit 1004 constitute your entire  
9 opinions supporting the petition in this IPR proceeding?

10 MR. WEBER: Objection to form.

11 THE DEPONENT: I am concerned that that's a  
12 legal question. This was the entire opinion that I  
13 submitted at the time of the petition. If you ask me  
14 other questions, I will answer them.

15 BY MR. CHEN:

16 Q. Dr. Wolfe, does Exhibit 1004 constitute the  
17 entire opinion that you submitted at the time of the  
18 petition?

19 A. Yes.

20 Q. Is there anything missing in Exhibit 1004 that  
21 you are aware of?

22 MR. WEBER: Objection to form.

23 THE DEPONENT: I'm not sure I understand the  
24 question. Exhibit 1004 includes all of my opinions with  
25 respect to the issues that I was aware of at the time of

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1 the petition.

2 BY MR. CHEN:

3 Q. Okay. Dr. Wolfe, is there anything missing in  
4 Exhibit 1004 to support the petition, that you are aware  
5 of?

6 MR. WEBER: Objection to form.

7 THE DEPONENT: I'm not aware of anything that's  
8 missing, but as I said, there have been new issues and  
9 new allegations brought up since then that I may be  
10 asked to respond to at a later time.

11 BY MR. CHEN:

12 Q. So to clarify, I'm talking about the petition.  
13 I am not talking about anything that arose later. So  
14 with that, let me ask the question again.

15 Dr. Wolfe, with respect to the petition in this  
16 IPR proceeding, is there anything missing in  
17 Exhibit 1004 to support the petition, that you are aware  
18 of?

19 MR. WEBER: Objection to form.

20 THE DEPONENT: I am not aware of anything in  
21 Exhibit 1004 that is missing, and I believe that it  
22 adequately supports the petition. But as the PTAB or  
23 the patent owners raise questions, it may benefit the  
24 PTAB for me to provide additional explanation in the  
25 future.

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1 BY MR. CHEN:

2 Q. I understand that. But, again, I'm talking  
3 about the petition at the time when it was submitted  
4 with your declaration, which is Exhibit 1004.

5 Dr. Wolfe, with respect to the petition in this  
6 IPR proceeding, at the time when the petition was filed,  
7 is there anything missing in Exhibit 1004 to support the  
8 petition, that you are aware of?

9 MR. WEBER: Objection to form. Asked and  
10 answered.

11 THE DEPONENT: Not that I'm aware of at that  
12 time.

13 BY MR. CHEN:

14 Q. Is there anything missing in Exhibit 1004 in  
15 support of the petition that you believe now should have  
16 been included?

17 A. I believe -- there is nothing additional that I  
18 think should have been included. I think that the  
19 declaration is sufficient. Although, like all written  
20 materials, there may be times where additional  
21 explanation or clarification is beneficial.

22 Q. There is nothing missing in Exhibit 1004 in  
23 support of the petition that you believe now should have  
24 been included, correct?

25 A. If I understand the question correctly, I don't

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1 think there was anything else that should have been  
2 included at the time of the petition. That doesn't  
3 necessarily mean that as questions are raised that they  
4 would not benefit from further clarification.

5 Q. Dr. Wolfe, as you submitted Exhibit 1004 as the  
6 declaration in support of the petition at the time of  
7 the petition's filing, there was absolutely nothing  
8 missing to support the petition, correct?

9 MR. WEBER: Objection to form. And asked and  
10 answered.

11 THE DEPONENT: Again, I'm not quite sure what  
12 you mean. I mean, there are things I could have put in  
13 there that I didn't, but I put in what I believed at the  
14 time and believe now were sufficient opinions to support  
15 the positions taken in the petition that relied on my  
16 opinions.

17 BY MR. CHEN:

18 Q. Dr. Wolfe, do you stand by everything stated in  
19 your declaration as Exhibit 1004?

20 A. Yes, at this time I do.

21 Q. Do you stand by every sentence in your  
22 declaration as Exhibit 1004 in support of the petition?

23 MR. WEBER: Objection to form.

24 THE DEPONENT: Yes, as I intended those  
25 sentences in context.

1 BY MR. CHEN:

2 Q. Dr. Wolfe, do you stand by every word in your  
3 declaration as Exhibit 1004 in support of the petition?

4 MR. WEBER: Objection to form.

5 THE DEPONENT: I can't guarantee you that  
6 there's not a single word in there that's misspelled  
7 or -- or misstated, but I have reviewed the petition,  
8 and as far as I am aware right now, all of the opinions  
9 in there are correct.

10 BY MR. CHEN:

11 Q. Dr. Wolfe, do you stand by every figure included  
12 in your declaration as Exhibit 1004 in support of the  
13 petition?

14 MR. WEBER: Objection to form.

15 THE DEPONENT: All of the figures in the  
16 declaration represent my opinions or whatever other  
17 information they are described as representing in the  
18 declaration.

19 BY MR. CHEN:

20 Q. That is not answering my question. Let me ask  
21 the question again.

22 Dr. Wolfe, do you stand by every figure included  
23 in your declaration as Exhibit 1004 in support of the  
24 petition?

25 MR. WEBER: Objection to form.

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1 THE DEPONENT: Again, I'm not sure I understand.  
2 I did not create every figure. But for the purposes  
3 that I included them, I stand by the use of the figures  
4 in my opinions.

5 BY MR. CHEN:

6 Q. Okay. Dr. Wolfe, do you stand by the use of  
7 every figure included in your declaration as  
8 Exhibit 1004 in support of the petition?

9 MR. WEBER: Objection to form. Asked and  
10 answered.

11 THE DEPONENT: I think that's the same question.  
12 Same answer.

13 BY MR. CHEN:

14 Q. It's not the same question, because you stated  
15 that the figures were not prepared by you. So right now  
16 I'm focusing on the use of the figures included in the  
17 declaration based on your testimony. So please bear  
18 with me. I will ask the question again.

19 Dr. Wolfe, do you stand by the use of every  
20 figure included in your declaration as Exhibit 1004 in  
21 support of the petition?

22 A. I stand by the use of each figure in my  
23 declaration as it's used in the declaration to support  
24 my opinions.

25 Q. Well, Dr. Wolfe, my question was about the use

1 of a figure in support of the petition. Your answer was  
2 about supporting your own opinions. So please bear with  
3 me. Just for the clarity of the record, allow me to  
4 answer -- allow me to ask the question again.

5 Dr. Wolfe, do you stand by the use of every  
6 figure included in your declaration as Exhibit 1004 in  
7 support of the IPR petition?

8 MR. WEBER: Objection to form. Asked and  
9 answered.

10 THE DEPONENT: I did not write the petition, and  
11 I did not write the citations to my declaration, so I am  
12 not representing that my declaration was properly  
13 characterized in the petition. That's up to someone  
14 else. My declaration is the bounds of my opinion.

15 BY MR. CHEN:

16 Q. I understand. I'm not saying that your  
17 declaration is a position. Okay.

18 Dr. Wolfe, do you agree that your opinions as  
19 presented in Exhibit 1004 support the petition in this  
20 IPR proceeding?

21 A. They were intended to support the petition, but,  
22 again, I didn't write the petition and I didn't approve  
23 the petition. So whoever wrote the petition, I hope and  
24 trust that they accurately used my opinions to support  
25 it, but I am -- I can't verify that.

1 Q. Dr. Wolfe, sitting here today, you have no idea  
2 whether the petition in this IPR proceeding is supported  
3 by your opinions as presented in Exhibit 1004, correct?

4 MR. WEBER: Objection to form.

5 THE DEPONENT: No, I wouldn't say I have no  
6 idea. I have enough experience in this to expect and to  
7 trust that for the -- at least the most part, they are,  
8 but I have not and don't have the legal skills to make  
9 that determination. That's the attorney's job, is to  
10 reference my opinions in the petition. It's not my job  
11 to audit or correct whether or not they've referenced  
12 them properly.

13 BY MR. CHEN:

14 Q. Dr. Wolfe, is it fair to say that you have not  
15 verified whether your opinions in Exhibit 1004 support  
16 the petition in this IPR proceeding?

17 MR. WEBER: Objection to form.

18 THE DEPONENT: No. I -- I am certainly aware  
19 that they generally support the petition, but I have not  
20 gone threw the petition line by line or citation by  
21 citation to see whether or not each and every one of  
22 those are correct.

23 BY MR. CHEN:

24 Q. Did you see a draft of the position before it  
25 was filed?

1 A. Yes.

2 Q. Did you see a draft of the petition before you  
3 completed your opinions in Exhibit 1004?

4 A. I don't recall.

5 Q. Did you work on a draft of the petition in this  
6 proceeding before the petition was filed?

7 MR. WEBER: Objection to form.

8 THE DEPONENT: I reviewed it and I discussed it  
9 with counsel. To the extent that that's working on it,  
10 yes.

11 BY MR. CHEN:

12 Q. Did you rely on the draft petition in rendering  
13 your opinions as presented in Exhibit 1004?

14 A. No.

15 Q. Dr. Wolfe, you stated that you work on IPR  
16 proceedings enough to know that you can trust and expect  
17 counsel to draft the petition based on your declaration,  
18 correct?

19 MR. WEBER: Objection to form.

20 THE DEPONENT: No. I think I was being much  
21 more specific to this case, where I have already seen an  
22 initial determination, and that allows me to reflect and  
23 understand the positions that counsel took and see that  
24 they are supported by my declaration.

25 ///

1 BY MR. CHEN:

2 Q. What did you do, Dr. Wolfe, to confirm that the  
3 petition as filed was supported by your declaration in  
4 Exhibit 1004?

5 A. Nothing. That's not my responsibility. I made  
6 sure that my declaration reflected my opinions.

7 Q. Given that you did nothing to confirm that the  
8 petition as filed was supported by your declaration in  
9 Exhibit 1004, is it fair to state that you do not know  
10 if the petition is properly supported by your opinions  
11 in Exhibit 1004?

12 MR. WEBER: Objection. Form.

13 THE DEPONENT: I don't know for certain. I am  
14 not aware of any reason or anything at all in the  
15 petition that's not supported by my declaration, but I  
16 haven't verified that.

17 BY MR. CHEN:

18 Q. Given that you did nothing to confirm that the  
19 petition as filed was supported by your declaration in  
20 Exhibit 1004, Dr. Wolfe, is it fair to state that you do  
21 not have any information as to whether the petition is  
22 supported by your opinions in Exhibit 1004 one way or  
23 the other?

