

Page 1

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
3)
4)
5 GOOGLE LLC,) Video-recorded
6) deposition of:
7 Petitioner,)
8) JOHN ARTHUR PALMER,
9 vs.) PH.D.
10)
11 ECOFACTOR, INC.,)
12) IPR2022-00473
13)
14 Patent Owner.)
15) Patent No. 8,751,186
16)
17)
18)
19)
20)
21)
22)
23)
24)
25)

January 6, 2023 * 11:00 a.m. MST

ALL PARTIES APPEARING REMOTELY VIA ZOOM

Location of deponent: 30 North Cutler Drive,
Unit 404
North Salt Lake, Utah 841021

Reporter: Kelly Fine-Jensen, RPR
Videographer: Ken Miller

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1 I N D E X
2 JOHN ARTHUR PALMER, PH.D.: PAGE
3 Examination by Ms. Laughton 4
4
5 E X H I B I T S
6 NO. DESCRIPTION PAGE
7 Exhibit 1001 Patent No. 8,751,186 B2,
8 June 10, 2014, Steinberg
9 (previously marked)
10 Exhibit 1004 Patent No. 2004/0117330 A1,
11 June 17, 2004, Ehlers
12 (previously marked)
13 Exhibit 1005 Patent No. US 6,868,293 B1,
14 March 15, 2005, Schurr
15 (previously marked)
16 Exhibit 2009 Declaration of John A. Palmer
17 (previously marked)
18
19
20
21
22
23
24
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Page 2

1 A P P E A R A N C E S
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1 P R O C E E D I N G S
2
3 THE VIDEOGRAPHER: The time is 1:00 p.m.
4 Mountain Time.
5 Today's date is January the 6th, 2023.
6 This begins the remote video-conferenced
7 deposition of Dr. John Palmer, taken in the matter of
8 Google LLC versus EcoFactor, Incorporated.
9 My name is Ken Miller. I'm your remote
10 videographer today. The court reporter today is
11 Kelly Fine-Jensen. We are representing Esquire
12 Deposition Solutions.
13 As a housekeeping note, if you're not
14 speaking, please mute your audio. And, of course,
15 remember to unmute when you are ready to speak.
16 Will counsel present please identify
17 themselves and state whom you represent, starting
18 with the taking attorney.
19 MS. LAUGHTON: This is Elizabeth Laughton,
20 from the law firm of Smith Baluch, LLC, representing
21 the petitioner, Google.
22 MR. LINK: This is Jonathan Link, from the
23 law firm of Russ August & Kabat, on behalf of the
24 patent owner, EcoFactor, Inc.
25 THE VIDEOGRAPHER: The court reporter will



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1 now swear in the witness.
2 THE REPORTER: Mr. Palmer, can I have you
3 raise your right-hand, please.
4
5 JOHN ARTHUR PALMER,
6 called as a witness, being first duly sworn,
7 was examined and testified as follows:
8
9 EXAMINATION
10 BY MS. LAUGHTON:
11 Q. All right. Good morning, Dr. Palmer.
12 Just for the record, I just want to note
13 that it is, in fact, 11:00 a.m. Mountain Time; is
14 that correct?
15 A. That is correct.
16 Q. Okay. Awesome.
17 And also for the record, this is a
18 deposition in IPR2022-00473. And this is a remote
19 deposition that is being conducted via Zoom.
20 Dr. Palmer, can you please state your name
21 for the record.
22 A. I am John Arthur Palmer.
23 Q. And you've been deposed before; is that
24 correct?
25 A. I have.

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1 Q. About how many times have you been deposed
2 before?
3 A. Between 80 and 90.
4 Q. So, you're familiar with the rules of
5 deposition generally; is that fair?
6 A. That is fair.
7 Q. Is there any reason that you can't testify
8 accurately today?
9 A. No.
10 Q. Do you have any medical or any other
11 issues that would interfere today with your
12 testimony?
13 A. No.
14 Q. Do you have any documents with you here
15 today?
16 A. Only what you posted in the chat.
17 Q. Okay. And just for the record, what
18 Dr. Palmer is referring to, that I posted in the
19 chat, are Exhibit 1001, Exhibit 2009, Exhibit 1004,
20 and Exhibit 1005, which have already been premarked
21 in this proceeding.
22 And, so, just to confirm, are those the
23 only documents that you have with you at this time?
24 A. The only ones I have open.
25 Q. Okay. Great.

