

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

FORD MOTOR COMPANY,)
)
Petitioner,)
)
vs.) Case Number
) IPR2014-01415
PAICE LLC and ABELL)
FOUNDATION, INC.,)
)
Patent Owner.)

DEPOSITION OF JEFFREY L. STEIN, Ph.D.

Southfield, Michigan

Friday, May 29, 2015

Reported by:

RACHEL F. GARD, CSR, RPR, CLR, CRR

REF NO. 14261B

TransPerfect Legal Solutions

May 29, 2015
1:06 p.m.

Deposition of JEFFREY L. STEIN, Ph.D., at the offices of Brooks Kushman, P.C., 1000 Town Center, Suite 2200, Southfield, Michigan, pursuant to notice before Rachel F. Gard, Certified Shorthand Reporter, Registered Professional Reporter, Certified LiveNote Reporter, Certified Realtime Reporter.

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BY: W. PETER GUARNIERI, ESQ.

(Witness previously sworn.)

WHEREUPON:
JEFFREY L. STEIN, Ph.D.,
called as a witness herein, having been previously duly sworn, was examined and testified as follows:

CROSS-EXAMINATION

BY MR. GUARNIERI: 01:06

Q. Dr. Stein, you're still sworn in today from the morning. 01:06

A. I agree to be. 01:06

Q. We're going to ask you questions now on IPR2014-04015. 01:06

MR. GUARNIERI: Why don't we mark our first exhibit. 01:06
(Stein Exhibit Number 7 marked for identification.) 01:06

BY MR. GUARNIERI: 01:07

Q. It should be now Exhibit 7. 01:07

A. Yes. 01:07

Q. And can you identify what Exhibit 7 is? 01:07

A. Declaration of Dr. Jeffrey L. Stein in Support of Second Petition for Inter Partes Review under a bunch of numbers, and this is 01:07