24 MR. WEBER: Objection to form.

25 THE DEPONENT: No. I would not agree with that.

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1 Having read the patent owner's preliminary response and  
2 the PTAB's initial determination, it's very clear that  
3 in general the petition is supported by my declaration.

4 BY MR. CHEN:

5 Q. So you stated that you derived that information  
6 from the patent owner's preliminary response and the  
7 PTAB's initial determination, correct?

8 A. Yes.

9 Q. At the time of the filing of the petition, is it  
10 fair to state that you did not have any information as  
11 to whether the petition was supported by your opinions  
12 in Exhibit 1004 one way or the other?

13 MR. WEBER: Objection to form.

14 THE DEPONENT: I wouldn't say that. I -- my  
15 responsibility was to make sure that my declaration  
16 reflected my opinions. Counsel's responsibility was to  
17 ensure that the petition reflected my opinions in the  
18 declaration accurately where it relied on them. I had  
19 seen drafts. The drafts accurately reflected my  
20 opinions. So I had some information, but I did not take  
21 on nor have any reason to take on the responsibility of  
22 ensuring that the petition as filed was completely  
23 consistent with my declaration. That was someone else's  
24 responsibility.

25 ///

1 BY MR. CHEN:

2 Q. Dr. Wolfe, did you review the final draft of the  
3 petition as filed at the time of the filing of this IPR  
4 proceeding?

5 A. I don't recall.

6 Q. So let's turn to Exhibit 1001.

7 A. Okay.

8 Q. Dr. Wolfe, what is Exhibit 1001?

9 A. It is still US Patent 10,690,336.

10 Q. Are you familiar with this document,  
11 Exhibit 1001?

12 A. I'm familiar with Exhibit 1001.

13 Q. In your words, what is the subject matter of  
14 Exhibit 1001?

15 A. Exhibit 1001 describes the structure of certain  
16 fans that include connectors and illumination.

17 Q. When was the last time you reviewed  
18 Exhibit 1001?

19 A. Last weekend.

20 Q. Did you review Exhibit 1001 on Monday,  
21 April 21st?

22 A. I discussed portions of it with counsel, but I  
23 did not review it in its entirety on the 21st.

24 Q. Did you review Exhibit 1001 on Thursday,  
25 April 24th?

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1 A. No. Again, I discussed portions of it with  
2 counsel, but I did not review it in its entirety.

3 Q. But is it fair to say that you still have enough  
4 memory and familiarity with Exhibit 1001 such that I can  
5 ask you questions on it for you to answer them  
6 substantively?

7 A. Yes.

8 Q. So please turn to page 8 of Exhibit 1001.

9 A. Okay.

10 Q. Do you see claim 1 in column 4?

11 A. Yes.

12 Q. So around line 7 in column 4 of Exhibit 1001 on  
13 page 8, do you see a claim phrase, quote, a power socket  
14 in a first connector on one side of the body, unquote.

15 A. Yes.

16 Q. Do you understand what this claim phrase means?

17 A. Yes.

18 Q. So in your understanding, what does, quote, one  
19 side of the body, unquote mean?

20 A. In some sense, it would depend on how you orient  
21 the device, but it would mean that if you orient the  
22 device in a certain way, that all of the elements listed  
23 there are on the same side with respect to the center,  
24 so, for example, on the left side or on the right side.

25 Q. So in column 4 on page 8 of Exhibit 1001, at

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1 about claim -- strike that.

2 In column 4 on page 8 of Exhibit 1001, at about  
3 lines 5 and 6, there is a claim phrase, quote, an  
4 illumination area on at least two sides of the fan at  
5 top of the body, unquote. Did you see that?

6 A. Yes.

7 Q. In your own words, what does an illumination  
8 area mean?

9 A. Illumination area is not a specific term of art,  
10 and I don't recall seeing it defined in the  
11 specification. So I would apply the plain meaning,  
12 which in context, to me, is an area that's being  
13 illuminated.

14 MR. CHEN: What time is it?

15 MR. WEBER: About 12:20.

16 MR. CHEN: 12:20. So we have been on the record  
17 for about an hour, I believe. Let's take the lunch  
18 break.

19 MR. WEBER: That's fine.

20 MR. CHEN: Okay. Let's come back maybe around  
21 1:30. Is that okay?

22 THE DEPONENT: Whatever you guys want.

23 MR. CHEN: Okay.

24 MR. WEBER: Okay. Dr. Wolfe, if you need  
25 shorter to get this more efficiently processed, that's

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1 fine.

2 THE DEPONENT: I don't know if we can get food  
3 shorter or not.

4 MR. WEBER: I'm having food brought in for all  
5 of us. If we want sandwiches, salads and stuff --

6 MR. CHEN: You've already ordered?

7 MR. WEBER: Yeah.

8 MR. CHEN: Oh, okay.

9 MR. WEBER: It's supposed to be here about  
10 12:30.

11 MR. CHEN: Oh, okay. So, yeah, sure.

12 MR. WEBER: We'll do 1:15 or -- because I have  
13 to take a call. But...

14 MR. CHEN: Oh, okay. Yeah. So maybe 1:15,  
15 1:20-ish?

16 MR. WEBER: Yeah. I mean, it will definitely be  
17 by 1:15, to give us time.

18 MR. CHEN: Sure. Okay. Say 1:15.

19 (A recess transpires.)

20 BY MR. CHEN:

21 Q. Welcome back, Dr. Wolfe. So earlier you  
22 testified that you have reviewed additional documents  
23 since the filing of the petition. Do you recall that?

24 A. Yes.

25 MR. WEBER: Object to form. Go ahead.

1 BY MR. CHEN:

2 Q. Did the documents that you reviewed include the  
3 patent owner's preliminary response?

4 A. No. I don't think so. I think -- I think I did  
5 mention that before, that I -- I don't think I have  
6 actually reviewed the patent owner's preliminary  
7 response. I reviewed the declaration, the exhibits to  
8 the patent owner's preliminary response, but not the  
9 body of it.

10 Q. Oh, okay. Let me clarify.

11 So, Dr. Wolfe, among the documents you reviewed  
12 after the filing of the petition, did you review the  
13 expert declaration in support of the patent owner's  
14 preliminary response?

15 A. Yes, I did.

16 Q. Did the patent owner's expert's declaration  
17 change your opinions as included in Exhibit 1004 in any  
18 way?

19 A. No.

20 MR. CHEN: Let me provide Exhibit 2002.

21 (Referencing Exhibit 2002.)

22 BY MR. CHEN:

23 Q. So, Dr. Wolfe, do you have Exhibit 2002 in front  
24 of you?

25 A. Yes.

1 Q. What is Exhibit 2002?

2 A. With respect to IPR 2024-01230, it is the  
3 declaration of David B. Tuckerman, Ph.D. in support of  
4 patent owner's preliminary response.

5 Q. Do you know Dr. Tuckerman?

6 A. Not that I can recall.

7 MR. CHEN: Okay. I am providing you with  
8 Exhibit 1012.

9 (Referencing Exhibit 1012.)

10 MR. CHEN: Which is also labeled as  
11 Exhibit 2012, because I may ask you to annotate on this  
12 exhibit, such that it will be a different exhibit. But  
13 this exhibit in its content is the same as Exhibit 1012.

14 (Exhibit No. 2012 marked for identification.)

15 BY MR. CHEN:

16 Q. Dr. Wolfe, do you have Exhibit 2012 in front of  
17 you?

18 A. Yes.

19 Q. What is Exhibit 2012?

20 A. United States Patent Application Publication US  
21 2017/0314777.

22 Q. Please take a moment to review this document to  
23 satisfy you that it is the same document as  
24 Exhibit 1012, which is the Lai reference.

25 A. It appears to be.

1 Q. Okay. When was the last time you reviewed the  
2 Lai -- strike that.

3 Dr. Wolfe, may I refer to Exhibit 2012 as Lai in  
4 my questions below?

5 A. Yes.

6 Q. Okay. Dr. Wolfe, when was the last time you  
7 reviewed the Lai reference?

8 A. Yesterday.

9 Q. Are you familiar with the Lai reference?

10 A. Yes.

11 Q. Please turn to page 2 of the Lai reference.

12 A. Yes.

13 Q. Do you see a 2?

14 A. Yes.

15 Q. What is your understanding of Figure 2 in Lai?

16 A. Figure 2 is an illustration of an embodiment of  
17 AN illuminated fan device in Lai.

18 Q. In your understanding, what is element 111?

19 A. Element 111 is an input connector.

20 Q. What is your understanding of element 112?

21 A. Element 112 is an output connector for  
22 daisy-chaining to another identical fan.

23 Q. In your understanding, Dr. Wolfe, is element 111  
24 a circuit board?

25 A. No. I don't recall it being described that way.

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1 It appears to me that it's a connector that combines a  
2 power socket and some data pins.

3 Q. In your opinion, Dr. Wolfe, is element 112 a  
4 circuit board?

5 A. No, I don't think so. I think, again, it's a  
6 connector that has a number of pins on it. That's what  
7 was ordinarily used in the art to connect the fans at  
8 the time, especially PC fans, and that's what makes  
9 sense in light of Figures 3, 4, and 5. And it also is  
10 consistent with the way it's drawn in the illustration.

11 Q. Can you please turn to page 59 of Exhibit 2002,  
12 which is Dr. Tuckerman's declaration?

13 A. Yes.

14 Q. Well, actually, can you also turn to the  
15 previous page, where paragraph 89 is?

16 A. Okay.

17 Q. When you review Dr. Tuckerman's declaration, do  
18 you recall reviewing paragraph 89 as well as the  
19 annotated figure on Page 59?

20 A. Yes.

21 Q. So based on your review, Dr. Wolfe, do you agree  
22 with Dr. Tuckerman's opinion that, quote, the POSITA  
23 would have understood the single input 111 and single  
24 output 112 as having nothing more than fixed solder  
25 points on the printed circuit board, or PCBs, as shown

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1 below in the figure on page 59, unquote?

2 A. I disagree with that. I think he has created  
3 those PCBs and solder points out of thin air. They are  
4 not described in Lai. They are not -- the ordinary  
5 practice for illuminated fans such as the ones  
6 illustrated in Lai. And there's no reason why anybody  
7 would put a tiny little printed circuit board in that  
8 position in a fan, as opposed to a connector, which was  
9 the common practice in the art.