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1 And just to let you know, if at any point
2 in time you need to refer to these documents in my
3 questioning, please feel free to do so.
4 And if you feel that you need any other
5 documents in order to answer my questions, please
6 just let me know as well.
7 A. Fair enough.
8 Q. Okay. Great.
9 Have you prepared for today's deposition?
10 A. Yes.
11 Q. What did you do to prepare?
12 A. I reread my report and had a meeting with
13 counsel.
14 Q. And did you meet with Mr. Link?
15 A. I did.
16 Q. And about how long did you meet to prepare
17 with Mr. Link?
18 A. The phone call was maybe 45 minutes long.
19 Q. And could I ask you to please look at --
20 well, actually, wait. Let me just back up a second.
21 Is there anything else that you did to
22 prepare?
23 A. I glanced through Mr. Shah's declaration
24 as well. Didn't dig in very deep. But, I did look
25 at it. Of course, you know, the original preparation

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1 of my declaration was all preparatory to this chat as
2 well. But, I'm assuming you're talking about
3 subsequent to the filing of the report?
4 Q. That's correct.
5 Can I please take you to -- can I please
6 ask you to take a look at Exhibit 2009, which is
7 entitled the Declaration of John A, Palmer Ph.D.
8 Do you see that?
9 A. I do.
10 Q. Are you the John A. Palmer Ph.D. listed
11 here?
12 A. I am.
13 Q. And this is your declaration?
14 A. It is.
15 Q. And did you sign this declaration under
16 oath?
17 A. I did.
18 Q. Did you read this declaration prior to
19 signing it?
20 A. Yes.
21 Q. Okay. And this declaration relates to
22 U.S. Patent number 8,751,186; is that correct?
23 A. Yes.
24 Q. And you refer to this patent in your
25 declaration as the '186 patent.



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1 Is that something that we can do today
2 here as well?
3 A. Of course.
4 Q. And, so, just to confirm, after you signed
5 the final version of this declaration, about how many
6 hours, total, do you think you spent preparing for
7 today's deposition?
8 A. Between three and four.
9 Q. And during the course of that preparation,
10 did you review the '186 patent again?
11 A. I did not.
12 Q. Okay. Would you state that you're
13 generally familiar with the '186 patent and how it
14 works?
15 A. Yes.
16 Q. Did you review the Ehlers '330 reference
17 in preparation for today's deposition?
18 A. Not specifically, no.
19 Q. Would you say that you're generally
20 familiar with that reference?
21 A. I am.
22 Q. And did you review the Schurr reference,
23 S-C-H-U-R-R reference, in preparation for today's
24 deposition?
25 A. Not specifically, no.

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1 Q. Would you say that you're generally
2 familiar with that reference?
3 A. I am.
4 Q. Do you have an understanding about the
5 relevant time frame for determining obviousness in
6 this case?
7 A. I do.
8 Q. And what is that understanding?
9 A. The patent claims priority to September of
10 2007. So, 2007 would be the relevant time frame.
11 Q. And is it okay with you if I refer to the
12 time frame before September 17th, 2007 as the
13 relevant time frame?
14 A. That would be fine.
15 Q. Okay. And, so, you see that you have
16 Exhibit 1001, which is the '186 patent in front of
17 you.
18 And please feel free to refer to that at
19 any point if you need to.
20 Are you generally familiar with the claims
21 of the '186 patent?
22 A. I am generally familiar with the claims of
23 the '186 patent.
24 Q. In your opinion, do the claims of the '186
25 patent cover systems and/or methods that are used in

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1 commercial structures?
2 A. They can be used in commercial structures.
3 Q. And what about in large-scale structures?
4 MR. LINK: Objection. Beyond the scope of
5 his report.
6 THE WITNESS: I -- I could see the
7 potential for application in large-scale structures.
8 But, the -- the claims of the -- or the specification
9 for the patent, '186 patent, does not seem to make
10 that a major focus of the -- of the invention.
11 Q. (By Ms. Laughton) If there were a system
12 or a method that is used in a large-scale structure,
13 but it otherwise met or practiced the limitations of
14 the claims of the '186 patent, would that in and of
15 itself preclude it from falling within the claims of
16 the '186 patent in your opinion?
17 MR. LINK: Objection. Beyond the scope of
18 his report.
19 THE WITNESS: Ask me that question again
20 if you would, please.
21 Q. (By Ms. Laughton) Sure. So, if there
22 were a system or a method that was used in a
23 large-scale structure and that system or method
24 otherwise practiced all of the elements of the claims
25 of the '186 patent, would the fact that it was used