Page 6			Page 8		
1	for IPR Case Number IPR2014-01415.	01:07	1	isn't listed here, right?	01:12
2	Q. And the patent subject of this IPR	01:07	2	Q. Aside from these matters.	01:12
3	is 8,214,097. You recognize that as the '097	01:08	3	A. So in what form of testimony? Does	01:12
4	patent, right?	01:08	4	it matter?	01:12
5	A. Correct.	01:08	5	Q. Well, we'll take them one at a time.	01:12
6	Q. And can you confirm that that's your	01:08	6	Have you testified in any District Court cases	01:12
7	signature on Page 320 of your declaration,	01:08	7	in the last year that aren't listed on here?	01:12
8	which for the record is Ford Exhibit 1102?	01:08	8	A. I don't believe so.	01:13
9	A. Yes. I'm not a handwriting expert,	01:08	9	Q. Have you been deposed in any	01:13
10	by the way, but it looks like my signature.	01:08	10	additional matters in the last year that aren't	01:13
11	Q. I hope you signed it and not someone	01:08	11	listed here?	01:13
12	else, sir.	01:08	12	A. No. I don't believe so. It would	01:13
13	A. I certainly signed it.	01:08	13	be helpful to have my records in front of me,	01:13
14	Q. Good.	01:08	14	but I don't think so from memory.	01:13
15	Dr. Stein, when was this declaration	01:08	15	Q. Have you submitted any declarations	01:13
16	executed?	01:08	16	in any other IPRs in the last year other than	01:13
17	A. When did I sign it?	01:08	17	the PAICE/Ford IPR?	01:13
18	Q. When did you sign this declaration?	01:09	18	A. Yes.	01:13
19	A. August 29th, 2014.	01:09	19	Q. And what would those be -- That	01:13
20	Q. So between August 29th, 2014 and	01:09	20	aren't listed on your resume?	01:13
21	today, have any of your opinions expressed in	01:09	21	A. Yes.	01:13
22	Exhibit 7 changed that you're aware of sitting	01:09	22	Q. And what would those be? Do you	01:13
23	here today?	01:09	23	remember the names of the IPRs or the names of	01:13
24	A. I'm not aware of any opinions	01:09	24	the company you were retained by in each one?	01:13
25	expressed in this declaration that I wrote on	01:09	25	Why don't we start with that.	01:13
Page 7			Page 9		
1	and signed on August 29, 2014 that aren't also	01:09	1	A. I don't remember the formal case	01:14
2	true today or that I would stand behind today.	01:09	2	caption or, you know, the parties caption off	01:14
3	Q. And then on Pages, I believe it's	01:10	3	the top of my head. I'd have to look it up.	01:14
4	322 to 349, this is the resume that you	01:10	4	I'm glad to provide it to you, but I don't ...	01:14
5	submitted along with your declaration; is that	01:10	5	Q. Well, why don't we -- How about	01:14
6	correct? I believe it's Appendix A.	01:10	6	this? How many IPRs have you worked on,	01:14
7	A. Yes. That's my CV, or one of my	01:10	7	submitted declarations in, in the past year	01:14
8	CV -- or one form of my CV, I should say.	01:10	8	that are not listed on your CV?	01:14
9	Q. So this declaration looks like it	01:10	9	A. So two IPRs with the same client, if	01:14
10	was last updated in January of 2014. Has	01:10	10	you will.	01:14
11	anything changed on the resume relevant to this	01:10	11	Q. And which client is that?	01:14
12	IPR?	01:10	12	A. Well, that's -- I'm not sure the	01:14
13	A. Well, certainly my CV has changed	01:10	13	precise way that the client would want to be	01:15
14	since then. I have additional publications	01:11	14	described. But I can say that loosely	01:15
15	that probably are not listed here. I'm happy	01:11	15	speaking, it's Chrysler. Chrysler is owned by	01:15
16	to give you an updated CV, if you'd like it.	01:11	16	Fiat, and it's some formal name that I don't	01:15
17	There may be an award that's not on here; I'm	01:11	17	remember off the top of my head.	01:15
18	not sure. But there's certainly possibilities	01:11	18	Q. I understand. Do you recall which	01:15
19	of some things that have changed to it.	01:11	19	law firm you're working with in those few	01:15
20	Q. If you look on Page 347, you have a	01:11	20	matters?	01:15
21	list of cases that you've -- testimony history	01:11	21	A. I think the law firm's name is	01:15
22	for the past 5 years, are there any additional	01:11	22	Venerable. Does that sound familiar?	01:15
23	cases that you have testified in in the past	01:11	23	Q. Venable perhaps?	01:15
24	roughly year and few months?	01:11	24	A. Venable, thank you.	01:15
25	A. Of course there's this matter, which	01:12	25	Q. So other than those two IPRs, have	01:15

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1 you submitted declarations or expert reports of 01:15
 2 some kind in any other proceedings in the past 01:15
 3 year that are not listed on your CV? 01:15
 4 A. Yes. 01:16
 5 Q. So what else? 01:16
 6 A. So I've submitted a declaration or 01:16
 7 report/declaration, I don't remember which 01:16
 8 formal title the document had, under a 01:16
 9 different case than the IPR matter I just 01:16
 10 described. 01:16
 11 Q. What is that case? 01:16
 12 A. That case was called, captioned 01:16
 13 Claire versus Chrysler. 01:16
 14 Q. And were you also working for 01:16
 15 Chrysler in that matter as well? 01:16
 16 A. Yes. 01:16
 17 Q. Do you know if that matter was 01:16
 18 related to the IPRs that you were working on? 01:16
 19 A. It's not. 01:16
 20 Q. Okay. So other than the IPRs and 01:16
 21 the report or declaration -- sorry, actually 01:16
 22 let me -- a quick followup, this Claire versus 01:16
 23 Chrysler, is this a District Court case? 01:17
 24 A. I don't remember. 01:17
 25 Q. So other than this Claire versus 01:17

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1 Chrysler matter and the two IPRs that we just 01:17
 2 discussed, are there any other reports or 01:17
 3 declarations that you've submitted in the last 01:17
 4 year that are not listed on your CV, other than 01:17
 5 the PAICE matters, of course? 01:17
 6 A. I don't believe so. But again, I 01:17
 7 like to leave open the possibility of checking 01:17
 8 my records to see if I just am forgetting to 01:17
 9 include one. 01:17
 10 Q. Sitting here today, you just don't 01:17
 11 recall any others? 01:17
 12 A. Correct. 01:17
 13 Q. Dr. Stein, do you consider yourself 01:17
 14 to be an expert in the relevant field for the 01:17
 15 '097 patent? 01:18
 16 A. Well, I'm not sure if you're asking 01:18
 17 me to make a legal determination, which is what 01:18
 18 it sounds like. 01:18
 19 Q. Your lay understanding of what the 01:18
 20 term "expert" means. 01:18
 21 A. So I believe that I'm an expert in 01:18
 22 mechanical engineering as applied to automotive 01:18
 23 engineering, and more specifically I have 01:18
 24 expertise in hybrid electric vehicle design and 01:18
 25 control. So I believe that I have expertise in 01:18