10 Q. In your opinion, is there any printed circuit  
11 board in the Lai device?

12 A. What do you mean by the Lai device? Lai --

13 Q. The --

14 A. -- describes at least three different  
15 embodiments.

16 Q. Okay. So I apologize. Let me clarify.

17 Dr. Wolfe, earlier you testified that Figure 2  
18 shows an embodiment of a device in Lai, correct?

19 A. Yes.

20 Q. And the embodiment is the purported invention in  
21 Lai, correct?

22 MR. WEBER: Objection. Form.

23 THE DEPONENT: No. It's one embodiment of the  
24 purported invention in Lai. There are other embodiments  
25 described as well.

1 BY MR. CHEN:

2 Q. Okay. I apologize. You are right.

3 Is it your opinion that Figure 2 in Lai shows an  
4 embodiment of the purported invention in Lai?

5 MR. WEBER: Objection to form.

6 THE DEPONENT: Yes, although it's best  
7 understood in the context of other figures that also  
8 describe that embodiment.

9 BY MR. CHEN:

10 Q. With respect to the embodiment in Lai  
11 representing examples of the purported invention in Lai,  
12 is there any printed circuit board included in the  
13 embodiment in Lai?

14 MR. WEBER: Objection to form.

15 THE DEPONENT: I'm sorry. I need to hear the  
16 question again.

17 BY MR. CHEN:

18 Q. Okay. With respect to the embodiment as  
19 examples of the purported invention in Lai, can you  
20 identify any printed circuit boards included in these  
21 embodiments?

22 MR. WEBER: Objection to form.

23 THE DEPONENT: So you're asking about all  
24 embodiments?

25 ///

1 BY MR. CHEN:

2 Q. Well, let's actually start with the embodiment  
3 in Figure 2.

4 Dr. Wolfe, can you identify any printed circuit  
5 board in Figure 2 of the Lai reference?

6 A. Not in figure 2, no. Figure 2 most likely  
7 corresponds to Figure 5, based on what we can see. It  
8 is possible to build Figure 5 with a circuit board, most  
9 likely inside of the fan center component, but there's  
10 no indication that elements 111 or elements 112 would be  
11 part of a circuit board.

12 Q. Dr. Wolfe, is it your testimony that Figure 2 of  
13 Lai corresponds to Figure 5 of Lai?

14 A. They are consistent.

15 Q. Can you identify any circuit board in Figure 2  
16 of Lai?

17 A. No. There is no circuit board illustrated in  
18 Figure 2 of Lai.

19 Q. Dr. Wolfe, can you identify what would have been  
20 implemented as a circuit board in Figure 5 of Lai from a  
21 POSITA's perspective?

22 A. Motherboard 30 would have been a circuit board,  
23 but it is not part of the fan module. It's external to  
24 the fan module. It is also quite likely that controller  
25 20 would be on a circuit board. But, again, it's

1 external to the fan module. It's not part of the fan  
2 module.

3 Within the fan module, it would not be unusual  
4 to place the motor controller on a small circuit board  
5 that would be housed, for example, in Figure 2, behind  
6 the circle that's marked "PWM Fan"; and, therefore, when  
7 those wires are shown in Figure 2 that don't have  
8 another visible device simply go to the fan, it would  
9 not be uncommon to implement that circle with a circuit  
10 board.

11 Q. In Figure 5 of Lai, Dr. Wolfe, can you identify  
12 the connections between the two elements labeled therein  
13 as 10?

14 A. They're hard to read, but I'm very familiar with  
15 this. I believe that the top element is labeled as VDD.  
16 That's normally 5-volt power for the LEDs. The next one  
17 is what we call the daisy chain connection. On one side  
18 it's labeled D out. On the other side it's labeled D  
19 in. It's used to connect one set of programmable LEDs  
20 to another set of programmable LEDs, and in particular,  
21 the WS2813 style LEDs, which are what are noted in the  
22 drawing. Those are well known.

23 The third from -- the third one, if you look  
24 from the No. 10 down, is a ground wire.

25 The fourth one, I don't -- I can't read the

1 exact language there, but it's the fan voltage. It's  
2 used to power the fan motor. The next one is ground.  
3 The next one, which is not connected between the two, is  
4 called the tach. It gets pulses to measure fan's speed.  
5 It's a tachometer. And the last one is labeled PWM.  
6 That stands for pulse width modulation, and that's used  
7 to control the fan's speed.

8 Q. With respect to the connections you described  
9 between the two elements 10 in Figure 5 of Lai, would a  
10 POSITA have implemented these connections using circuit  
11 boards?

12 A. Not necessarily. And in an implementation like  
13 Figure 2, probably not. It would simply connect either  
14 two connectors to each other or a cable between two  
15 connectors. It's not to say that you couldn't implement  
16 them with a printed circuit board. It just wasn't the  
17 normal practice.

18 Q. So in your opinion, Dr. Wolfe, a POSITA reading  
19 Lai would not have normally implemented the connections  
20 between the two elements 10s in Figure 5 of Lai,  
21 correct?

22 A. In my opinion, the normal ways to implement the  
23 connections shown between the two elements 10 in  
24 Figure 5 of Lai are to either have mating connectors or  
25 to have a cable that goes between two connectors, and a

1 printed circuit board would not be required.

2 Q. What are the two elements 10 in Figure 5 of Lai?

3 A. Let's use Lai's terminology. They are LED fans.

4 Q. Please turn to Figure 4 of Lai.

5 A. Okay.

6 Q. Dr. Wolfe, in your opinion, would a POSITA  
7 reading Lai have implemented the connections between the  
8 two LED fans 10 with circuit boards?

9 A. No. The connections would be implemented with  
10 connectors and/or connectors and a cable.

11 Q. To make sure I understand your testimony, so in  
12 your opinion, Dr. Wolfe, a POSITA reading Lai would not  
13 have normally implemented the connections between the  
14 two LED fans 10 in Figure 4, correct?

15 MR. WEBER: Objection to form.

16 THE DEPONENT: That's not what I said.

17 BY MR. CHEN:

18 Q. When you answered my prior question -- so I'll  
19 just read the transcript.

20 I stated my question as:

21 "Dr. Wolfe, in your opinion, would a POSITA  
22 reading Lai have implemented the connections between the  
23 two LED fans 10 in Figure 4 with circuit boards?

24 "Answer: No. The connections would be  
25 implemented with connectors and/or connectors and a

1 cable."

2 So based on that, I just wanted to confirm my  
3 understanding of your testimony.

4 Dr. Wolfe, in your opinion, would a POSITA --  
5 strike that.

6 Dr. Wolfe, in your opinion, a POSITA would not  
7 have implemented the connections between the two LED  
8 fans 10 in Figure 4 of Lai, correct?

9 MR. WEBER: Objection to form.

10 THE DEPONENT: No. I just told you how they  
11 would implement them. They would implement them either  
12 with mating connectors or with connectors and a cable.

13 BY MR. CHEN:

14 Q. Would printed circuit boards be used in the  
15 mating connectors and the cable that you just mentioned  
16 as the implementation of the connections between the two  
17 LED fans 10 in Figure 4 of Lai?

18 A. It would be very unusual to use them in a cable.  
19 It is a design choice as to whether or not to mount the  
20 connectors on a printed circuit board or not, but the  
21 connectors would be present either way. And in my  
22 experience, because of the cost constraints in this --  
23 for this type of fan, normally the connectors are not on  
24 a circuit board. But they can be. But either way, it's  
25 the actual connector that I believe is being shown as

1 element 111 and 112.

2 Q. Can the connections between the two LED fans 10  
3 in Figure 4 of Lai -- strike that.

4 Dr. Wolfe, in your opinion, would a POSITA  
5 implement the connections between the two LED fans 10 in  
6 Figure 4 of Lai using elements 111 and 112 in Figure 2  
7 of Lai?

8 A. Well, as I said, I think Figure 2 actually  
9 corresponds -- is an illustration of Figure 5. But if  
10 one were to do something very similar based on Figure 4,  
11 the connections would be based on connectors 111 and  
12 connectors 112.

13 Q. Can you please turn to Figure 6?

14 A. Okay.

15 Q. Dr. Wolfe, in your opinion, would a POSITA  
16 implement the connections between the two LED fans 10 in  
17 Figure 6 of Lai using elements 111 and 112 in Figure 2  
18 of Lai when reading Lai?

19 A. Not literally, because Figure 6 has a different  
20 number of connections. But one would -- a person of  
21 ordinary skill would certainly understand how to replace  
22 111 and 112 in this embodiment with connectors that have  
23 fewer connections.

24 Q. So the connections will be implemented as  
25 elements 111 and 112 with fewer connection points by a

1 POSITA, correct?

2 A. If that POSITA were implementing the Figure 6  
3 embodiment, I believe that's correct.

4 Q. When reading Lai, would a POSITA have understood  
5 the teaching of Lai to implement the connections between  
6 the two LED fans in Figure 6 using structures like  
7 elements 111 and 112, just with fewer connection points?

8 A. Yes. They would use connectors, an input  
9 connector like 111 and an output connector like 112, but  
10 they would only need to have five pins on those  
11 connectors, rather than -- how many are illustrated  
12 there? Six or seven? Six.

13 Q. So similarly, would a POSITA when reading Lai  
14 have understood the teaching of Lai to implement the  
15 connections between the two LED fans in Figure 4 using  
16 structures like elements 111 and 112 just with the  
17 correct number of connection points?

18 A. Yes. The connectors shown in Figure 2 as 111  
19 and 112 could be used directly in an embodiment of  
20 Figure 4.

21 Q. In Figure 1 of Lai, what are the connections  
22 implemented as between the LED fans 100?

23 A. Well, Figure 1 is prior art, and there are  
24 cables that are used between them. Lai uses the term  
25 "transmission line," but if you look at it in context,

1 it clearly just means a cable. And there's no  
2 illustration of how they're connected in Figure 1, but  
3 those appear to be -- I mean, they are described as  
4 ordinary prior art fans, and ordinary prior art fans  
5 used connectors at the end of the cables to -- to  
6 connect to the fans.

7 Q. Would a POSITA have expected to implement these  
8 transmission lines 101, 102, and 103 using circuit  
9 boards instead of cables?

