

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

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AMERICAN NATIONAL MANUFACTURING INC.,

Petitioner,

v.

SLEEP NUMBER CORPORATION,
f/k/a SELECT COMFORT CORPORATION,

Patent Owner.

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Cases

IPR2019-00497 (Patent 8,769,747 B2)

IPR2019-00500 (Patent 9,737,154 B2)

DEPOSITION of DR. JOSHUA PHINNEY

September 24, 2019

New York, New York

Reported by:

Joseph Danyo V

Job no: 26065

TransPerfect Local Solutions

1 DEPOSITION of DR. JOSHUA PHINNEY, pursuant
 2 to Notice, held at the offices of Fox Rothschild,
 3 LLP, 101 Park Avenue, 17th Floor, New York, New
 4 York, on September 24, 2019, at 9:00 a.m., before
 5 Joseph Danyo V, a Shorthand Reporter and Notary
 6 Public for the State of New York.
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1 J. PHINNEY
 2 D R. J O S H U A P H I N N E Y,
 3 the Witness herein, having first been
 4 duly sworn by the Notary Public, was
 5 examined and testified as follows:
 6 MR. MOORE: Steve Moore for Sleep
 7 Number Corporation from Pillsbury
 8 Winthrop, and with me is Luke Toft from
 9 Fox Rothschild.
 10 MR. TUTTLE: Kevin Tuttle from the
 11 law firm of Spencer Fane LLP in Kansas
 12 City, Missouri, for petitioners, American
 13 National Manufacturing, and I'm here with
 14 my colleague, Kyle Elliott, of Spencer
 15 Fane in Kansas City, Missouri.
 16 EXAMINATION
 17 BY MR. MOORE:
 18 Q. Good morning, Dr. Phinney.
 19 A. Good morning.
 20 (Whereupon, Phinney Exhibit 1,
 21 declaration in support the party's review
 22 of U.S. Patent 9737154 was hereby marked
 23 for identification, as of this date.)
 24 Q. Dr. Phinney, have you seen this
 25 document before?

1 APPEARANCES:
 2
 3
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 BY: LUKE D. TOFT, ESQ.
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 * * *

1 J. PHINNEY
 2 A. Yes.
 3 Q. What is this document?
 4 A. This is my declaration in support of
 5 the party's review of U.S. Patent 9737154.
 6 Q. Did you prepare this document?
 7 A. Yes.
 8 Q. Just take a look at the introduction
 9 that begins on page 1 of this document.
 10 A. I'm there.
 11 Q. So you're here as an expert witness;
 12 are you not?
 13 A. Yes.
 14 Q. Paragraph 1 states you're a principal
 15 engineer at Exponent?
 16 A. Yes.
 17 Q. What is Exponent?
 18 A. Exponent is a scientific and
 19 engineering consulting firm. We have
 20 approximately a thousand employees, but we assist
 21 clients with different kinds of technical
 22 problems that they have.
 23 Q. What percentage of your work is
 24 legal?
 25 A. I'd say about 50 percent.

1 J. PHINNEY
 2 Q. 50?
 3 A. Yes.
 4 Q. And the other 50 percent is of what
 5 nature?
 6 A. It's engineering work, particularly
 7 helping clients understand the cause of failure
 8 of their products or assisting them with
 9 calculating things like electromagnetic.
 10 Q. What percentage of your current work
 11 is related to fluid dynamics?
 12 A. I'd say just this litigation, so
 13 right now maybe 10 percent.
 14 Q. Ten percent. About how many hours
 15 have you worked on this litigation?
 16 A. I'm going to guess it was about 250.
 17 Q. Was all that in 2019?
 18 A. No.
 19 Q. Which years did that work happen?
 20 A. I recall -- I was definitely working
 21 on this or the related district court matter one
 22 year ago, approximately, so October 2018.
 23 Q. Any other work that you're currently
 24 doing in pneumatic systems --
 25 A. No.

