

**In The Matter Of:**  
*Ford Motor Company vs.*  
*Paice, L.L.C., et al.*

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*Neil Hannemann*  
*September 4, 2015*

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Page 1

1 UNITED STATES PATENT AND TRADEMARK OFFICE  
 2  
 3 BEFORE THE PATENT TRIAL AND APPEAL BOARD  
 4  
 5 FORD MOTOR COMPANY  
 6 Petitioner,  
 7 v.  
 8 PAICE LLC & ABELL FOUNDATION, INC.  
 9 Patent Owner  
 10  
 11 U.S. Patent No. 8,214,097  
 12 IPR Case No.: IPR2014-01415  
 13  
 14 Videoconference Deposition of NEIL HANNEMANN  
 15 Washington, D.C.  
 16 Friday, September 4, 2015  
 17 10:42 a.m.  
 18  
 19  
 20  
 21  
 22  
 23 Job No. 90944  
 24 Pages 1 - 57  
 25 Reported by: Karen Young

Page 2

1 Videoconference Deposition of NEIL HANNEMANN,  
 2 held at the offices of:  
 3 FISH & RICHARDSON P.C.  
 4 1425 K Street, Northwest  
 5 11th Floor  
 6 Washington, D.C. 20005  
 7 (202) 783-5070  
 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  
 25

Page 3

1 A P P E A R A N C E S  
 2 ON BEHALF OF FORD MOTOR COMPANY:  
 3 (by videoconference)  
 4 ANDREW B. TURNER, ESQUIRE  
 5 JOHN P. RONDINI, ESQUIRE  
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 12 ON BEHALF OF PAICE LLC & ABELL FOUNDATION, INC.:  
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1 PROCEEDINGS  
2 (Deposition Exhibit Numbers 1 through 6  
3 were marked for identification.)  
4 **MR. TURNER:** This is a deposition for  
5 IPR2014-01415. I'd like to ask the court reporter to  
6 please swear in the witness.  
7 NEIL HANNEMANN,  
8 having been duly sworn, testified as follows:  
9 EXAMINATION BY COUNSEL FOR FORD MOTOR COMPANY  
10 - - -  
11 **BY MR. TURNER:**  
12 Q. All right, thank you. Now, I ask the  
13 witness, please state your -- your full name for the  
14 record.  
15 **A. Neil Hannemann.**  
16 Q. Okay, Mr. Hannemann, has your experience  
17 changed since the last depositions that we've -- that  
18 we had on these -- these IPRs?  
19 **A. Well, I try to think I learn something**  
20 **every day, so I'm sure I've gained some types of**  
21 **knowledge and experience, but I wouldn't say in a**  
22 **substantial manner that would affect my background**  
23 **that's been discussed in prior depositions.**  
24 Q. Okay, so nothing relevant to your technical  
25 expertise related to these hybrid vehicles?

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1 **A. I would say nothing significant, no.**  
2 Q. Okay, all right, and what did you do to --  
3 to prepare for this deposition?  
4 **A. Well --**  
5 **MR. LIVEDALEN:** I counsel the witness not  
6 to reveal any protected communications between he and  
7 counsel.  
8 **A. Okay, basically I -- I read through my**  
9 **declaration, the patents and some of the supporting**  
10 **material and met with -- met with the counsel here at**  
11 **their office yesterday and the day before.**  
12 Q. Okay, so the -- and with -- with whom did  
13 you meet? You meet with --  
14 **A. Yeah, Mr. Livedalen and Mr. Guarnieri. I**  
15 **never get the --**  
16 Q. Okay.  
17 **A. -- pronunciation right.**  
18 Q. Anyone else?  
19 **A. No.**  
20 Q. Okay. And so the documents -- so you  
21 mentioned you reviewed some of the documents. These  
22 were ones that were cited in your declaration?  
23 **A. Yes.**  
24 Q. Is that -- okay. Did you review any  
25 documents outside of those cited in your declaration?

