

1 Dr. M. Shahbakhti

2 UNITED STATES PATENT AND TRADEMARK OFFICE

3 BEFORE THE PATENT TRIAL AND APPEAL BOARD

4 -----x
BAYERISCHE MOTOREN WERKE AKTIENGESELLSCHAFT & BMW OF
NORTH AMERICA, LLC,

5 Petitioner, Case No. IPR2020-01299

6 vs. Patent No. 8,630-761

7 PAICE LLC & THE ABELL FOUNDATION, INC.,

8 Patent Owner.
9 -----x

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16 REMOTE VIDEOTAPED DEPOSITION OF

17 DR. MAHDI SHAHBAKHTI

18 New York, New York

19 Thursday, June 17, 2021

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21
22
23 Reported by:

24 THOMAS A. FERNICOLA, RPR

25 JOB NO. 195008

1 Dr. M. Shahbakhti Page 2
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4
5 Thursday, June 17, 2021
6 9:00 a.m.
7
8
9 REMOTE VIDEOTAPED DEPOSITION of DR. MAHDI
10 SHAHBAKHTI, held before Thomas A. Fernicola, a
11 Registered Professional Reporter and Notary Public of
12 the State of New York.
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1 Dr. M. Shahbakhti Page 4
2 THE VIDEOGRAPHER: Good morning,
3 Counselors. My name is Rodolfo Duran.
4 I am the legal videographer in
5 association with TSG Reporting, Inc.
6 Due to the severity of the
7 COVID-19 pandemic and following the
8 practice of social distancing, I will
9 not be in the same room as the witness.
10 Instead, I will be recording this
11 videotaped deposition remotely.
12 The reporter, Tom Fernicola, also
13 will not be in the same room and will
14 swear the witness remotely.
15 Do all parties stipulate to the
16 validity of this video recording and
17 remote swearing, and that it will be
18 admissible in the courtroom following
19 Rule 30 of the Federal Rules of Civil
20 Procedures and the state's rules where
21 this case is pending?
22 MR. BITTMAN: Yes, agreed for
23 Petitioner.
24 MR. LIVEDALEN: Agreed for Patent
25 Owners.

1 Dr. M. Shahbakhti Page 3
2 A P P E A R A N C E S
3 (All Attendees Appearing Via Videoconference and/or
4 Telephonically):
5
6 ON BEHALF OF PETITIONER:
7 BY: SCOTT BITTMAN, ESQ.
8 CROWELL & MORING
9 1001 Pennsylvania Avenue NW
10 Washington, DC 20004
11
12
13 ON BEHALF OF PATENT OWNER and THE WITNESS:
14 BY: BRIAN LIVEDALEN, ESQ.
15 FISH & RICHARDSON
16 1000 Maine Avenue, SW
17 Washington, DC 20004
18
19
20
21
22 ALSO PRESENT:
23 RODOLFO DURAN, Videographer.
24
25

1 Dr. M. Shahbakhti Page 5
2 THE VIDEOGRAPHER: This is the
3 start of Media Labeled No. 1 of the
4 remote Video Recorded Deposition of Dr.
5 Mahdi Shahbakhti, in the matter of
6 Bayerische Motoren Werke
7 Aktiengesellschaft and BMW of North
8 America, LLC, versus Paice, et al.
9 Today is June 17, 2021. The time
10 is 9:06 a.m. Mountain Daylight Time, and
11 we're on the record.
12 Will counsel please introduce
13 yourselves.
14 MR. BITTMAN: This is Scott
15 Bittman for Crowell & Moring for
16 Petitioner BMW.
17 MR. LIVEDALEN: Brian Livedalen
18 from Fish & Richardson representing
19 Patent Owners.
20 THE VIDEOGRAPHER: Will the court
21 reporter please swear in or affirm the
22 witness.
23
24
25

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1 Dr. M. Shahbakhti
2 DR. MAHDI SHAHBAKHTI,
3 called as a witness, having been duly sworn by a
4 Notary Public, was examined and testified as
5 follows:
6 BY THE REPORTER:
7 Q Please state your full name and
8 address for the record.
9 A Mahdi Shahbakhti.
10 BY MR. BITTMAN:
11 Q Good morning, Dr. Shahbakhti.
12 A Good morning.
13 MR. BITTMAN: Just because I think
14 this was missed in the opening remarks
15 for the record, this is for Case No.
16 IPR2020-1299, which is directed towards
17 Patent No. 8,630-761.
18 Q Is that consistent with your
19 understanding, Dr. Shahbakhti?
20 A Yes. I don't memorize all the
21 numbers so that's why I don't exactly if it
22 was. But I assume yes.
23 Q I know you've given your
24 deposition before, including remote ones in
25 a related matter to this case, but I just

