

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2

3 BEFORE THE PATENT TRIAL AND APPEAL BOARD

4

5 ROBERT BOSCH LLC and DAIMLER AG,

6 Petitioners,

7

v.

8 ORBITAL AUSTRALIA PTY LTD,

9 Patent Owner

10

11 Case No. IPR2015-01254

12 Case No. IPR2015-01255

13 Case No. IPR2015-01256

14 U.S. Patent 6,923,387

15

16 Case No. IPR2015-01258

17 Case No. IPR2015-01259

18 U.S. Patent 5,655,365

19

20 Deposition of RONALD DOUGLAS MATTHEWS, PH.D.

21

Washington, D.C.

Thursday, March 17, 2016

22

9:23 a.m.

23 Job No. BO-078833

Pages 1 - 201

24 Reported by: Karen Young

<p style="text-align: right;">Page 2</p> <p>1 Deposition of RONALD DOUGLAS MATTHEWS, 2 PH.D., held at the offices of: 3 FINNEGAN, HENDERSON, FARABOW, 4 GARRETT & DUNNER, LLP 5 901 New York Avenue, Northwest 6 Washington, D.C. 20001-4413 7 (202) 408-4000 8 9 10 11 12 Pursuant to notice, before Karen Young, 13 Notary Public of the District of Columbia. 14 15 16 17 18 19 20 21 22 23 24</p>	<p style="text-align: right;">Page 4</p> <p style="text-align: center;">C O N T E N T S</p> <p>3 EXAMINATION OF RONALD DOUGLAS MATTHEWS, PH.D. PAGE 4 By Mr. Schultz..... 7 5 By Mr. Lavenue..... 198 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</p>
<p style="text-align: right;">Page 3</p> <p>1 A P P E A R A N C E S 2 ON BEHALF OF ROBERT BOSCH LLC: 3 AARON L. PARKER, ESQUIRE 4 DAVID C. REESE, ESQUIRE 5 FINNEGAN, HENDERSON, FARABOW, 6 GARRETT & DUNNER, LLP 7 901 New York Avenue, Northwest 8 Washington, D.C. 20001-4413 9 AARON.PARKER@FINNEGAN.COM 10 DAVID.REESE@FINNEGAN.COM 11 (202) 408-4000 12 13 14 LIONEL M. LAVENUE, ESQUIRE 15 FINNEGAN, HENDERSON, FARABOW, 16 GARRETT & DUNNER, LLP 17 Two Freedom Square 18 11955 Freedom Drive 19 Reston, Virginia 20190-5675 20 lionel.lavenue@finnegan.com 21 (571) 203-2700 22 23 ON BEHALF OF DAIMLER AG: 24 25 BRETT N. WATKINS, ESQUIRE 26 QUINN EMANUEL URQUHART & SULLIVAN, LLP 27 777 Sixth Street, Northwest 28 11th Floor 29 Washington, D.C. 20001 30 brettwatkins@quinnemanuel.com 31 (202) 538-8160 32 33 ON BEHALF OF THE PATENT OWNER: 34 ANDREW W. SCHULTZ, ESQUIRE 35 DAVID M. MAGEE, ESQUIRE 36 PEPPER HAMILTON LLP 37 19th Floor, High Street Tower 38 125 High Street 39 Boston, Massachusetts 02110-2736 40 mageed@pepperlaw.com 41 schultza@pepperlaw.com 42 (617) 204-5100</p>	<p style="text-align: right;">Page 5</p> <p style="text-align: center;">E X H I B I T S (Attached to Transcript)</p> <p>3 Exhibit 1 Notice of Deposition, IPR2015-01254. 7 4 Exhibit 2 Notice of Deposition, IPR2015-01255. 13 5 Exhibit 3 Notice of Deposition, IPR2015-01256. 13 6 Exhibit 4 Notice of Deposition, IPR2015-01258. 9 7 Exhibit 5 Notice of Deposition, IPR2015-01259. 15 8 Exhibit 6 Declaration of Dr. Ron Matthews, IPR2015-01254..... 22 9 10 Exhibit 7 Declaration of Dr. Ron Matthews, IPR2015-01255..... 32 11 Exhibit 8 Declaration of Dr. Ron Matthews, IPR2015-01256..... 33 12 13 Exhibit 9 U.S. Patent No. 6,923,387..... 35 14 15 Exhibit 10 U.S. Patent No. 5,655,365..... 60 16 17 Exhibit 11 Declaration of Dr. Ron Matthews, IPR2015-01258..... 63 18 Exhibit 12 Declaration of Dr. Ron Matthews, IPR2015-01259..... 63 19 20 Exhibit 13 Ritchie e-mail to Len, 6/11/15..... 73 21 22 Exhibit 14 Dalton e-mail to Len, 3/12/14..... 80 23 24 Exhibit 15 Petition for Inter Partes Review of U.S. Patent No. 5,655,365, IPR2015-01258 103 25 Exhibit 16 Petition for Inter Partes Review of U.S. Patent No. 5,655,365, IPR2015-01259 104 26 27 Exhibit 17 Introduction Comparison..... 142 28 29 Exhibit 18 Crank Angle Timing Diagram..... 157 30 31 Exhibit 19 Crank Angle Timing Diagram, Patent</p>

