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

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THE GILLETTE COMPANY, et al.,

Petitioners, Patent No. 8,125,155
IPR 2014-00477
IPR 2014-00479

-against-

ZOND, LLC, Patent No. 7,808,184
IPR 2014-00799
IPR 2014-00803

PATENT OWNER.
-----X

VIDEOTAPED DEPOSITION OF

JOHN BRAVMAN, Ph.D.

Lewisburg, Pennsylvania

Tuesday, April 21, 2015

Reported by:

Rebecca Schaumloffel, RPR, CLR

Job No: 92739

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April 21, 2015
9:04 a.m.

Videotaped deposition of JOHN BRAVMAN, Ph.D, held at the BEST WESTERN PLUS COUNTRY CUPBOARD INN, 7701 West Branch Highway, Lewisburg, Pennsylvania, before Rebecca Schaumloffel, a Registered Professional Reporter, Certified Livenote Reporter and Notary Public of the States of New York, New Jersey, and Pennsylvania.

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J. BRAVMAN
THE VIDEOGRAPHER: Good morning. We are now on the record. This is the start of tape label one of the videotaped deposition of John Bravman, ph.D in the matter the Gillette Company versus Zond, Inc. This deposition is being held at the Best Western, 7701 West Branch Highway, Lewisburg, Pennsylvania on April 21, 2015, at approximately 9:05 a.m.
My name is Larry Moskowitz from TSG Reporting Inc., and I am the legal video specialist. The reporter is Rebecca Schaumloffel, also in association with TSG Reporting. Will counsel please introduce themselves for the record.
MR. BARKER: Bruce Barker of Chao, Hadidi, Stark & Barker for Zond.
MR. MAIER: Cosmin Maier of Wilmer Hale for petitioner, the Gillette Company, and with me is my colleague Sam Ha.

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ALSO PRESENT:

Larry Moskowitz, Legal Videographer
David Tennant, Esq., White & Case
(Telephonically)

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J. BRAVMAN
JOHN BRAVMAN, called as a witness, having been first duly sworn by a Notary Public of the State of New York, was examined and testified as follows:
EXAMINATION BY
MR. BARKER:
Q. Good morning, Mr. Bravman.
A. Good morning.
Q. As you heard, I am Bruce Barker representing Zond, and I will be asking you some questions this morning about the Declaration you submitted in this case.
But let me start by saying that I noticed from your resume that you have been deposed on many occasions before; is that correct?
A. Yes.
Q. So you are familiar with the procedure; I can assume that?
A. Yes.
Q. Okay. Then let's just start with some aspects of your background. I noticed in paragraph 3 of your Declaration that you were once on the faculty at Stanford

1 J. BRAVMAN

2 University; is that correct?

3 A. Yes. Yes, that's right. I was
4 at Stanford on the faculty there.

5 Q. I assume you gave class lectures
6 or taught courses as a faculty member?

7 A. Yes.

8 Q. Just describe generally some of
9 the subject matter of those courses?

10 A. Yes. I taught undergraduates and
11 graduate students from introductory to
12 advanced level. I taught courses involving
13 basic material science. I taught courses on
14 structure of matter, the analysis of matter,
15 and the fabrication of integrated circuits.
16 That probably covers generally what I taught.

17 Q. Did you teach any courses in
18 control system theory?

19 A. Not a course I recall control
20 system, no.

21 Q. Did the topic of control systems
22 ever come up in any of the courses that you
23 did teach?

24 A. I probably, in certain contexts,
25 described control of systems that we either

1 J. BRAVMAN

2 both.

3 Q. Can you generally describe for me
4 some of the parameters that were controlled
5 by those control systems?

6 A. Voltages, currents, temporal
7 conditions, movement of physical objects via
8 motors and feedback controls. So positioning
9 systems. Three-dimensional positioning
10 systems. Gas flow. There also were sensors
11 and measurements involved with those as well.

12 Q. Now, you mentioned feedback
13 controllers. Did any of your control systems
14 use an open-loop approach?

15 MR. MAIER: Object to form.

16 A. I want to answer precisely. So
17 what exactly do you mean by open-loop?

18 Q. Well, are you familiar with the
19 term open-looped control system?

20 A. Sure, I have heard that phrase
21 many times.

22 Q. I am referring to that.

23 A. Okay. I can't answer -- I just
24 don't recall at this point. I mean these are
25 systems that we designed over a two-decade

1 J. BRAVMAN

2 used or designed and built. We built much
3 specialized equipment for materials analysis
4 which -- which included control systems of a
5 variety of types, but I don't think I taught
6 courses on that specifically.