10 A. No.

11 Q. Dr. Wolfe, is there any other embodiment that  
12 you're aware of in Lai that are not represented by one  
13 or more of Figures 1 through 6 of Lai?

14 A. I'm not aware of one, but I -- I didn't really  
15 look. As long as I find one embodiment that discloses  
16 the elements of the claim, then I've met my burden for  
17 obviousness. It doesn't really matter whether other  
18 embodiments are different.

19 Q. Okay. So -- strike that.

20 Dr. Wolfe, based on your earlier testimony, you  
21 would agree that the connections between the two LED  
22 fans 10 in Figures 4, 5, and 6 would be implemented as  
23 elements 111 and 112 using the correct number of  
24 connection points from a POSITA's perspective, correct?

25 A. I don't think that's a simple yes-or-no question

1 because, as I explained before, 111 and 112 are the  
2 connectors and you can either implement the connections  
3 that are shown in Figures 4, 5, and 6 by mating the  
4 connectors directly or by providing a cable between the  
5 connectors to mate them.

6 Q. Okay. Okay. So let's just break these two  
7 scenarios down into individual questions so that it's --  
8 it's clear.

9 Dr. Wolfe, you will agree that a POSITA reading  
10 Lai would have expected to implement the connections  
11 between the two LED fans 10 in Figures 4, 5, and 6 with  
12 an element like 111 and 112 in Figure 2 as one option,  
13 correct?

14 A. Yes. And in the illustrated embodiments, 111  
15 and 112 are connectors and there's a cable that connects  
16 between them.

17 Q. And elements 111 and 112 are one of the  
18 options -- strike that.

19 Dr. Wolfe, in your opinion, elements 111 and 112  
20 are one of the two options for implementing the  
21 connections between the two LED fans 10 in Figures 4  
22 through 6 of Lai from a POSITA's perspective, correct?

23 MR. WEBER: Objection to form.

24 THE DEPONENT: No, I don't think so. I mean,  
25 it -- there are many possibilities of how it could be

1 built. The one that's illustrated is to use connectors  
2 111 and 112 together, with a cable between the  
3 connectors.

4 MR. CHEN: Mm-hmm.

5 THE DEPONENT: So that's the one that's taught  
6 and that's the one that I relied on and -- but there are  
7 other possible ways to do it.

8 BY MR. CHEN:

9 Q. Okay. To clarify, Dr. Wolfe, in your opinion,  
10 the Lai reference teaches two possible ways of  
11 implementing the connections between the two LED fans 10  
12 in Figures 4 through 6, with one of the ways as elements  
13 111 and 112, correct?

14 MR. WEBER: Objection to form.

15 THE DEPONENT: No. The -- the reference teaches  
16 connectors 111 and 112, and it teaches what connections  
17 are to be made. And a person of ordinary skill in the  
18 art looking at these diagrams would see that what's  
19 illustrated is connecting them with a cable between the  
20 connectors, but a person of ordinary skill in the art  
21 would also understand that outside of the illustrations,  
22 there are other ways that it could be done.

23 BY MR. CHEN:

24 Q. Yes, I understand that. I suppose I should  
25 clarify my questions a little bit more.

1 I'm talking about the teachings that a POSITA  
2 would have received from Lai, specifically. I'm not  
3 talking about, you know, all of the other possibilities  
4 that -- that can be done. I'm talking about the  
5 particular teachings in Lai. And I'm under the  
6 impression that you stated that Lai appears to teach two  
7 ways; one is to use the elements 111 and 112 to make the  
8 connections between the two fans, the other way is to  
9 use cables. Am I --

10 A. No. All the ways that are taught -- all the  
11 ways that are illustrated use connectors 111 and 112,  
12 and they are illustrated as being used together with a  
13 cable. But Lai simply teaches that you need to connect  
14 the fans. It details one embodiment using connectors  
15 111 and 112 --

16 Q. Mm-hmm.

17 A. -- and it details the cable in Figure 3, but it  
18 doesn't limit you to that embodiment.

19 It -- a person of ordinary skill would know that  
20 there's many different ways to -- to connect two fans  
21 together.

22 Q. I understand that. But the specific ways taught  
23 by Lai would be the elements 111 and 112 with cables,  
24 correct?

25 A. That is the one that is fully detailed in the

1 drawings.

2 Q. Okay.

3 A. Using two connectors and a cable.

4 Q. Okay. Yeah. Great. I suppose, you know, I was  
5 somewhat successful in clarifying my questions. So in  
6 that sense, let me -- let me just re-ask it to make sure  
7 the record is clear. Give me one second.

8 Dr. Wolfe, would you agree that from a POSITA's  
9 perspective, Lai's specific teaching shows the  
10 connections between the two LED fans 10 in Figure 4,  
11 Figure 5, and Figure 6 by using elements 111 and 112  
12 with the correct number of connecting points? Right?

13 A. Figures 4, 5, and 6 don't specify how the  
14 connections should be done.

15 Q. Okay.

16 A. But Figures 2 and 3 illustrate a way of  
17 connecting the boards as required by Figures 4 and 5  
18 using connector 111 and connector 112 and a cable  
19 between them, and then a person of ordinary skill in the  
20 art would be able to make the trivial adaptations to  
21 apply that to Figure 6 as well.

22 Q. You said that connecting the boards as required  
23 by Figures 4 and 5. What do you mean by connecting the  
24 boards as required by Figures -- did you mean the fans  
25 or --

1 A. The fans, the -- the first connection is to  
2 boards, right? The connection from 30 to -- to 10 is to  
3 a board, board 30, and then the next connection is  
4 between fans. But it's the same connection strategy.

5 Q. Are the boards internal elements for elements  
6 10, 20, and 30?

7 A. Well, we discussed this before. They don't need  
8 to have circuit boards, but it would be common to, for  
9 example, have a circuit board behind the fan motor, as  
10 illustrated in the circle in Figure 2.

11 Q. Okay. So let's focus on only the connections  
12 between the LED fans 10 in Figures 4 through 6 in Lai.

13 Dr. Wolfe, would you agree that a POSITA reading  
14 Lai would have understood the teaching to be that  
15 elements 111 and 112 would be used with cables to  
16 implement the connections between the LED fans 10 in  
17 Figures 4 through 6 of Lai?

18 A. One of the embodiments that is taught in Lai is  
19 to use connectors 111 and 112 with a cable to connect  
20 the fans 10 that are shown in Figures 4 and 5, and  
21 potentially 6 as well.

22 Q. And earlier, I recall you testified that you  
23 disagreed with Dr. Tuckerman that elements 111 and 112  
24 were circuit boards. Correct?

25 A. Correct. It is possible that they are

1 connectors that are attached to circuit boards. It is  
2 also possible that there are connectors that are not  
3 attached to circuit boards. It's not really relevant to  
4 Lai. But they are connectors. I think that's the  
5 understanding of a person of ordinary skill in the art.

6 It would not make any sense to have solder  
7 points, especially if you understand who the inventor is  
8 and the market and -- and what these fans are  
9 illustrating. These are consumer fans. The reason that  
10 they are daisy-chainable is because different people  
11 would want to use different numbers of them. So to have  
12 to go inside and solder them together just doesn't make  
13 any sense.

14 Q. I understand that. I get it that it is your  
15 opinion that -- that Dr. Tuckerman's opinion that  
16 elements 111 and 112 are circuit boards with solder  
17 points is not your opinion. Right?

18 A. I disagree with the conclusion that -- that 111  
19 and 112 are circuit boards or that they are used by  
20 soldering to solder points on them.

21 Q. Dr. Wolfe, you disagree with Dr. Tuckerman's  
22 opinion that circuit boards are used in elements 111 and  
23 112 to connect the LED fans 10 in Figures 4 through 6 --  
24 I will -- strike that.

25 Let me see. Dr. Wolfe you disagree with

1 Dr. Tuckerman's opinion that circuit boards are used in  
2 elements 111 and 112 to connect the LED fans 10 in Lai  
3 to implement the connections between LED fans, correct?

4 A. I think you've mischaracterized his opinion.  
5 His opinion says that a POSITA would have understood the  
6 single input 111 and single output 112 as having nothing  
7 more than fixed solder points on the printed circuit  
8 board. I disagree with that.

9 Q. Do you agree with Dr. Tuckerman that the single  
10 input 111 is implemented as a circuit board?

11 A. I disagree with that. 111 is a connector.

12 Q. Do you agree with Dr. Tuckerman that the single  
13 input 112 is implemented as a circuit board?

14 A. I disagree with that. 112 is also a connector.

15 Q. In your opinion, Dr. Wolfe, element 111 is a  
16 connector, but not a circuit board, correct?

17 A. Element 111 is a connector. Some connectors  
18 incorporate a circuit board as a component to them.  
19 Some connectors are mounted on a circuit board, but they  
20 are still connectors and they certainly are not nothing  
21 more than fixed solder points on a printed circuit  
22 board.

23 Q. In the specific case of Lai, would a POSITA read  
24 element 111 to be a circuit board?

25 A. No.

1 MR. WEBER: Objection to form. Asked and  
2 answered.

3 Go ahead.

4 THE DEPONENT: They would read 111 to be a  
5 connector.

6 BY MR. CHEN:

7 Q. In the specific case of Lai, would a POSITA read  
8 element 112 to be a circuit board?

9 MR. WEBER: Same objections.

10 THE DEPONENT: No. They would read 112 to be a  
11 connector.

12 MR. CHEN: How much time have we been on the  
13 record for this segment?

14 MR. WEBER: Around an hour.

15 MR. CHEN: About an hour. Yeah, I guess we  
16 can --

17 MR. WEBER: Do you want to take a quick break?

18 MR. CHEN: Take a quick break.

19 (A recess transpires.)

20 BY MR. CHEN:

21 Q. Dr. Wolfe, welcome back. So did you talk to  
22 anyone during any of the breaks today in this  
23 deposition?

24 A. I spoke to counsel.

25 Q. Okay. Who was the counsel you spoke to?

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1 A. Mr. Weber.

2 Q. Did you talk to Mr. Weber about any of the  
3 testimony you have provided today?

4 A. No.

5 Q. Did you talk to Mr. Weber about anything related  
6 to this IPR proceeding during the break today?

7 A. No.

8 Q. Dr. Wolfe, did you have a chance to review the  
9 petition as filed, ever?

10 A. I don't recall.

11 Q. You don't recall ever reviewing it or you don't  
12 recall if you had reviewed it?

13 A. I don't recall if I had reviewed it. I provided  
14 input to counsel on earlier drafts, but I don't recall  
15 if I ever reviewed the final.