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1 the areas that are in the fields or in the 01:18
 2 concepts that are presented in the '097 patent. 01:19
 3 Q. Why don't we turn to Paragraph 39 of 01:19
 4 your declaration. Based on the definition of 01:19
 5 the relevant field for purposes of the '097 01:19
 6 patent that you give in Paragraph 39 of 01:19
 7 Exhibit 7, are you an expert according to your 01:19
 8 lay understanding of the term "expert" in that 01:20
 9 relevant field? 01:20
 10 MR. TURNER: Objection. Form. 01:20
 11 Vague. 01:20
 12 BY THE WITNESS: 01:20
 13 A. I mean I stand by the paragraph that 01:20
 14 is written here. 01:20
 15 Q. Yes, I'm not asking you about the 01:20
 16 basis of the paragraph, sir. I'm asking you to 01:20
 17 use the definition that you've given in the 01:20
 18 paragraph. And based on that definition of the 01:20
 19 relevant field for purposes of the '097 patent, 01:21
 20 I'm asking you, are you an expert in the 01:21
 21 relevant field? 01:21
 22 A. So the wording I use here is that: 01:21
 23 Methods and apparatuses for controlling and 01:21
 24 operating a hybrid electric vehicle and methods 01:21
 25 for improving fuel economy and reducing 01:21

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1 emissions. And I believe that I have expertise 01:21
 2 in these areas from my lay understanding of 01:22
 3 what the word "expert" means. 01:22
 4 Q. Does that include designing hybrid 01:22
 5 powertrain control strategies and the related 01:22
 6 architecture? 01:22
 7 MR. TURNER: Objection. Vague. 01:22
 8 BY THE WITNESS: 01:22
 9 A. You're reading what I have written 01:22
 10 in the second -- the next paragraph, 01:22
 11 Paragraph 40, that I have extensive experience 01:22
 12 in the relevant field including experience 01:22
 13 related to hybrid powertrain control strategies 01:22
 14 and related architecture. Based on my 01:22
 15 experiences, I have established an 01:23
 16 understanding of the relevant field. I believe 01:23
 17 that's a true statement. 01:23
 18 Q. That wasn't quite my question. My 01:23
 19 question was: Do you have experience designing 01:23
 20 hybrid powertrain control strategies and the 01:23
 21 related control architecture? Your declaration 01:23
 22 says you have experience relating to it. I'd 01:23
 23 just like to know whether you've designed a 01:23
 24 hybrid powertrain and control strategy? 01:23
 25 A. I mean, the answer -- Excuse me. So 01:23

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1 what do you mean, you know -- So the answer is 01:23
 2 yes, I have been involved in working with my 01:23
 3 students in research on the design and control 01:23
 4 of hybrid electric vehicles, and we've looked 01:23
 5 at some unique control strategies for hybrid 01:24
 6 electric vehicles. 01:24
 7 Q. Great. Thank you. Let's mark a few 01:24
 8 more exhibits. 01:24
 9 (Stein Exhibit Number 8 marked for 01:24
 10 identification.) 01:24
 11 (Stein Exhibit Number 9 marked for 01:24
 12 identification.) 01:24
 13 BY MR. GUARNIERI: 01:25
 14 Q. So, Dr. Stein, the court reporter 01:25
 15 has just placed in front of you what has been 01:25
 16 marked first as Exhibit 8, which is Ford 01:25
 17 Exhibit 1101, U.S. Patent No. 8,214,097. 01:25
 18 Do you recognize this exhibit? 01:25
 19 A. Yes, I do. 01:25
 20 Q. And do you recognize this as the 01:25
 21 '097 patent that's the subject of this IPR? 01:25
 22 A. Yes. 01:25
 23 Q. And then if you look at Exhibit 9 01:25
 24 that's marked as Ford Exhibit 1104, it's U.S. 01:25
 25 Patent No. 5,343,970, and do you recognize this 01:25