7 Q. Okay. So to make sure I
8 understand, in connection with those courses,
9 you and your students designed certain
10 systems; that what I heard you say?

11 A. No, in my research group, we
12 designed and built specialized test equipment
13 of a variety of types. I was speaking to
14 your question about actual formal course
15 work.

16 Q. Okay. So those systems that you
17 designed, I assume they included electronic
18 controllers; is that correct?

19 A. Yes.

20 Q. Did you purchase those
21 controllers off the shelf, or did you design
22 them yourself?

23 A. We purchased components, and we
24 purchased systems as well. So depending on
25 what we were designing and building, we did

1 J. BRAVMAN

2 timeframe. But it's been awhile.

3 Q. Okay. But do you remember the
4 feedback control systems that you mentioned
5 earlier?

6 A. Some of our systems had feedback
7 control and some did not.

8 Q. Okay. So those that did not have
9 feedback control systems, it seems like
10 you're not prepared to characterize them as
11 open-loop. How would you characterize those
12 controllers?

13 MR. MAIER: Object to form.

14 Mischaracterizes the witness's
15 testimony.

16 A. Open-loop systems don't include
17 feedback, typically. But I was asking
18 specifically because I wanted to give a
19 specific answer. We had systems that were as
20 simple as observing through an observation
21 port and holding our finger on a button, and
22 we had other systems where, especially when
23 they were running for days on end, where we
24 had at least moderately sophisticated sensors
25 and feedback loops. They were generally in a

1 J. BRAVMAN

2 day programmed in Fortran and had computer
3 controllers. I lived through the period of
4 personal computers becoming available, and we
5 started programming personal computers with
6 pre-packaged software that made it a lot
7 easier than writing our own code. So by
8 working through the 80s, 90s and 2000
9 timeframe, I lived through that transition
10 from coding ourselves to being able to use
11 code that was written for us. National
12 Instruments was a big supplier of said code.
13 This made programming easier. So we were
14 involved in a spectrum of those activities.

15 Q. So the code you referred to, this
16 was code for a control system; is that
17 correct?

18 A. It was -- it could be often
19 adopted for many purposes. But it was for
20 control and measurement. Feedback, it was
21 for data collection, data analysis. I mean,
22 we built over the decades more and more
23 sophisticated systems.

24 Q. Now, in the equipment you
25 referred to, did any of it involve power

1 J. BRAVMAN

2 supply design?

3 A. We had power supplies in much of
4 our equipment of a variety of types because
5 of what we were doing. So, yes.

6 Q. Again, did you purchase those
7 power supplies off the shelf, or did you
8 custom design your own?

9 A. In some of our equipment, we just
10 designed our own and used -- and bought basic
11 components, transformers, capacitors,
12 resistors, switches inductors, other systems
13 as the requirements grew more stringent, and
14 depending on the availability of research
15 dollars, I know that we bought power
16 suppliers as well.

17 Q. Now, for the power supplies that
18 you designed yourself, did they include a
19 control system?

20 A. Yes. I mean, the power supply
21 for anything but the simplest application
22 needs to have some measure of control
23 starting with on/off switch and getting more
24 sophisticated depending on what was required.

25 Q. What would you call the component

1 J. BRAVMAN

2 that provides that control; can we use a
3 reference, would you call it controller?

4 MR. MAIER: Objection to form.

5 A. I have been using component to
6 more narrow -- a definition typically, a
7 component such as a transformer or capacitor
8 and assembly of components often would be
9 called a controller.

10 Q. Okay. Now, how about did you
11 offer any courses, this is in the Stanford
12 timeframe now, any course in plasma physics?

13 A. I offered courses that had
14 lectures on plasma physics but never a course
15 with that in the title.

16 Q. Now, I noticed in your
17 Declaration that you are currently, among
18 other things, a professor of electrical
19 engineering at Bucknell; is that correct?

20 A. Yes.

21 Q. Now, are you teaching courses
22 there?

23 A. I only give guest lectures. I
24 don't teach regular courses because of my
25 full-time position.

1 J. BRAVMAN

2 Q. How about in the past, have you
3 previously taught courses at Bucknell?

4 A. No, I moved here in 2010 to
5 become president of the University and was
6 simultaneously appointed professor of
7 electrical engineering.