16 MR. CHEN: Okay. So I am providing you with  
17 Exhibit 1014, which is also labeled as 2014.

18 (Referencing Exhibit 1014.)

19 BY MR. CHEN:

20 Q. Please take a moment to review it to the  
21 satisfaction that it is the same document as  
22 Exhibit 1014.

23 A. It's a very long document but, it appears to me  
24 right now that it is the correct document.

25 Q. Okay. What is Exhibit 2014?

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1 A. It's a translation, I believe a certified  
2 translation of a Japanese unexamined patent application  
3 2005-51085.

4 Q. Who is the inventor for this application?

5 A. It looks to me like Hasegawa is the first listed  
6 inventor.

7 Q. Okay. Can you please spell Hasegawa for the  
8 record.

9 A. H-a-s-e-g-a-w-a. And I don't know, based on the  
10 translation, if that's a first name or a last name.

11 Q. I think in the papers of -- this reference has  
12 been referred to as just Hasegawa. So may I refer to  
13 Exhibit 12 -- strike that.

14 Dr. Wolfe, may I refer to Exhibit 2014 as  
15 Hasegawa in my questions?

16 A. Yes. I will understand that.

17 Q. Okay. In your own words, can you briefly  
18 describe what Hasegawa discloses?

19 A. Hasegawa is very briefly described in paragraph  
20 62 and 63 in my declaration. It describes a mechanism  
21 for connecting computer cooling fans to each other, and  
22 one characteristic of that mechanism is that the  
23 daisy-chaining connectors are physically mounted on  
24 opposite edges of the fan device.

25 Q. I see. You mentioned a term edge in your answer

1 to my prior question. Did you use that word in  
2 paragraphs 62 and 63 in your declaration, which is  
3 your -- strike that.

4 Dr. Wolfe you mentioned a term, quote, edge,  
5 unquote, in your answer to my prior question. Did you  
6 use that word in paragraphs 62 and 63 in your  
7 declaration, which is Exhibit 1004?

8 A. I don't think so. I used that in paragraph 118,  
9 where I actually apply this art to the claim.

10 Q. 118. Let's see.

11 A. And maybe elsewhere in the declaration as well.

12 Q. 118. Let me see.

13 In paragraph 118, when referring to -- strike  
14 that.

15 Dr. Wolfe in paragraph 118 of your declaration,  
16 which is Exhibit 1004, did you use the word "edge" to be  
17 associated with the Hasegawa reference?

18 A. You need to read it in context. So paragraph  
19 118 says that moving the connectors to the edges would  
20 be obvious, and then paragraph 119 explains that  
21 Hasegawa actually teaches that, if you need another  
22 reference to make it obvious. And then that same  
23 figure, Figure 29, appears on page 98.

24 Q. Oh, I see. Okay.

25 A. And paragraph 120, then, brings the two

1 paragraphs together.

2 Q. I see. So in Figure 3 of Lai, which is  
3 Exhibit 1012/2012 -- strike that. This is a little bit  
4 hard to ask.

5 So please turn to page 99 of your declaration.

6 So do you see Figure 3 (modified) there on  
7 page 99 of your declaration?

8 A. Yes.

9 Q. And then do you see, like, a few -- actually,  
10 exactly three, I guess, sideways rectangles --

11 A. Yes.

12 Q. -- in the figure?

13 A. Yes.

14 Q. Okay. Here it says modified, but actually, I  
15 wanted to ask you a question about Lai before  
16 modification, so -- and I'm using the rec -- rectangle  
17 to only indicate the position I'm talking about, because  
18 it's actually very helpful to show it that way. So --  
19 so let me ask you.

20 So Figure 3 -- strike that.

21 Dr. Wolfe, in Figure 3 of Lai, what is the  
22 actual structure of LED fan 10 at the location indicated  
23 by the sideways rectangles as shown on page 99 of your  
24 declaration in Lai's original form before any  
25 modification?

1 MR. WEBER: Objection to form.

2 THE DEPONENT: A portion of that rectangle shows  
3 an outermost sidewall of the fan housing and a portion  
4 of the rectangle covers an opening in that outermost  
5 sidewall.

6 BY MR. CHEN:

7 Q. Is there any connector shown in Figure 3 of Lai  
8 in its original form?

9 A. The connector itself is not shown, but the cable  
10 that plugs into the connector is shown in Figure 3 and  
11 the connector is shown in Figure 2.

12 Q. So, Dr. Wolfe, you will agree that Figure 3 of  
13 Lai in its original form does not show any connector on  
14 the bodies of LED fans, correct?

15 A. Figure 3 alone does not show it, but Figure 3 is  
16 consistent with other figures that do show right- and  
17 left-side connectors.

18 Q. So do you have Exhibit 2012 in front of you?

19 A. Yes.

20 Q. Okay. So let me actually get some pens. I'm  
21 marking with markers, so let's see.

22 Okay. Let me -- yeah, please use this. I hope  
23 it's okay. So if you can please turn to page 2 of 8 of  
24 Exhibit 2012, you see Figure 2, correct?

25 A. Yes.

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1 Q. Okay. So with that in mind, if you turn to the  
2 next page, you stated that Figure 3 by itself does not  
3 show any connectors, but it is consistent with the other  
4 figures.

5 My question is this: Dr. Wolfe, can you please  
6 use the marker to mark the position of a connector in  
7 Figure 3 of Exhibit 2012?

8 A. I don't know that I can, since in Figure 3 it's  
9 blocked by the housing. So it's -- would be in an  
10 interior portion. It would be one on the left and one  
11 on the right. That's why Figure 2 removes the exterior  
12 housing to let us see inside.

13 Q. Assuming the housing of LED fans 10 in Figure 3  
14 of Lai is transparent, where would a POSITA have  
15 understood the purported connection -- strike that.

16 Assuming the housing of LED fans in Figure 3 of  
17 Lai is transparent, where would a POSITA have understood  
18 the purported connectors are located?

19 A. In the preferred embodiment connector, 111 would  
20 be on the left and 112 on the right, and they would be  
21 inside of the plastic housing, outside of the spinning  
22 radius of the fan, pretty close up against the -- the  
23 outer wall.

24 Q. Can you --

25 A. So there are two kind of semi-triangular

1 portions there. You can see the LEDs 11, and those  
2 correspond to -- I'm sorry -- yeah, I think that's 11.  
3 And those correspond to LEDs 16 on Figure 2.

4 Just check that. Yeah.

5 And that gives you a sense of proportion as to  
6 where the connectors would be. They would be between  
7 those LEDs and the outer wall in the interior of the  
8 fan, and accessible through the illustrated holes.

9 Q. Okay. Can you please use the blue marker to  
10 mark the position of element 111 in Exhibit 2012,  
11 assuming the housing of the fan is transparent?

12 MR. WEBER: Objection to form.

13 THE DEPONENT: But the drawing is not  
14 transparent. I'm not an artist, and I'm concerned that  
15 if I try to draw a 2D interior element on a 3D object,  
16 that it's -- the drawing is not going to represent my  
17 opinion.

18 MR. CHEN: Can you please try your best to draw  
19 a position of element 111 as would have been understood  
20 by a POSITA in Figure 3 of Exhibit 2012?

21 MR. WEBER: Same objection. Go ahead.

22 THE DEPONENT: With -- with the caveats from  
23 before, I will try.

24 BY MR. CHEN:

25 Q. I apologize. Could you show me?

1                   Yeah. Okay. Thank you.

2                   Let me provide you with the pink marker. So  
3 thank you very much, Dr. Wolfe.

4                   Similarly, can you please try your best to draw  
5 a position of element 112 as would have been understood  
6 by a POSITA in Figure 3 of Exhibit 2012.

7                   Okay. Okay. Thank you.

8                   Dr. Wolfe, would a POSITA reading Lai's Figures  
9 2 and 3 have understood elements 111 and 112 as marked  
10 by you in Exhibit 2012 to be on the same edge of the LED  
11 fan 10?

12                  MR. WEBER: Objection to form.

13                  THE DEPONENT: No. They are on the interior,  
14 one on the left side and one on the right side. So they  
15 are not on an edge at all.

16 BY MR. CHEN:

17 Q.            Given that elements 11 -- strike that.

18                  Given that elements 111 and 112 are internal  
19 elements for the LED fan 10, would a POSITA reading  
20 Lai's Figures 2 and 3 have understood elements 111 and  
21 112 as marked by you in Exhibit 2012 to be behind the  
22 same edge of the LED fan 10?

23                  MR. WEBER: Objection to form.

24                  THE DEPONENT: They are both. They are behind  
25 the lower edge, and one of them is also behind the left

1 edge and the other one is also behind the right edge.

2 BY MR. CHEN:

3 Q. Dr. Wolfe, do you recall we discussed earlier a  
4 claim term in Exhibit 1001, which is the patent at  
5 issue, US Patent No. 10,690,336, quote, side, unquote?

6 A. We discussed the word "side" and -- well, we  
7 discussed both the word "side" and the word "sides." My  
8 understanding is that they are being used consistently  
9 in the claim.

10 Q. By the way, may I refer to Exhibit 1 as the '336  
11 patent?

12 A. Yes. It's Exhibit 1001.

13 Q. Yes. Yes. I'm sorry. I keep saying 1.  
14 May I refer to Exhibit 1001 as the '336 patent?

15 A. Yes.

16 Q. Okay. Thank you.

17 So earlier, you testified that given elements  
18 111 and 112 are internal elements for the LED fan 10, a  
19 POSITA would have understood these two elements to be  
20 behind the lower edge, and one of them is also behind  
21 the left edge and the other one is also behind the right  
22 edge, correct?

23 A. Yes. In the embodiment that's illustrated.

24 Q. Okay. If we use the term "side" and "sides," I  
25 meant the plural of side, so s-i-d-e-s, not sigh --

1 not -- not like, you know, the -- the size of the  
2 object. I meant to say sides, sides.

3 Okay. So let me ask it again.

4 Under the claim term "side" and the claim term  
5 "sides," Dr. Wolfe, in your opinion, would the POSITA  
6 have understood elements 111 and 112 are behind the same  
7 side of the LED fan 10 in Figure 3 of Lai?