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1 Dr. M. Shahbakhti
2 And you understand that you cannot
3 be in communication with anyone else while
4 you are testifying; is that right?
5 A Yes, I do.
6 Q If I ask you a question that you
7 do not understand, please let me know, and
8 I'll do my best to clarify.
9 Okay?
10 A Sure, I will do.
11 Q If you do not ask me to clarify, I
12 will assume that you understood the question
13 as asked. Okay?
14 A I will ask a question if I don't
15 understand the question.
16 Q If you need to take a break,
17 please let me know. I'll just ask that if
18 there's a question pending, please answer
19 the question, and then we will take a break.
20 Okay?
21 A Sure, will do.
22 Q Is there any reason why you cannot
23 give your full, truthful, and accurate
24 testimony today?
25 A No.

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1 Dr. M. Shahbakhti
2 want to go over some ground rules, just to
3 make sure we're on the same page, if that's
4 okay with you?
5 A Yes, go ahead, please.
6 Q Even though we are on a video
7 conference, you're giving testimony today as
8 if we were in court.
9 Do you understand that?
10 A Yes, I do.
11 Q Since we are remote, can you let
12 us know where you are?
13 A I'm in my office located in
14 Edmonton, Alberta, Canada.
15 Q Is anyone in the room with you?
16 A No.
17 Q Did you bring anything with you to
18 the deposition today?
19 A No, I did not bring anything.
20 Q Aside from a laptop or computer
21 that you're currently using, do you have any
22 other laptops, tablets, or phones with you?
23 A No. This is the only laptop in
24 this room.
25 Q Okay.

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1 Dr. M. Shahbakhti
2 Q Do you have a copy of your
3 declaration for this IPR with you?
4 A I do have.
5 Q Just for the record, can you
6 confirm just on the cover page which IPR it
7 is and what patent number it refers to, just
8 to make sure we're all looking at the same
9 document?
10 A Case IPR 2020-01299, Patent
11 8,630,761.
12 Q If we referred to '761 Patent
13 today, you'll understand that we'll be
14 referring to Patent No. 8,630,761; is that
15 okay?
16 A Sure.
17 Q Turning to page 93, can you
18 confirm that that's your signature?
19 A It is.
20 Q Did you write this declaration?
21 A Counsel prepared it for me, and I
22 go and I modified it, and then at the end it
23 is representing my own ideas.
24 Q Do you recall how much time you
25 spent working on your declaration?

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1 Dr. M. Shahbakhti

2 A Because this IPR and the previous

3 IPR, they were kind of related. Then when I

4 looked at the numbers for these two IPRs

5 together, I have to spend more than 100

6 hours to prepare these two declarations.

7 Q I believe you've actually prepared

8 three declarations; is that correct?

9 A The time I told you doesn't

10 include the third one.

11 Q I see, okay. Thank you.

12 You said more than -- I'm sorry,

13 go ahead. Were you finished answering?

14 A No, I just said "you're welcome."

15 Q Okay.

16 So you said more than 100, is that

17 the best estimate? Was it less than 150,

18 for example?

19 A It should be less than 150 hours

20 for the time I put together for preparing

21 the first declaration and this declaration

22 together, so between 100 and 150 hours.

23 Q What did you do to prepare for

24 today's deposition?

25 MR. LIVEDALEN: I have to counsel

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1 Dr. M. Shahbakhti

2 Q Are all the opinions in response

3 to BMW's petitions set forth in this

4 declaration?

5 A These are my opinions in regard to

6 the specific claims on the basis of the two

7 grounds and also in response to Dr. Davis'

8 declaration.

9 Q Have any of your opinions changed

10 since you submitted your declaration?

11 A No.

12 Q I just want to ask you a question

13 about some of your background.

14 I notice that you describe

15 qualifications and experience starting on

16 page 6.

17 Have you ever done any research on

18 increasing the efficiency of energy systems

19 through utilization of advanced control

20 techniques focusing on the transportation

21 and building sectors?

22 A So my research is related to the

23 topic that you just mentioned trying to

24 utilize the controls and understanding of

25 the systems and the design of the system in

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1 Dr. M. Shahbakhti

2 the witness not to reveal the substance

3 of any privileged communications.

4 A So I looked at my declaration that

5 goes through the parts to review my

6 opinions, and then look at the supporting

7 documents, to the extent that my time

8 allows, and I also met with the counsel in

9 preparation for this meeting.

10 Q You met with Counsel Brian

11 Livedalen, is that right, or was there

12 anyone else?