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2 BY MR. SCHULTZ:

3 Q. You've been handed what's marked as Exhibit

4 1. Have you seen that document before?

5 A. No, sir, I don't believe so.

6 Q. Can you read the title of it?

7 A. It says United States Patent and Trademark

8 Office, Before the Patent Trial and Appeal Board,

9 Robert Bosch LLC and Daimler AG, Petitioners, versus

10 Orbital Australia PTY Limited, Patent Owner, Case

11 Number IPR2015-01254, U.S. Patent 6,923,387, Notice of

12 Deposition of Ron Matthews, Ph.D.

13 Q. Okay. The next page indicates that the

14 deposition in that proceeding, IPR2015-1254 on the

15 front page will begin today at 9:00, and you've never

16 seen this document.

17 A. I don't believe so.

18 Q. Well, this indicates why we're here today.

19 - - -

20 (Deposition Exhibit Numbers 2 and 3 were

21 marked for identification.)

22 - - -

23 THE WITNESS: Thank you.

24 MR. SCHULTZ: Exhibit 3.

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1 P R O C E E D I N G S

2 RONALD DOUGLAS MATTHEWS, PH.D.,

3 having been duly sworn, was examined as follows:

4 - - -

5 EXAMINATION BY COUNSEL FOR THE PATENT OWNER

6 BY MR. SCHULTZ:

7 Q. Good morning, Dr. Matthews. Could you

8 please state your full name for the record?

9 A. Ronald Douglas Matthews.

10 Q. Very good, and your date of birth?

11 A. 2/24/49.

12 Q. And your home address?

13 A. 4508 Sinclair Avenue, S-I-N-C-L-A-I-R,

14 Austin, Texas.

15 Q. Are you currently employed?

16 A. I am.

17 Q. Where?

18 A. I'm a full professor of mechanical

19 engineering at the University of Texas at Austin.

20 MR. SCHULTZ: All right. I'm going to --

21 can you mark this as Exhibit 1 please?

22 - - -

23 (Deposition Exhibit Number 1 was marked for

24 identification.)

Page 9

1 - - -

2 (Deposition Exhibit Number 3 was marked for

3 identification.)

4 - - -

5 MR. SCHULTZ: Exhibit 4.

6 - - -

7 (Deposition Exhibit Number 4 was marked for

8 identification.)

9 - - -

10 MR. LAVENUE: Exhibit 4 is for the '365

11 patent. Do you want to mix these into the same or do

12 you want to separate them?

13 MR. SCHULTZ: I was probably going to -- it

14 makes sense to mix them in, honestly.

15 MR. LAVENUE: You're not going to have a

16 clear division between the two?

17 MR. SCHULTZ: No, sir, I'm going to look at

18 probably both of them in parallel.