8 MR. WEBER: Objection to form.

9 THE DEPONENT: Now we're talking about claim  
10 language. There is no "behind" in the claim. So a  
11 person of ordinary skill in the art would understand  
12 that connector 111 is on one side and connector 112 is  
13 on the other side.

14 BY MR. CHEN:

15 Q. What is your understanding of the term you  
16 used -- strike that.

17 Dr. Wolfe, what is your understanding of the  
18 relationship between the term you used in your  
19 declaration -- declaration, Exhibit 1004, "edge," and  
20 the claim term in the '336 patent, "side"?

21 MR. WEBER: Objection to form.

22 THE DEPONENT: I used the term "edge" in  
23 paragraph 118 of my declaration --

24 MR. CHEN: Uh-huh.

25 THE DEPONENT: -- to refer to an outermost

1 surface of the housing.

2 And using it that way, an edge would be on a  
3 side, but not everything on a side needs to be on the  
4 edge. Some edges would be split between two sides, but  
5 the side edge would be on a -- on a side.

6 BY MR. CHEN:

7 Q. Okay. Huh. Okay. Should -- Dr. Wolfe, in your  
8 opinion, element 111 in Figure 2 of Lai and element 112  
9 in Figure 2 of Lai can be located on the same side of  
10 the LED fan 10, correct?

11 MR. WEBER: Objection to form.

12 THE DEPONENT: It would just depend on how you  
13 rotate the page. But as illustrated, they are on  
14 different sides. One is on the left and one is on the  
15 right.

16 BY MR. CHEN:

17 Q. Yes. But I'm asking you if they can be  
18 considered to be located on the same lower side in  
19 Figure 2 of Lai. So, you know, with that, you know, I  
20 wanted to emphasize the word "can." I didn't say, you  
21 know, it's exclusively the case. So -- so let me ask  
22 the question again.

23 Dr. Wolfe, in your opinion, can elements 111 and  
24 112 in Figure 2 of Lai be located on the same side of  
25 the LED fan 10 as the term "side" is used in the '336

1 patent?

2 A. I don't think that's the natural reading. I see  
3 the -- see one -- 111 on the left side and 112 on the  
4 right side. But if you tried to under -- if you -- if  
5 you tried to describe this drawing as having a top side  
6 and a bottom side, then I think 111 and 112 would also  
7 be on the bottom side.

8 Q. Oh, wow. Dr. Wolfe, in your opinion, if the LED  
9 fan 10 in Figure 2 of Lai is divided into a top side and  
10 a bottom side, do you agree that a POSITA would have  
11 considered elements 111 and 112 to be located on the  
12 same bottom side?

13 MR. WEBER: Objection to form. Asked and  
14 answered.

15 Go ahead.

16 THE DEPONENT: Again, it depends how you hold  
17 the drawing. As I said, I think 111 and 112 are both  
18 illustrated on the bottom side, but they are also  
19 illustrated with one on the right and one on the left.  
20 If you hold the drawing rotated 90 degrees, then one is  
21 on the top and one is on the bottom.

22 BY MR. CHEN:

23 Q. So, Dr. Wolfe, in your opinion, elements 111 and  
24 112 can be on the same side or on two different sides,  
25 as the terms side and sides are understood in the '336

1 patent, correct?

2 A. No. I would disagree. The -- if one reads the  
3 '336 patent and one reads the claims, clearly the idea  
4 of having the connectors on two different sides is so  
5 that you can effectively daisy-chain fan elements so  
6 that when you connect them. The connection comes in on  
7 one side and goes out on the other, and that's exactly  
8 what's in Figure 2. So I think Figure 2 is exactly  
9 what's described in the; 336 claims. Powers and signals  
10 come in from the left. They connect out on the right to  
11 go to the next fan.

12 Q. But, Dr. Wolfe, did you just also testify that  
13 both element 111 and 112 can be understood by a POSITA  
14 to be on the same bottom side of LED fan 10 in Figure 2  
15 of Lai?

16 A. I think in the abstract that that's true, but  
17 it -- as I said, the -- the sides are described in the  
18 claim as a way to enable this kind of daisy chain  
19 connection, and that's exactly what's in Figure 2. I  
20 would describe the preferred embodiment in the '336 in  
21 such a way that some of the connectors are both on the  
22 left and right, and also on the bottom. I think that's  
23 well within the scope of the claim.

24 MR. CHEN: Excuse me. How much time we have on  
25 the record in this second segment?

1 THE REPORTER: 45 to 50 minutes.

2 MR. CHEN: Can we take a bio break?

3 MR. WEBER: Yeah.

4 MR. CHEN: Yeah, okay.

5 (A recess transpires.)

6 BY MR. CHEN:

7 Q. So, Dr. Wolfe, can you please turn to  
8 Exhibit 1001, the '336 patent. So if you can please go  
9 to page 5 under column 4.

10 A. Page 5 is a figure on mine.

11 MR. WEBER: Yeah.

12 BY MR. CHEN:

13 Q. Oh, sorry. I -- probably page 8.

14 A. Okay.

15 Q. That's where the claims are, right?

16 A. Yes.

17 Q. Okay. So page 8 of Exhibit 1001, Dr. Wolfe, in  
18 column 4, about lines 5 and 6 -- actually, strike that.

19 On page 8 of Exhibit 1001, the '336 patent,  
20 Dr. Wolfe, in about lines 5 through 7 of column 4, do  
21 you see a phrase, quote, an illumination area on at  
22 least two sides of the fan at top of the body, unquote.

23 A. Yes.

24 Q. In your understanding of this phrase, does the  
25 recited illumination area need to be located at top of

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1 the body?

2 A. Yes. It literally says that it needs to be, on  
3 at least two sides. At the top. And, of course, where  
4 the top is, is going to depend on how you're holding the  
5 fan.

6 Q. So let's turn to Exhibit 2012 on page 3 that --  
7 the one you annotated.

8 So, Dr. Wolfe, do you see there are two  
9 illumination fans in Figure 3, with one of them having  
10 been annotated by you?

11 A. I see part of a third one as well.

12 Q. I'm sorry. What did you --

13 A. I see part of a third one as well, and it's  
14 labeled --

15 Q. Oh, yes. Yes.

16 A. Okay.

17 Q. So part of a third one. Oh, yeah. Okay. So --  
18 so, Dr. Wolfe, if we considered the second LED fan 10  
19 from the left, can you identify the location of the top  
20 of the body as the phrase is used in the '336 patent?

21 A. Well, again, I think top, plain meaning, is  
22 going to be the upper portion. That's going to depend  
23 on how you hold -- orient the fan. But as it's shown in  
24 Figure 3, if it were laying flat on a surface, it would  
25 be the upper half of each of the fans that are

1 illustrated there.

2 Q. So with respect to the middle fan, which is also  
3 the second fan coming from the left in Figure 3 of  
4 Lai -- strike that.

5 With respect to the first fan in Figure 3 of  
6 Lai, counting from the left, would a POSITA have  
7 considered LED element 11 to be at the top of the fan  
8 body 10?

9 A. I don't think that's the relevant question. LED  
10 11 would illuminate an illumination area on the top and  
11 also an illumination area on the bottom. The top half  
12 of it would be an illumination area on the top and the  
13 bottom half of it would be an illumination area on the  
14 bottom, in the current positioning.

15 Q. So in Figure 3 of Lai, assuming we're holding  
16 the fan with its edge having the two mark areas, IU,  
17 parallel to the ground, can you identify where the top  
18 of the body is as would have been understood by a  
19 POSITA?

20 A. If you had it placed on an edge so that the two  
21 connectors are in the bottom half of the fan, then the  
22 top half of the fan would be the top. And even though  
23 only half of the LEDs are illustrated on Figure 3, it  
24 would be understood in the context of Figures 2, 4, 5,  
25 and 6, that there are, in fact, four LEDs, and there

1 would be, in that case, two on the top and two on the  
2 bottom.

3 Q. So, Dr. Wolfe, in your opinion, the claim term  
4 top -- strike that.

5 Dr. Wolfe, in your opinion, the location of the  
6 claim structure top of the body in the '336 patent would  
7 depend on the orientation of the fan body relative to  
8 the ground, correct?

9 A. I think that's the plain and ordinary meaning.  
10 I didn't see any guidance in the '336 patent otherwise.  
11 But even if it, as I understand the patent owner  
12 alleges, referred to one of the faces of the fan, where  
13 the air blows out, all of my opinions would still hold.  
14 But, again, that's still a little confusing because it  
15 might mean that if you took the fan and you turned it  
16 upside down, it wouldn't infringe anymore. It's very  
17 common in the industry to mount fans in a wide variety  
18 of positions, and the illumination commonly sometimes  
19 faces outward and sometimes faces inward.

20 Q. So assuming a fan is placed -- oh, this is hard.

21 MR. CHEN: Okay. I will show you another  
22 exhibit.

23 Okay. Let me provide you with Exhibit No. 2008,  
24 which is also Exhibit 1008.

25 (Referencing Exhibit 1008.)

1 BY MR. CHEN:

2 Q. Please take a moment to satisfy yourself that  
3 Exhibit 2008 is the same exhibit as 1008.

4 A. It appears to be.

5 Q. Okay. So what is Exhibit 2008?

6 A. US Patent 10,082,286 to Huang.

7 Q. May I refer to this exhibit as Huang in my  
8 questions?

9 A. Yes.

10 (Discussion off the record.)

11 BY MR. CHEN:

12 Q. Okay. So can you please, in your own words,  
13 describe what Huang is?

14 A. So Huang is described in paragraph 51 of my  
15 declaration, use of quotes from the abstract. Huang  
16 describes a cooling fan that has a light-emitting  
17 effect, including light-emitting elements and a light  
18 guide plate with a plurality of light guide strips. It  
19 includes a light diffuser connected to the light guide  
20 strips and a fan blade assembly that is mounted in the  
21 center of the -- of the frame body, such that light  
22 passes through the diffuser to form diffused light.

23 Q. So can you turn to Figure 1.

24 A. Okay.

25 Q. Under the term "top of the body" in the '336

1 patent, can you identify a corresponding structure in  
2 the fan shown in Figure 1 of Huang?