13 A No, it was only Brian Livedalen.

14 Q Did Counsel tell you or show you

15 anything that refreshed your recollection

16 about some of the subject matter in your

17 declaration?

18 A No, it was mainly related to the

19 declarations, the items that we have in the

20 declaration.

21 Q Have you spoken to anyone other

22 than counsel about either your declaration

23 preparation or preparing for today's

24 deposition?

25 A No.

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1 Dr. M. Shahbakhti

2 order to improve the efficiency of the

3 systems, and all systems could be vehicles

4 that are used in transportation systems, and

5 also can be a system that is being used in

6 the buildings.

7 Q Why is increasing the efficiency

8 of energy systems important?

9 A Because we are talking in the

10 context of the energy, so improving the

11 efficiency will save energy; and then that's

12 important because resources for energy is

13 limited, so then we are trying to save the

14 energy resources.

15 Q Has the increasing of efficiency

16 of systems been an industry need for a long

17 time?

18 A What specific industry are you

19 speaking about?

20 Q Let's go with automotive.

21 A The efficiency of improving the

22 efficiency of the vehicles has been the goal

23 in automotive industry, I would say, very

24 much from the beginning.

25 Q How about fuel economy?

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1 Dr. M. Shahbakhti
2 First of all, has that ever been
3 part of your research?
4 A So when we talk in the context of
5 vehicle to improve energy efficiency for the
6 vehicles that they run with IC engines, so
7 we are talking about saving fuel, and saving
8 fuel is directly linked to fuel economy.
9 Q And then has that been an industry
10 goal for a long time?
11 A When it comes to the industry,
12 there are different objectives that they
13 will pursue. For example, sometimes the
14 emission regulations become an important
15 factor, so then it will become many times
16 the compromise.
17 So for some cases, that industry
18 might try to suffice fuel economy in order
19 to make sure that it is meeting the emission
20 regulations.
21 But on a very high level and the
22 general picture, the industry will always
23 try to improve fuel economy while meeting
24 the constraints, the legislative constraints
25 that is imposed on the vehicles.

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1 Dr. M. Shahbakhti
2 companies in that patent.
3 Q Do you recall whether you've
4 reviewed any of the IPRs filed on Paice's
5 patents by any of those companies?
6 A I even didn't know the company
7 Paice before the IPR. I did not know even
8 the company, there is a company called Paice
9 exists.
10 Q I guess since you started work on
11 these various IPRs, have you reviewed any
12 IPRs filed by any of those companies?
13 A No. Currently, the only IPRs that
14 I'm working on are the ones with Paice. And
15 then I had -- one IPR got finished in 2020.
16 That was not for these companies, but then
17 when that one finished, I started with this
18 IPR. And this is the only IPRs I'm working
19 on now.
20 Q I understand.
21 I'm just wondering if you've,
22 during your review, considered the materials
23 that were submitted by any of those other
24 companies for other IPRs?
25 A No. none.

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1 Dr. M. Shahbakhti
2 Q When did you first become aware of
3 the Paice patents?
4 A Basically when the company door
5 [ph] who hired me for this case sent me
6 these patents.
7 Q In paragraph 10 of your
8 declaration, you refer to performing
9 controls-related research sponsored by
10 various automotive companies such as Ford
11 Motor Company, Toyota Motor Corporation,
12 General Motors Corporation, Hitachi, and
13 Denso.
14 Do you see that?
15 A Yes, I see that.
16 Q Have any of those companies ever
17 asked you to look at Paice's patents?
18 A No.
19 Q Are you aware of any of those
20 companies ever challenging Paice's patents?
21 A When I was reading basically the
22 documents for this, I noticed the name of
23 Ford was there, too. But before this IPR, I
24 didn't know about this patent. And I also
25 didn't know the involvement of any other

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1 Dr. M. Shahbakhti
2 Q Can you tell me what your
3 understanding is of what the obviousness
4 inquiry requires for combining prior art
5 references?
6 MR. LIVEDALEN: Objection to the
7 extent it calls for a legal conclusion.
8 Q Dr. Shahbakhti, I'll just try
9 again, because it's taking, I guess, a few
10 minutes while you've considered the
11 question. Maybe I should just start with
12 the question of -- okay, I'll let you
13 answer. Go ahead.
14 A If you look at my declaration
15 paragraphs 24 to 28, those explain what I
16 have considered for the obviousness.
17 Looking at the paragraph 27, it
18 includes a good summary for the factors that
19 I have considered to decide if the topic is
20 obvious or not. One of them is the scope
21 and the content of the prior art; No. 2, the
22 differences between the claims and the prior
23 art; 3, the level of orders built in the
24 pertaining art; and then 4, any objective
25 indicia of the nonobviousness. such as

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