19 MR. LAVENUE: Okay. Well, we'll object to

20 that because these are different proceedings, and I

21 don't think it makes sense to have both proceedings

22 included in the same. So you said you're going to

23 start with the '387 patent, and I think you need to do

24 the '387 patent, which is IPR-1254 and 1255 and 1256,

<p style="text-align: right;">Page 10</p> <p>1 finish that, and then you can close that one out and 2 then go to the '365 patent. I don't think it makes 3 sense to do the two. 4 I can't force you to do it one way or the 5 other, but I'm going to object here. I think that 6 would be confusing for the board, I think it will be 7 confusing for the judges, I think it will be confusing 8 to the administration proceedings. To the extent that 9 you try to ask questions for both, then I'll reserve 10 the right to call the board because I don't think you 11 should be able to ask a question on the '387 patent 12 and then ask about the '365 patent and go back to the 13 '387 patent. It's just confusing. If you have a 14 clear division within your questioning and you're not 15 going to separate the transcripts, then you know, I'll 16 let you do that, but my recommendation is that we have 17 two -- two separate transcripts. 18 MR. SCHULTZ: Appreciate it. 19 MR. MAGEE: I think there would be a lot of 20 overlap in the questioning. We'll be rehashing a lot 21 of the same ground and asking the same questions 22 twice. So to the extent that, you know, you have your 23 latter suggestion as to a division in the one 24 transcript of having, you know, '387 area and '365</p>	<p style="text-align: right;">Page 12</p> <p>1 for the '365 and be back in just a minute. 2 - - - 3 (Discussion off the record) 4 - - - 5 BY MR. SCHULTZ: 6 Q. Dr. Matthews, I believe you should have 7 what's been marked as Exhibits 1 through 5 now before 8 you; is that correct? 9 A. I have 1 through 4. 10 Q. One through four. 11 - - - 12 (Deposition Exhibit Number 5 was marked for 13 identification.) 14 - - - 15 THE WITNESS: Thank you. 16 BY MR. SCHULTZ: 17 Q. Have you had a chance to look at all those 18 documents? 19 A. I have. Thank you. 20 Q. Exhibit 1 should be captioned -- part of the 21 caption is IPR2015-1254. Do you see that -- 22 A. I do. 23 Q. -- on the front page? And that's involving 24 U.S. patent number 6,923,387?</p>
<p style="text-align: right;">Page 11</p> <p>1 area is probably the best approach. 2 MR. LAVENUE: Okay, that's fine with us. 3 MR. MAGEE: Just do what you were going to 4 do. That's fine. So we're going -- we're going to be 5 talking about the '365 first. 6 MR. LAVENUE: Oh, not the '387. 7 MR. MAGEE: The '387 we were going to use in 8 -- in -- in part of the questioning just as a 9 comparison of a couple of points, but it's going to be 10 the '365 patent he's going to be questioning on first. 11 MR. LAVENUE: Okay, then we'll need to take 12 a break because you said that we're going to start 13 with the '387 so we brought our materials for the 14 '387, and our materials for the '385 are still in our 15 break room. 16 MR. MAGEE: Yeah, I think there -- there 17 must have -- there was some confusion because we 18 didn't have the '387 patent, but the intent of my 19 saying we were going to start with the '387 was saying 20 that we were going to use it in the early deposition 21 so we needed it, so -- 22 MR. LAVENUE: Okay. 23 MR. MAGEE: We can take a break. 24 MR. LAVENUE: So we'll go get our materials</p>	<p style="text-align: right;">Page 13</p> <p>1 A. Yes, it is. 2 Q. Okay. Exhibit 2 is captioned IPR2015-01255. 3 A. Yes, sir. 4 Q. And that's also involving U.S. patent 5 6,923,387? 6 A. Yes, sir. 7 Q. And Exhibit 3 is captioned IPR2015-01256. 8 A. Yes, sir. 9 Q. Also involving the '387 patent. 10 A. Yes, sir. 11 Q. For today's proceedings, I would intend to 12 sometimes refer to these as the 1254, 1255 or 1256 13 proceedings. 14 A. Okay. 15 Q. Will you understand that to mean these IPRs? 16 If you have any questions, feel free to ask. 17 A. Thank you. 18 Q. And I'll refer to that U.S. patent 6,923,387 19 as the '387 patent. 20 A. Yes, sir. 21 Q. And you'd understand that to be -- 22 A. I do. 23 Q. -- the 692 -- 24 A. Thank you.</p>