3 A. So again, I think "the top" is a general term.  
4 That's position dependent. But if we analyze Figure --  
5 if we analyze Huang so that Figure 1 is positioned so  
6 that the fan appears to be sitting on a flat surface,  
7 then the upper half would be the top, and that would be  
8 consistent with all of my opinions.

9 Q. But would your opinion change if the Huang  
10 device is flipped upside down, such that the  
11 illumination area is facing down?

12 A. I don't know. I haven't done that analysis  
13 because there's clearly a teaching wherein it faces up.

14 Q. Sitting here today, you don't know if the Huang  
15 device as shown in Figure 1 would disclose an  
16 illumination area if it's flipped upside down, correct?

17 A. Correct. I have not done the analysis of  
18 flipping it upside down.

19 Q. Can you conduct such an analysis right now --

20 A. No.

21 Q. -- to make a determination?

22 A. No. Huang define -- I'm sorry. Wrong word.

23 Huang describes the visible surface in Figure 1  
24 as the top, and under that teaching, Huang teaches the  
25 '336 claims, and that was the analysis that I did.

1 Q. But exactly the same fan as shown in Huang's  
2 Figure 1, if it is flipped upside down, does it still  
3 disclose or teach the illumination area limitation in  
4 the '336 patent?

5 A. I haven't done that analysis. I assume that a  
6 person of ordinary skill would understand that you could  
7 flip it back the other way and, therefore, the structure  
8 is there.

9 Q. If the Huang device in Figure 1 is flipped  
10 upside down, would a POSITA have understood the  
11 corresponding illumination area to be at the bottom of  
12 the fan body, as opposed to the top of the fan body?

13 A. Yeah. I think that would be true of any fan  
14 that's illuminated on one side, including the  
15 embodiments that are described in the '336 patent.

16 Q. And, Dr. Wolfe, would you agree that a bottom of  
17 a fan body is opposite the top of a fan body?

18 A. At a particular period of time, yes.

19 Q. What particular period of time?

20 A. At any one time, the bottom and the top are  
21 opposite halves of the fan.

22 Q. Oh, okay. Okay. Is there any time a POSITA  
23 would have understood a bottom of a fan body not  
24 opposite the top of the fan body?

25 A. I -- I think while the fan is assembled, the

1 bottom is opposite the top.

2 Q. Always or only at a certain moment?

3 A. Well, I think that's the meaning of the words  
4 bottom and top. But in other words, if you turn it  
5 upside down, what was the top is now the bottom. I  
6 mean, that's just the nature of those words.

7 Q. That's fine. But earlier, you seemed to say  
8 that sometimes the top is opposite the bottom, but some  
9 other times it's not, so I just wanted to clarify with  
10 you.

11 A. No. As long as -- as long as the relative  
12 positions don't change. But if I take the fan apart,  
13 then the top and bottom may not be opposite anymore.

14 Q. Okay. So with respect to an assembled  
15 illumination fan as shown in Figure 1 of Huang, is the  
16 top of the fan body always opposite the bottom of the  
17 fan body?

18 A. I think the way I would normally use the words  
19 top and bottom, that would be true.

20 Q. If the fan in Figure 1 of Huang is flipped  
21 upside down, such that the illumination area is at the  
22 bottom of the fan body, would a POSITA still consider  
23 the same fan to have an illumination area at the top?

24 MR. WEBER: Objection to form.

25 THE DEPONENT: Probably not. But that's not

1 taught in Huang. What's taught in Huang is an  
2 illumination area at the top.

3 BY MR. CHEN:

4 Q. So again, Dr. Wolfe, in your opinion, a POSITA  
5 would have understood the top of the fan body to be  
6 dependent on the orientation of the fan device, correct?

7 A. I think that's the ordinary meaning. But,  
8 again, in Figure 1, Huang teaches the -- an orientation.

9 Q. So in your opinion, Dr. Wolfe, if the fan is  
10 flipped upside down, in Huang's Figure 1, is there still  
11 an illumination area on the top of the fan body?

12 MR. WEBER: Objection to form. Asked and  
13 answered.

14 THE DEPONENT: Probably not. But, again, that's  
15 not what's taught in Huang. As taught in Huang, there  
16 is an illumination area on the top of the body.

17 BY MR. CHEN:

18 Q. But in the hypothetical question I had for you,  
19 that if assuming the fan in Figure 1 of Huang is flipped  
20 upside down, then in your opinion, a POSITA would no  
21 longer understood the illumination area to be on top of  
22 the fan body, correct?

23 MR. WEBER: Same objections.

24 THE DEPONENT: I think that's correct in that  
25 hypothetical, but it would still be obvious to a person

1 of ordinary skill that they could flip it over.

2 BY MR. CHEN:

3 Q. Okay. I apologize. I actually misspoke a word,  
4 so -- so let me -- please bear with me. Let me read the  
5 question again.

6 Dr. Wolfe, in the hypothetical that if assuming  
7 the fan in Figure 1 of Huang is flipped upside down,  
8 then in your opinion, a POSITA would no longer have  
9 understood the illumination area to be on top of the fan  
10 body, correct?

11 MR. WEBER: Same objections.

12 THE DEPONENT: Yes, under that hypothetical and  
13 using the ordinary meaning of top and bottom, in that  
14 case, the illumination area would be on the bottom. But  
15 it would still be obvious to flip it over and put it on  
16 the top again.

17 BY MR. CHEN:

18 Q. Okay. So in Figure 1 of Huang -- hmm -- would a  
19 POSITA have considered the portion of the fan body above  
20 line AA to be a side of the fan body?

21 A. I don't think that's a natural interpretation.  
22 I think one would have simply looked at the fan body and  
23 considered it to have a left side and a right side.  
24 But -- it could be positioned that way, but I don't -- I  
25 think this is intended to be a perspective and not to

1 indicate that the fan should be mounted diagonally.

2 Q. I understand that. But I believe earlier, you  
3 testified that a side, in your understanding -- I'm  
4 sorry. Strike that.

5 Dr. Wolfe, earlier in today's deposition, you  
6 had testified that in your opinion a POSITA would have  
7 understood the term "side" to mean the half of a device  
8 relative to a center of a device, correct?

9 MR. WEBER: Objection to form.

10 THE DEPONENT: That's approximately what I said.

11 BY MR. CHEN:

12 Q. So with respect to Figure 1 of Huang, would you  
13 agree that the portion above the line AA is the half of  
14 a device relative to a center of the fan device in  
15 Figure 1 of Huang?

16 MR. WEBER: Objection to form.

17 THE DEPONENT: It would certainly be possible to  
18 position this fan on a corner so that one side of  
19 line AA was on the left and one side of AA was on the  
20 right, but the more natural way to do it would be to put  
21 it on one of the outer edges so that the left rec --  
22 rectangle was one side and the right rectangle was the  
23 other side.

24 MR. CHEN: So, again, in your opinion, you  
25 believe whether -- strike that.

1           My apologies can we take a very short, just  
2 five-minute, bio break? I drank too much soda.

3           MR. WEBER: Yeah.

4           (A recess transpires.)

5           MR. CHEN: We can get back on the record.

6 BY MR. CHEN:

7 Q.       On page 8 of Exhibit 1, which is the '336  
8 patent.

9 A.       Exhibit 1001?

10 Q.       Ah, yes. On page 8 of Exhibit 1001, which is  
11 the '336 patent, in your opinion, Dr. Wolfe, does the  
12 word "side" in the phrase to "sides of the fan" and the  
13 word "side" in the phrase "two sides of the body" mean  
14 the same thing?

15           MR. WEBER: Objection to form.

16           THE DEPONENT: I don't see the phrase "two sides  
17 of the body."

18 BY MR. CHEN:

19 Q.       Oh, okay. Strike that.

20           Let me see. Okay. I should read it more  
21 precisely.

22           So in the '336 patent's claim 1, does the word  
23 contained in the phrase -- strike that.

24           In the '336 patent, the phrase "two sides of the  
25 fan" has a word "side," correct?

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1 A. Yes.

2 Q. In the '336 patent, the phrase "on one side of  
3 the body" has a word "side" as well, correct?

4 A. Yes.

5 Q. Does the word "side" in the phrase "two sides of  
6 the fan" have the same meaning as that of the word  
7 "side" in the phrase "on one side of the body"?

8 A. I believe it does. As a general principle, if a  
9 word is used more than once in a claim, unless there's a  
10 good reason not to think it has the same meaning, it  
11 should have the same meaning. The ordinary meaning of  
12 the word "side" is relatively broad, and when you look  
13 at the preferred embodiments and the way that they are  
14 described, "side" applies in a broad way and there's no  
15 reason to really try to narrow it or distinguish between  
16 the two uses in the claim.

17 So as I described before, I think in both cases  
18 they mean on one half of the device or on the other half  
19 of the device, such as on the left side and the right  
20 side.

21 Q. So, Dr. Wolfe, in your opinion, the fact that  
22 one of the side -- I'm sorry. Strike that.

23 Dr. Wolfe, in your opinion -- strike that.

24 One of the two phrases we just discussed used  
25 the word "side" in connection with the fan while the

1 word "side" in the other claim phrase is used in  
2 connection with the body, correct?

3 A. The first usage is with respect to the fan, but  
4 also needs to be positioned with respect to the body.  
5 The second one does describe a side of the body.

6 Q. So in the first phrase, "In illumination area on  
7 at least two sides of the fan at the top of the body,"  
8 the word "side" and the word "top" are referring to  
9 different structures, correct?

10 MR. WEBER: Objection to form.

11 THE DEPONENT: Is the question whether top and  
12 side are different structures?

13 BY MR. CHEN:

14 Q. So let me clarify.

15 So in the first phrase -- so in the phrase, "In  
16 the illumination area on at least two sides of the fan  
17 at top of the body, the sides in this phrase are  
18 relative to the fan while the word "top" is relative to  
19 the fan body, correct?

20 A. That's correct. Although, if the fan is  
21 centered in the body, there may be -- there may -- there  
22 may be no practical difference.

23 Q. What -- what did you mean by that? Like there's  
24 no practical difference?

25 A. So if the fan is centered, then the left and

1 right side of the fan and the left and right side of the  
2 body are going to be in the same area.

3 Q. Oh, I see what you're saying. Okay.

4 A. And there's a little bit of ambiguity there as  
5 to whether "the fan" refers back to a fan or to an  
6 illumination fan, but I don't think it really matters in  
7 the way I've applied the claims.