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1 **A. No, I did not.**  
2 Q. Okay, all right, so the court reporter  
3 marked as Exhibit 1, will you please give Exhibit 1  
4 to the witness? Could you please tell us, what is  
5 Exhibit 1?  
6 **A. This is my declaration in support of patent**  
7 **owner's response for this particular case.**  
8 Q. Okay. Mr. Hannemann, can you tell us how  
9 much time you spent preparing this document?  
10 **A. Probably not. I probably couldn't. Not**  
11 **with any degree of certainty, no.**  
12 Q. Think it was more than 20 hours?  
13 **A. For this particular one, a lot of the**  
14 **material had been gone over before, so I would say**  
15 **less than 20 hours for this particular one.**  
16 Q. Okay. And who did you work with in  
17 preparing this Exhibit 1?  
18 **MR. LIVEDALEN:** Again, I'd counsel the  
19 witness not to reveal any protected communications.  
20 **A. This one was -- was Mr. Guarnieri.**  
21 Q. Okay. So this declaration concerns patent  
22 8,214,097. Now, have you -- have you analyzed the --  
23 we sometimes refer to this as the '097 patent. Have  
24 you analyzed the '097 patent for any other matters  
25 outside of these IPRs?

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1 **A. Not outside these IPRs, no.**  
2 Q. Okay. Please turn to paragraph 162 of  
3 Exhibit 1.  
4 **A. Okay.**  
5 Q. All right. So 162 -- included in paragraph  
6 162, you -- you have some claim limitations from  
7 claim 1, claim 11 and claim 21. For the record,  
8 could you -- could you read the limitations of claim  
9 1 please?  
10 **A. Sure. "Operating said internal combustion**  
11 **engine to provide torque to the hybrid vehicle when**  
12 **the torque required to operate the hybrid vehicle is**  
13 **between a setpoint, SP, and a maximum torque output,**  
14 **MTO, of the engine, wherein the engine is operable to**  
15 **efficiently produce torque above SP and wherein SP is**  
16 **substantially less than MTO."**  
17 Q. Now, Mr. Hannemann, in your opinion, does  
18 this claim limitation require starting or stopping  
19 the engine?  
20 **MR. LIVEDALEN:** Objection, form.  
21 **A. Well, it -- it says operating the engine,**  
22 **and my interpretation of operating is running the**  
23 **engine. If it's not running when you're supposed to**  
24 **operate it, then you'd need to start it, but if it's**  
25 **already running when you need to operate it, then you**

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1 **just continue operating it.**  
 2 Q. So you -- you're interpreting operating --  
 3 so you're operating an engine, it is your opinion  
 4 that operating the engine means combusting fuel.  
 5 You're -- the engine is operating to provide torque.  
 6 **MR. LIVEDALEN:** Objection, form, compound.  
 7 **THE WITNESS:** Yeah, I mean, combusting fuel  
 8 is -- is one of the requirements, just to compare it  
 9 to if you're just motoring the engine without  
 10 supplying it fuel, even though the engine might be  
 11 moving, I wouldn't consider that operating the engine  
 12 because it's not -- not supplying torque.  
 13 **MR. TURNER:** Okay, so -- all right, can we  
 14 go off the record for a minute?  
 15 **MR. LIVEDALEN:** Sure.  
 16 - - -  
 17 (Discussion off the record)  
 18 - - -  
 19 **BY MR. TURNER:**  
 20 Q. All right, so Mr. Hannemann, I'm just going  
 21 back through -- let's see. So again, Mr. Hannemann,  
 22 do these claims require -- actually require starting  
 23 the engine?  
 24 **MR. LIVEDALEN:** Objection, form.  
 25 **A. If it were not running, then yes, it would**