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1 Q. Turning to Exhibit 1, sorry, the first page
 2 of Exhibit 1 --
 3 A. Yes, sir.
 4 Q. After the title page?
 5 A. Okay.
 6 Q. Can you read that first sentence please?
 7 A. "Pursuant to 37 CFR 42.54, patent owner
 8 Orbital Australia PTY Limited FKA Orbital Engine
 9 Company Australia PTY Limited provides notice to
 10 petitioners that the deposition of Dr. Ron Matthews
 11 will be held at the offices of Finnegan, Henderson,
 12 Farabow, Garrett & Dunner, LLP, 901 New York Avenue,
 13 Northwest, Washington, D.C., on March 17th, 2016,
 14 beginning at 9:00 a.m. The deposition" --
 15 Q. That's fine.
 16 A. Okay.
 17 Q. Thank you. Turning to Exhibit 4, it's
 18 entitled the "Notice of Deposition of Ron Matthews,
 19 Ph.D."
 20 A. Yes, sir.
 21 Q. The case is captioned IPR2015-01258.
 22 A. Yes, sir.
 23 Q. And that's involving U.S. patent 5,655,365.
 24 A. Yes, sir.

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1 Q. And I will refer to that as the 1258
 2 proceeding. Will you understand that to refer to the
 3 IPR2015-1258?
 4 A. Yes, sir.
 5 Q. And Exhibit 5 is the notice of deposition of
 6 Ron Matthews, Ph.D. in the case captioned IPR2015 dash
 7 01259, also involving the '365 patent.
 8 A. Yes, sir.
 9 Q. That's U.S. patent 5,655,365.
 10 A. Yes, sir.
 11 Q. Okay. And looking at the first page after
 12 the title page of Exhibit 4 --
 13 A. Yes, sir.
 14 Q. Can you tell me the date and time that the
 15 deposition will be held?
 16 A. March 17th, 2016 beginning at 9:00 a.m.
 17 Q. Very good, and you can confirm that Exhibits
 18 2 and 3 and Exhibit 5 similarly recite the same time?
 19 A. Yes, sir.
 20 Q. Thank you. You were not provided copies of
 21 any of Exhibits 1 through 5?
 22 A. Don't believe so.
 23 Q. Do you have an understanding of why you're
 24 here today?

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1 A. To give testimony in a deposition.
 2 Q. In support of --
 3 A. In support of the proceedings between Bosch
 4 and Daimler and Orbital.
 5 Q. Very good. Have you had your deposition
 6 taken before?
 7 A. I have.
 8 Q. About how many times?
 9 A. Several. I don't recall exactly.
 10 Q. Okay. More than ten?
 11 A. No.
 12 Q. When was the last time you were deposed
 13 approximately?
 14 A. I believe it was about five years ago.
 15 Q. Okay. Was it involving a patent case?
 16 A. It was.
 17 Q. Of all the times that you've been deposed,
 18 do you recall them all involving patent cases?
 19 A. They were not.
 20 Q. They were not. What other types of cases
 21 have you dealt with?
 22 A. I've dealt with cases involving failure of
 23 engines that led to some kind of damage or damages,
 24 and so -- yeah, so that's -- that's primarily it.

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1 Q. When was the last time you testified in a
 2 patent case?
 3 A. Two years ago I think.
 4 Q. And you weren't deposed?
 5 A. No.
 6 Q. What kind of technologies have you been
 7 involved with with regard to previous patent cases?
 8 A. So the most recent one was between a
 9 Louisiana company called Gaitor-Tail and two other
 10 companies called Go Devil and -- I can't remember the
 11 name of the other one, but they all had mud boat
 12 engines. So these are engines for small watercraft
 13 that operate in very shallow water, and so fellow who
 14 runs Gaitor-Tail, while he was in school, one of the
 15 schools in Louisiana, came up with a concept for a
 16 better way of providing transmission of engine power
 17 from the engine to the propeller, and then a couple
 18 other companies came out with his concept that he had
 19 patented.
 20 Q. And this gentleman sued those other
 21 companies for patent infringement?
 22 A. That's correct.
 23 Q. And you drafted expert reports on --
 24 A. Yes, I did.

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