8 Q. Dr. Wolfe, in your opinion, would a POSITA  
9 ever -- okay. Strike that.

10 Actually, let's go back to Huang in Figure 1.

11 In Huang's Figure 1, would a POSITA have  
12 understood the top of the illumination fan body to be  
13 the same as the upper side of the illumination fan body?

14 A. I think in the context of this claim, yes.  
15 Right? Because if you look at the preferred embodiment,  
16 the illumination area is not part of the fan. It's part  
17 of the body that is around or near the fan. I think  
18 that's consistent with the language.

19 Q. So in -- Dr. Wolfe, in your opinion, a side of  
20 the illumination fan body in Figure 1 of Huang can be  
21 coextensive with a top of the illumination fan body in  
22 Figure 1 of Huang, correct?

23 A. I mean, it can be, because otherwise, with the  
24 claim, the claim expects that something is both on the  
25 side of the fan and also at the top of the body.

1 Q. Okay. So I think maybe we're confusing the fan  
2 and illumination fan. So when I say "illumination fan,"  
3 I'm talking about the entire device.

4 A. I understand.

5 Q. Yeah, so -- so it's not that. So let me make  
6 sure that I read my question correctly.

7 Dr. Wolfe, in your opinion, a side of the  
8 illumination fan body in Figure 1 of Huang can be  
9 coextensive with a top of the illumination fan body in  
10 Figure 1 of Huang as the terms "side" and "top" are used  
11 in the '336 patent, correct?

12 A. I think so. I think those terms are used  
13 broadly. My ear is on my right side, but it's also at  
14 the top of my body.

15 Just so I understand your question, I'm not  
16 saying those two terms mean the exact same thing, but  
17 that there can be portions of the body that are in both.

18 Q. Yeah, I'm not saying those terms mean the same  
19 thing. I'm saying, like, you know, in a particular  
20 instance, a top can be coextensive with a side of a --  
21 of an illumination fan body. I guess that's the --  
22 that's the -- that's what I meant by that. But I'm not  
23 saying that, you know, as the term itself will be the  
24 same in all circumstances.

25 A. Certainly, a portion of the fan can be both on

1 the left or right side, and also be on the top.

2 Q. So, Dr. Wolfe, in a general sense, depending on  
3 how a device is divided, structures on the device can  
4 sometimes be on the same side while those same  
5 structures can also be on different sides, correct?

6 MR. WEBER: Objection to form.

7 THE DEPONENT: It depends how you define the  
8 sides. But if you're thinking of something like upper  
9 and lower as a side, then that can be true. Certainly,  
10 I would think of something as being on separate sides if  
11 I can hold it in such a way so that one is on the left  
12 and one is on the right.

13 BY MR. CHEN:

14 Q. Okay. But if you rotate that 90 degrees  
15 clockwise, for example, then the same right side will  
16 now be the bottom side, right?

17 A. That's true. But I think the way people  
18 ordinarily use those words --

19 Q. Uh-huh.

20 A. -- if you ask someone if something -- if two  
21 things are on separate sides, they will position it in  
22 such a way that the two things are on separate sides and  
23 then answer the question.

24 Q. Yeah. But if you divide something vertically,  
25 it's going to be left and right, or if you divide

1 something horizontally, then it is going to be top and  
2 bottom?

3 A. That is technically true. But, again, if you  
4 are thinking of top and bottom as sides, then they are  
5 still on separate sides.

6 Q. So you're -- you're construing the word  
7 "side" -- strike that.

8 You're construing the word "top" as a top side  
9 in the context of the '336 patent. Is that fair?

10 A. No. I think -- again, I think -- everything  
11 that I have looked at has a left and a right, so I  
12 didn't have to parse things too -- too carefully. But I  
13 think, you know, the ordinary meaning to a person of  
14 ordinary skill in the context of these claims is that if  
15 you can draw a line through the center and one thing is  
16 on one side of the line and the other thing is on the  
17 other side of the line, then they are on opposite sides.

18 And, again, this all has to be considered in the  
19 context of why things in the '336 patent are on opposite  
20 sides. It's so that you can bring signals in from one  
21 side and send them out on the other side without having  
22 to cross wires in front of the fan.

23 Q. How about neighboring sides? I mean, can -- do  
24 neighboring sides have to be opposite sides?

25 A. By neighboring sides, you mean around a corner?

1 Q. Yeah.

2 A. No, they don't have to be.

3 Q. Okay. But two sides around a corner are on the  
4 same sides or on two different sides, in your opinion?

5 A. I'm not sure I understand the question. I mean,  
6 I think you're asking me about the -- the edges, and,  
7 again, I would use the same definition. I think that in  
8 the context of the '336 patent, a person would -- would  
9 conclude that two things are on opposite sides if you  
10 can draw a line through the center and one is on one  
11 side of that line and the other is on the other side of  
12 that line.

13 MR. CHEN: Okay. Yeah, let's take a longer  
14 break this time. I'm just going to, you know, look  
15 through my exhibits to decide whether I have any further  
16 questions.

17 MR. WEBER: Okay.

18 MR. CHEN: Okay.

19 MR. WEBER: Would you like five, maybe 10  
20 minutes?

21 MR. CHEN: 20 minutes, until 5:00.

22 MR. WEBER: 20, until 5:00.

23 MR. CHEN: Okay. Yeah. Thank you.

24 (A recess transpires.)

25 MR. CHEN: Dr. Wolfe, so at this time, I don't

1 have any further questions, unless counsel has.

2 MR. WEBER: I don't have any questions.

3 MR. CHEN: Okay.

4 MR. WEBER: Maybe just reserve the right to read  
5 and sign, to the extent I need to reserve that.

6 MR. CHEN: Okay.

7 MR. WEBER: But I don't have any questions.

8 MR. CHEN: Okay. So at this time, we can  
9 conclude today's deposition. But, you know, similarly,  
10 we will reserve our right to call Dr. Wolfe back as  
11 needed. Okay.

12 MR. WEBER: You mean, like, if he submits  
13 another declaration or something?

14 MR. CHEN: Yes. Or -- or there's -- as the  
15 situation would warrant it. I mean, you know, I'm not  
16 saying that -- that, you know, we will do that just, you  
17 know, just a reservation of rights, that's all.

18 MR. WEBER: Okay. Understood. Thank you.

19 MR. CHEN: All right. Thank you.

20 (Proceeding Concludes at 5:02 p.m.)  
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I declare under penalty of perjury  
under the laws that the foregoing is  
true and correct.

Executed on \_\_\_\_\_ , 20\_\_\_\_,  
at \_\_\_\_\_, \_\_\_\_\_.

\_\_\_\_\_

SIGNATURE OF THE WITNESS

REPORTER'S CERTIFICATE

STATE OF CALIFORNIA ) ss.

I, DEREK L. HOAGLAND, CSR #13445, State of California,  
do hereby certify:

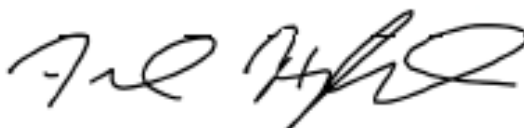
That prior to being examined, the witness named in the  
foregoing proceeding was by me sworn to testify to the  
truth, the whole truth and nothing but the truth;

That said proceeding was taken down by me by stenotype  
at the time and place therein stated and thereafter  
transcribed under my direction into computerized  
transcription.

I further certify that I am not of counsel nor attorney  
for nor related to the parties hereto, nor am I in any  
way interested in the outcome of this action.

In compliance with section 8016 of the Business and  
Professions Code, I certify under penalty of perjury  
that I am a certified shorthand reporter with license  
number 13445 in full force and effect.

Witness my hand this May 5, 2025.



DEREK L. HOAGLAND, CSR #13445

1 BROCK S. WEBER, ESQ.

2 brock.weber@pillsburylaw.com

3 May 5, 2025

4 RE: Thermaltake Technology Co, Ltd. v.

Lian Li Industrial Co. Ltd.

5 4/25/2025, Andrew Wolfe, (#7321286).

6 The above-referenced transcript has been  
7 completed by Veritext Legal Solutions and  
8 review of the transcript is being handled as follows:

9 \_\_\_ Per CA State Code (CCP 2025.520 (a)-(e)) - Contact Veritext  
10 to schedule a time to review the original transcript at  
11 a Veritext office.

12 \_\_\_ Per CA State Code (CCP 2025.520 (a)-(e)) - Locked .PDF  
13 Transcript - The witness should review the transcript and  
14 make any necessary corrections on the errata pages included  
15 below, notating the page and line number of the corrections.  
16 The witness should then sign and date the errata and penalty  
17 of perjury pages and return the completed pages to all  
18 appearing counsel within the period of time determined at  
19 the deposition or provided by the Code of Civil Procedure.  
20 Contact Veritext when the sealed original is required.

21 \_\_\_ Waiving the CA Code of Civil Procedure per Stipulation of  
22 Counsel - Original transcript to be released for signature  
23 as determined at the deposition.

24 \_\_\_ Signature Waived - Reading & Signature was waived at the  
25 time of the deposition.

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1    \_X\_Federal R&S Requested (FRCP 30(e)(1)(B)) - Locked .PDF  
2       Transcript - The witness should review the transcript and  
3       make any necessary corrections on the errata pages included  
4       below, notating the page and line number of the corrections.  
5       The witness should then sign and date the errata and penalty  
6       of perjury pages and return the completed pages to all  
7       appearing counsel within the period of time determined at  
8       the deposition or provided by the Federal Rules.  
9    \_\_\_ Federal R&S Not Requested - Reading & Signature was not  
10       requested before the completion of the deposition.

1 Thermaltake Technology Co, Ltd. v.  
Lian Li Industrial Co. Ltd.  
2 Andrew Wolfe (#7321286)

3 E R R A T A S H E E T

4 PAGE\_\_\_\_\_ LINE\_\_\_\_\_ CHANGE\_\_\_\_\_

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6 REASON\_\_\_\_\_

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24 (Andrew Wolfe)

Date

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[boards - chen]

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[computerized - correct]

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**[correct - deponent]**

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[entire - fan]

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[huang - inventor]

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[microprocessor - obvious]

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[obviousness - outcome]

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[outer - petition]

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[reapplied - responsibility]

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[rest - services]

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[stands - teach]

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[teaches - today]

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[today's - understanding]

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[understood - weber]

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[weber - year]

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[years - zoom]

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