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1 **require starting the engine.**  
 2 Q. So if the -- so if the engine was running,  
 3 okay, strike that. So Mr. Hannemann, what is -- what  
 4 is your opinion if the engine was running?  
 5 **MR. LIVEDALEN:** Objection, form.  
 6 **A. I mean, if the engine were already running,**  
 7 **then it would -- I mean, it would fit into the -- the**  
 8 **claim construction and -- and it would be operated to**  
 9 **efficiently produce torque above the setpoint.**  
 10 Q. Okay. All right, so Mr. Hannemann, can you  
 11 turn to paragraph 189 please?  
 12 **A. Okay.**  
 13 Q. So now, this is a paragraph at the end of  
 14 the same section of your declaration, but now if you  
 15 could read the third sentence here starting with  
 16 "Neither" into the record please?  
 17 **A. "Neither Ford nor Dr. Stein have provided**  
 18 **any evidence of any teaching or suggestion of a**  
 19 **system that evaluates the amount of instantaneous**  
 20 **torque required to propel or operate the vehicle and**  
 21 **uses that evaluation to determine when to start and**  
 22 **operate the engine."**  
 23 Q. So based on your statement here -- sorry,  
 24 strike that. So Mr. Hannemann, is it your opinion  
 25 that the references need to teach both starting and

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1 operating the engine within these limitations?  
 2 **MR. LIVEDALEN:** Objection, form.  
 3 **A. Well, they may not be always the same time.**  
 4 **You may enter this mode from a condition where the**  
 5 **engine's not running or operating and you may enter**  
 6 **this mode from a condition where the engine is**  
 7 **operating, so it really depends on how you're**  
 8 **entering a particular mode.**  
 9 Q. Okay. Does this claim require entering the  
 10 mode?  
 11 **MR. LIVEDALEN:** Objection, form.  
 12 **BY MR. TURNER:**  
 13 Q. Again, sorry, this is -- by this claim, I'm  
 14 referring back to the claim limitation from paragraph  
 15 162.  
 16 **A. I'd probably have to look at the claim in**  
 17 **the context of the entire patent to be able to answer**  
 18 **that question.**  
 19 Q. Okay. Maybe it will be helpful if we  
 20 looked at the patent. We marked another patent as  
 21 Exhibit 4. Can you give Exhibit 4 to the witness  
 22 please? Or sorry -- not -- Exhibit 2. Pardon me.  
 23 Exhibit 2. All right, Mr. Hannemann, do you  
 24 recognize Exhibit 2?  
 25 **A. Yes, I do.**

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1 Q. Okay, this -- this is patent number  
 2 8,214,097. It's the challenged patent. We also  
 3 refer to it as the '097 patent or '097 patent. Can  
 4 you please turn to the end of the patent to the  
 5 claims, specifically claim number 1 that starts at  
 6 column 56? So here's the full claim 1, and I'd like  
 7 to -- if you could take a look at the limitations  
 8 that start at the top of column 57? All right, so  
 9 the first -- first limitation that's -- could you --  
 10 could you read the first limitation starting with  
 11 "Operating"?  
 12 **A. Yeah, "Operating said internal combustion**  
 13 **engine to provide torque to the hybrid vehicle when**  
 14 **the torque required to operate the hybrid vehicle is**  
 15 **between a setpoint, SP, and a maximum torque output,**  
 16 **MTO, of the engine wherein the engine is operable to**  
 17 **efficiently produce torque above SP and wherein SP is**  
 18 **substantially less than MTO."**  
 19 Q. So this is -- is this the limitation, the  
 20 same one that's reproduced in paragraph 162 of your  
 21 declaration?  
 22 **A. Yes.**  
 23 Q. Okay. So now, the next limitation, could  
 24 you read the next limitation please?  
 25 **A. "Operating both the at least one electric**

1 motor and the engine to provide torque to the hybrid  
2 vehicle when the torque required to operate the  
3 hybrid vehicle is more than MTO."

4 Q. All right, and then the following  
5 limitation, the last limitation please.

6 A. "And operating the at least one electric  
7 motor to provide torque to the hybrid vehicle when  
8 the torque required to operate the hybrid vehicle is  
9 less than SP."