8 Q. What were some of the topics of
9 the guest lectures you gave?

10 A. I taught about crystal structure,
11 materials analysis, history of the Internet,
12 Moore's Law, the acceleration of
13 microelectronic technology. I have also
14 talked about cardiac stents because I have
15 patents in those areas.

16 Q. Did you ever give any lectures on
17 control systems or control theory?

18 A. Here at Bucknell?

19 Q. Yes.

20 A. No.

21 Q. Now, at the end of your resume, I
22 noticed that sometime in 2013, you began
23 representing -- you worked as a testifying
24 witness in the Intel versus Zond patent
25 litigation; is that correct?

1 J. BRAVMAN
 2 A. Yes, I was retained for that
 3 position, yes.
 4 Q. So I assume that was Intel that
 5 retained you?
 6 A. Correct.
 7 Q. And you say here 2013. Do you
 8 know -- can you recall the month in which
 9 that began?
 10 A. No.
 11 Q. Now, did you sign a Retainer
 12 Agreement with Intel?
 13 MR. MAIER: Objection;
 14 relevance.
 15 A. I am sure I did.
 16 Q. Do you recall what the -- your
 17 rate was for that engagement?
 18 MR. MAIER: Objection;
 19 relevance.
 20 A. My standard rate is \$450 an hour.
 21 Q. You are speaking in the present
 22 tense. I am referring back to the time in
 23 2013 when you were retained.
 24 Are you saying it was the same
 25 rate then?

1 J. BRAVMAN
 2 MR. MAIER: Same objection.
 3 A. To the best of my memory, I have
 4 not increased my rates. My rates have been
 5 flat for many years.
 6 Q. Now, directly beneath that, I see
 7 you have also been retained by Gillette in
 8 this IPR; is that correct?
 9 A. That's correct.
 10 Q. And do you recall what month that
 11 you were retained by Gillette?
 12 A. It was this year. It was -- I
 13 think it was January but I don't recall.
 14 Q. Okay. So it may be -- let me
 15 give you your CV. I think there may be a
 16 mistake on that.
 17 Mr. Bravman, I am going to hand
 18 you a copy of your Declaration marked
 19 Gillette 1026 and IPR 2014-00477.
 20 MR. MAIER: I will correct for
 21 the record, it is Dr. Bravman. I
 22 think you have been calling him Mr.
 23 MR. BARKER: I will try to
 24 correct that.
 25 Q. But you respond to Mr. Bravman as

1 J. BRAVMAN
 2 well, assume?
 3 A. Yes, sir. People call me all
 4 sorts of things.
 5 Q. I will do my best. I am inviting
 6 your attention to page 11 of your resume
 7 attached to the back of this Declaration.
 8 A. I see it.
 9 Q. It says here -- this time span
 10 specified for your representation of Gillette
 11 is 2013 to present; is that correct?
 12 A. I see that there. That's
 13 definitely a typo. I would have to look at
 14 my -- I cut and pasted probably from the
 15 Intel case above.
 16 Q. Okay. So do you -- do you recall
 17 roughly when you did first begin representing
 18 Gillette in this matter?
 19 A. As I indicated, I believe it was
 20 in this year, calendar year 2015. But I
 21 would have to check when I signed the
 22 Declaration.
 23 Q. Now, have you been retained by
 24 any of the other petitioners in these IPRs?
 25 A. Well, I was with Intel, as you

1 J. BRAVMAN
 2 pointed out.
 3 Q. Any others?
 4 A. I know there are quite a few. I
 5 believe I signed on with TSMC, and before I
 6 did any work whatsoever, that that case, to
 7 my memory, was, I don't know if settled is
 8 the right phrase, but I knew I would not have
 9 any ongoing engagement so there was no
 10 billing in that case. And that was sometime
 11 in this calendar year as well, I believe.
 12 Q. Did you actually get to the point
 13 where you signed an engagement letter with
 14 them?
 15 A. I think I did. I think I recall
 16 writing to somebody, well, that's the
 17 shortest engagement I have had. Because,
 18 literally, within a day or three, from
 19 memory, it was a very short period of time, I
 20 was told that my involvement, at least, was
 21 over.
 22 Q. Other than Intel, Gillette, and
 23 TSMC, have you been retained by any other
 24 petitioners in the IPRs against Zond?
 25 A. You know, there is an issue with

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