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1 in a large-scale structure alone keep it from
2 satisfying the claims of the '186 patent in your
3 opinion?
4 MR. LINK: Objection. Beyond the scope of
5 his report.
6 THE WITNESS: I would say not necessarily.
7 Q. (By Ms. Laughton) Could a system which
8 controls power consumers, such as elevators,
9 escalators, lighting, or other equipment, meet the
10 claims of the '186 patent in your opinion?
11 A. That's, I -- I guess I would say, an
12 incomplete hypothetical. In theory you could add
13 additional control features to the -- to the scope of
14 the '186 patent. But, it certainly wouldn't
15 necessarily -- I mean, it's just an incomplete
16 hypothetical. It would take a lot more information
17 than what you've just laid out.
18 Q. Sure. Let me ask a different question
19 then.
20 So, if there were a system or a method
21 that controlled power consumers, such as elevators,
22 escalators, lighting, and other equipment, but it
23 otherwise satisfied the claims of the '186 patent,
24 would the fact that it had those other components and
25 features keep it from meeting the claims of the '186



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1 patent in your opinion?
2 A. Not necessarily.
3 Q. Okay. And the claims of the '186 patent
4 recite a server computer; is that correct?
5 A. Yes.
6 Q. Okay. And if you could please turn to
7 Figure 2 of the '186 patent.
8 Just let me know when you have that in
9 front of you.
10 A. I'm there.
11 Q. Looking at Figure 2 of the '186 patent, in
12 your opinion is server 106a an example of the server
13 that is referred to in the claims of the '186 patent?
14 A. Yes. In this particular embodiment, that
15 would appear to be the case.
16 Q. And same question for server 106b, would
17 that also be a server that's an example of a server
18 that's recited in the claims in the '186 patent?
19 A. I would assume so. I can reference the
20 specification -- relevant portion of the
21 specification if you'd like me to answer with a
22 little more specificity. But, it does appear that --
23 for this embodiment, that that's the intent of the
24 depiction.
25 Q. What is a demand reduction service

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1 provider?
2 A. A demand reduction service provider?
3 Q. Yes. And if you need to, that language is
4 referenced in the '186 patent. If you need to take a
5 look at that, that's referenced at column 7, lines 30
6 to 39.
7 A. Thank you.
8 Q. Would you like me to re-ask my question?
9 A. Yes, please.
10 Q. Sure. So, having taken a look at the '186
11 patent at column 7, lines 30 to 39, what is a demand
12 reduction service provider?
13 A. A demand reduction service provider is
14 also sometimes referred to as a demand aggregator.
15 But, the -- it's an entity that interacts with
16 customers and interacts with the utility such that
17 the utility makes a request or requires a reduction
18 in electricity demand that is communicated to the
19 demand reduction service provider. And that demand
20 reduction service provider implements that reduction
21 by interfacing with their customers.
22 Q. And looking back at Figure 2 of the '186
23 patent, what is a demand reduction service server?
24 A. I can look at the specific wording in the
25 specification on that. Okay. The -- looking in

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1 column 7, the description in paragraph two doesn't
2 expressly define that as I'm reading it.
3 But, it would -- based on context, it's
4 pretty clear that it's a server that is a -- that's
5 probably owned and operated by the demand reduction
6 service provider or owned by a utility that is
7 performing the same functions that would be doing
8 the -- the necessary analysis of communications in
9 order to implement a demand reduction.
10 Q. Were there demand reduction service
11 providers in the relevant time frame?
12 A. I am not personally familiar with a -- any
13 particular demand reduction service providers per se.
14 But, I certainly know that demand reduction was a --
15 was a practice that was being implemented. And it
16 would not be a surprise to me if there were, in fact,
17 demand reduction service providers in that time
18 frame. But, I can't name one off the top of my head.
19 Q. If you could please turn to Figures 6A and
20 6B of the '186 patent.
21 A. Okay.
22 Q. And just for your reference, if you need
23 to take a look at it, the relevant text describing
24 those figures, some of that starts at column 8, line
25 31.