10 Q. Okay. So now, do you see the words start  
11 or stop the engine in any of these limitations that  
12 you just read?

13 A. No.

14 Q. Okay. Is it your opinion that the engine  
15 starts and stops -- that these -- any of these  
16 limitations require starting and stopping the engine?

17 MR. LIVEDALEN: Objection, vague.

18 BY MR. TURNER:

19 Q. Sorry. Let me rephrase that. Strike that.  
20 Okay, Mr. Hannemann, is it your opinion that any of  
21 these three limitations, these three clauses that we  
22 just read -- that you just read require starting or  
23 stopping the engine?

24 MR. LIVEDALEN: Objection, form, asked and  
25 answered.

1 A. Sure. "Operating said at least one  
2 electric motor to provide additional torque when the  
3 amount of torque provided by said engine is less than  
4 the amount of torque required to operate the vehicle,  
5 and employing said controller to control the engine  
6 such that a rate of increase of output torque of the  
7 engine is limited to less than said inherent maximum  
8 rate of increase of output torque, and wherein said  
9 step of controlling the engine such that the rate of  
10 increase of output torque of the engine is limited is  
11 performed such that combustion of fuel within the  
12 engine occurs at a substantially stoichiometric ratio  
13 and comprising the further steps of" --

14 Q. Thank you, that's -- so for these  
15 limitations, is it your opinion that these -- these  
16 two steps must happen at the same time?

17 MR. LIVEDALEN: Objection, form.

18 BY MR. TURNER:

19 Q. Mr. Hannemann, let me rephrase that I  
20 guess. Is it your opinion that a prior art reference  
21 must teach using the electric motor to provide  
22 additional torque when the rate of increase of engine  
23 output torque is limited, they must happen at the  
24 same time, we must -- it must teach using the motor  
25 to supplement when the rate of increase of engine

1 A. Yeah, I'll say it depends upon if the  
2 engine is already operating or not when any of these  
3 conditions are met.

4 Q. Now, each one of these conditions, do these  
5 correspond to modes within? Is that your  
6 understanding?

7 A. Well, the patent discusses modes  
8 definitely, and this claim does not specifically tie  
9 to a given mode, so yeah, I think they relate to  
10 modes, but it's not real specific. It doesn't  
11 specify, you know, particular mode.

12 Q. Okay. So in the last limitation, operating  
13 the motor to provide the torque, paraphrasing there,  
14 what -- what is the engine doing when the motor is  
15 providing the torque? Is there any requirements on  
16 what the engine is doing?

17 MR. LIVEDALEN: Objection, form.

18 A. It would depend upon your mode, the mode  
19 you're in.

20 Q. Okay, Mr. Hannemann, let's go back to  
21 column 56. Also within claim 1, this is still within  
22 the '097 patent. So the two limitations at the  
23 bottom of column 57, could you read these into the  
24 record starting with, "Operating said at least one  
25 electric motor"?

1 output torque is limited?

2 MR. LIVEDALEN: Same objection.

3 A. Yeah, I guess I'd need to know what -- what  
4 prior art teaching you're referring to.

5 Q. Any -- any prior art. I mean, is it your  
6 opinion that these two limitations are linked, that  
7 they must happen at the same time?

8 MR. LIVEDALEN: Same objection.

9 A. Well, so I guess there's a technical and a  
10 legal answer, and I think that the -- the word "and"  
11 would link those two together.

12 Q. So Mr. Hannemann, so let's say -- so the  
13 first limitation, operating said at least one  
14 electric motor to provide additional torque when the  
15 amount of torque -- when the amount of torque  
16 provided by said engine is less than the amount of  
17 torque required to operate the vehicle, so that's the  
18 first limitation. Now, the second limitation,  
19 employing said controller to control the engine such  
20 that a rate of increase of output torque of the  
21 engine is limited, is it your opinion that those two  
22 limitations must happen at the same time to meet this  
23 claim?

24 MR. LIVEDALEN: Objection, form, asked and  
25 answered.

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