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1 exhibit? 01:25
 2 A. Yes, I do. 01:25
 3 Q. And is this the Severinsky '970 01:25
 4 patent that you referred to? 01:25
 5 A. In my declaration, yes. 01:25
 6 Q. And while we're talking today, if I 01:25
 7 refer to Severinsky, you'll understand that I'm 01:25
 8 referring to this patent or converse, the '970 01:26
 9 patent, either one? How about this? Let me 01:26
 10 strike that and ask: What would you prefer to 01:26
 11 refer to this patent as? 01:26
 12 A. The '970. 01:26
 13 Q. All right. We'll call this the '970 01:26
 14 patent. Sometimes it's a little confusing with 01:26
 15 the '097 and '970. I just want to make sure 01:26
 16 we've got our numbers straight. 01:26
 17 A. Sure. 01:26
 18 Q. So, Dr. Stein, why don't you put 01:26
 19 Exhibit 9, the '970 patent, in front of you. 01:26
 20 And are you familiar with the '970 patent's 01:26
 21 low-speed mode? 01:26
 22 A. So I've reviewed the '970 patent, 01:26
 23 and I understand that the words low speed, 01:26
 24 perhaps low-speed mode perhaps exist in this 01:27
 25 patent. Is that what you're asking me? 01:27

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1 Q. So if the words exist in the patent, 01:27
 2 do you recognize that the '970 patent teaches a 01:27
 3 low-speed mode of operation? 01:27
 4 A. It has a mode of operation which it 01:27
 5 utilizes when the vehicle is operating where 01:27
 6 the output torque required to propel the 01:27
 7 vehicle is relatively small, which is typical 01:27
 8 of around town or in traffic or what this 01:27
 9 patent sometimes calls the low-speed mode. 01:27
 10 It's just a label or a proxy for the operation 01:28
 11 of the vehicle when the torque output required 01:28
 12 to propel the vehicle is low. 01:28
 13 Q. What do you mean by label or proxy? 01:28
 14 A. So the '970 describes the hybrid 01:28
 15 vehicle as operating in different modes, and it 01:28
 16 describes these modes in terms of the output 01:28
 17 torque required to propel the vehicle, which 01:28
 18 I've outlined in my declaration. And the -- 01:28
 19 So, for example, it has a mode called highway 01:29
 20 cruising mode. That's a label or proxy for 01:29
 21 when the torque values are at a certain amount 01:29
 22 where the engine is in its efficient range of 01:29
 23 operation and is used alone to propel the 01:29
 24 vehicle. So -- 01:29
 25 Q. Dr. Stein, in answering my question, 01:29

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1 you've used the exact same phrase. What do you 01:29
 2 mean by label or proxy? 01:29
 3 A. It's a set of words or name that is 01:29
 4 meant to be a shorthand notation for referring 01:29
 5 the reader to a specific mode of operation. So 01:30
 6 the, quote/unquote, low-speed mode refers to a 01:30
 7 mode which the torque is relatively smaller and 01:30
 8 where the motor alone is used to propel the 01:30
 9 vehicle without the engine, so that's kind of a 01:30
 10 long set of words to use. 01:30
 11 The patent uses this label or proxy, 01:30
 12 if you will. Rather than using it with a long 01:30
 13 set of words, it uses a shorthand notation and 01:30
 14 calls this a low-speed mode because with these 01:30
 15 low torques, the vehicle is generally traveling 01:30
 16 in something we might call, you know, lower 01:30
 17 speeds. 01:30
 18 Q. So looking at the '970 patent, can 01:30
 19 you identify for me where '970 discloses 01:30
 20 operating in low-speed mode based on the output 01:31
 21 torque required to propel the vehicle? 01:31
 22 A. Well -- So I refer you to my 01:31
 23 declaration, Paragraph 194, which is under the 01:33
 24 heading 1.7. It's claim 1.7: Operating the at 01:33
 25 least one electric motor to provide torque to 01:33

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