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1 A. Thank you.
2 Q. And, so, taking a look at Figures 6A and
3 6B, in these figures the HVAC system is off; is that
4 correct?
5 A. That is correct.
6 Q. So, these figures depict changes in inside
7 temperature over time when the HVAC system is off; is
8 that correct?
9 A. That is correct.
10 Q. Okay. And if you could please take a look
11 at the '186 patent starting at column 8, line 63.
12 And if you just want to go ahead and read
13 from 8, 63 to column 9, line 9 before I ask my next
14 question. Just let me know when you're done with
15 that.
16 A. Okay. I'm finished reading it.
17 Q. Okay. Great.
18 Do you see here that the '186 patent
19 states that the server logs temperature readings, as
20 an example, once per minute?
21 A. Yes.
22 Q. And do you see here that it also states
23 that that data can be used to calculate what it
24 refers to as an effective thermal mass for a
25 structure?



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1 A. Yes.
2 Q. Do you agree that some of those
3 temperature readings that it refers to will be logged
4 when the system is off?
5 A. Yes.
6 Q. How long, in your opinion, would it take
7 the '186 patent systems to gather sufficient
8 temperature data to be able to predict at any given
9 time on any given day the rate at which inside
10 temperature should change for given inside and
11 outside temperatures?
12 A. That's going to depend on a number of
13 things.
14 Q. In general, about how long do you think it
15 would take such data to be gathered? And feel free
16 to give a range if you would like.
17 A. Well, I expect that it depends on the --
18 the implementation and in particular the learning
19 algorithms that would be involved. And the precision
20 that would be desired. As most learning algorithms
21 are implemented, they -- the longer the learning
22 process, the more precision that one can develop.
23 And, so, there's -- the nature of your
24 question is overbroad and I'm not able to give a
25 particular answer because there's too many factors

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1 that are outside of -- of -- of my knowledge.
2 Q. Do the claims of the '186 patent require
3 any particular level of precision or any particular
4 learning algorithm?
5 A. They do not.
6 Q. Does the '186 patent describe how to
7 achieve any particular level of precision or does it
8 describe any particular learning algorithm?
9 MR. LINK: Objection. Compound.
10 Q. (By Ms. Laughton) I'll just ask those
11 sequentially and get rid of that objection.
12 Does the '186 patent describe any
13 particular level of precision that needs to be
14 achieved?
15 A. Not specifically, no.
16 Q. Does it describe how to achieve any
17 particular level of precision?
18 A. Not specifically, no.
19 Q. Does it describe any particular learning
20 algorithms?
21 A. Not explicitly.
22 Q. Okay. And you see there in that section
23 that we just referenced that the '186 patent says
24 that -- the '186 patent states that the system can
25 predict at any given time on any given date a rate at

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1 which inside temperature should change for given
2 inside and outside temperatures.
3 Do you see that?
4 A. Yes.
5 Q. Does the '186 patent describe specifically
6 how that prediction is performed?
7 A. Not precisely. But, it does give general
8 information about that.
9 Q. What kind of general information does it
10 give?
11 A. It discusses what factors are considered.
12 It discusses the -- the overall approach to the -- to
13 the problem.
14 Q. Does it discuss specifically how to use
15 those factors to arrive at the prediction?
16 A. Not specifically.
17 Q. Does the '186 patent specify any algorithm
18 for that prediction?
19 A. That's certainly contained within the --
20 you know, for example, Figure 11 talks about it.
21 Figure 12 talks about it. Figure 13 talks about it.
22 And then, you know, of course, the supporting text
23 for those would also include some of that
24 information.
25 Q. Can you point me to the algorithms that it

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1 specifies specifically?
2 A. Well, for example, in Figure 11 it says
3 to, you know, collect the outside climate data and
4 input the duty cycle data and input the prior inside
5 temperature data, input the building/user profile,
6 input the current inside temperature, and calculate
7 the thermal mass index, which would be -- as the
8 supporting material emphasizes, that would include
9 the calculation of -- I'm sorry. Which -- which
10 parameter were we talking about? A predicted rate of
11 change?
12 Q. Correct.
13 A. Yes. So, that would be included in the
14 thermal mass index calculation as discussed in the
15 body of the specification.
16 Q. So, I see here what you've pointed me to
17 is a description of the various inputs that can be
18 used in the calculation. And then here, at what's
19 labeled Box 1112, it says, "Calculate Thermal Mass
20 Index."
21 Does it specify how to calculate that
22 thermal mass index?
23 A. Not specifically, no.
24 Q. And, so, are there any other algorithms,
25 in your opinion, that the '186 describes for



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