1 J. PHINNEY
 2 Q. Your work was related to the control
 3 of the pneumatic system?
 4 A. It involved a pneumatic system and a
 5 hydraulic system. The main working fluid for the
 6 actuators, which are these actuators around the
 7 experiment that would move the experiment for --
 8 the working fluids there was this mineral oil, so
 9 that was a hydraulic system, but it also included
 10 a pneumatic component, because one way I created
 11 a source of pressurized hydraulic fluid for the
 12 experiment was with a pneumatic control system
 13 and a pressurized volume of TRINYTE (phonetic).
 14 Q. Did that have any relation to traffic
 15 safety?
 16 A. That was not related to traffic
 17 safety.
 18 Q. Did it have any relation to trucking,
 19 generally?
 20 A. I wouldn't say that it had a general
 21 relationship to that, no.
 22 Q. Did it have any relation to
 23 biomedical devices?
 24 A. I'd say, no.
 25 Q. Or measurement of blood pressure?

1 J. PHINNEY
 2 Q. -- or hydraulics?
 3 A. No.
 4 Q. Looking at your qualifications on
 5 page 2 of this document, it says you worked on
 6 the Laser Interferometric Gravitational Wave
 7 Observatory.
 8 What specifically was your work
 9 related to in that experiment?
 10 A. So I had worked on the hydraulic
 11 power supply for the experiment in order to
 12 handle the outer stage isolation of the
 13 experiment, which was itself in a vacuum.
 14 Q. Outer stage isolation, could you
 15 explain that a little more?
 16 A. Yes. This is an experiment that is
 17 designed to be in an inertial frame of reference,
 18 and that means it needs to reject movements of
 19 the earth with respect to an inertial frame.
 20 So, for instance, seismic, the
 21 motions of the earth need to be detected, and if
 22 they go left, the experiment needs to push right
 23 to counteract them and sort of remain in what I'm
 24 calling this inertial frame of reference. One
 25 will just be, you might say truly stellar.

1 J. PHINNEY
 2 A. No.
 3 Q. Did it have any relation to
 4 inflatable beds?
 5 A. I would say for all of these where
 6 I'm answering, no, this is a-- it's not a
 7 scientific experiment, so it's a physics
 8 experiment, ultimately.
 9 So apart from the principles of the
 10 pneumatic and the hydraulic and fluid control
 11 systems, I don't think there is a relationship.
 12 Q. Thank you. Dr. Phinney, in paragraph
 13 11, you list a number of cases and legal matters
 14 in which you were involved. Is this a complete
 15 list of your engagements in the legal
 16 environment?
 17 A. No. I think this would be the cases
 18 in which I offered testimony at the time when I
 19 submitted this report.
 20 Q. Dr. Phinney, has a court ever found
 21 your testimony to be unreliable?
 22 A. I don't believe so.
 23 Q. Dr. Phinney, have you ever made a
 24 mistake in your analysis in your reports?
 25 A. In my analysis, I'm not aware of

1 J. PHINNEY
 2 that. You know, I have had typos, but I'm not
 3 aware of a mistake in any report.
 4 Q. Were any of these cases related to
 5 pneumatic systems?
 6 A. The -- number N there, the
 7 Westinghouse air brake case, that was related to
 8 air brakes for trains, which is a pneumatic
 9 system.
 10 Q. Would you say that that's related to
 11 transportation safety?
 12 A. Yes. I think that's a fair
 13 characterization, but that's --
 14 Q. Thank you.
 15 A. Not just that, but I think that's
 16 part of it that's related to.
 17 Q. Is it related to trucking?
 18 A. I give the same sort of answer that I
 19 gave previously. Not -- it's not really, apart
 20 from the principles of the operation in a
 21 pneumatic control system, for instance.
 22 Q. Is it related to measurement of blood
 23 pressure?
 24 A. Again, the same kind of answer, no,
 25 with that qualification.

1 J. PHINNEY
 2 Q. Inflatable beds?
 3 A. The same answer, no, with that
 4 qualification.
 5 Q. Dr. Phinney, how many patents are you
 6 an inventor of?
 7 A. I think the answer is two. It may be
 8 three. I don't see where I wrote that here.
 9 Q. Are any of your patents related to
 10 pneumatics?
 11 A. No.
 12 Q. Are any of them related to
 13 hydraulics?
 14 A. No.
 15 Q. Back to paragraph 5, when you were
 16 working on the LIGO experiment, were you employed
 17 by MIT?
 18 A. I think that's a fair way to say it.
 19 It's an assistantship, so you're paid through a
 20 laboratory, which in this case was a
 21 collaborative endeavor between Cal Tech, MIT,
 22 Stanford.
 23 Q. Were you a student at MIT at the
 24 time?
 25 A. Yes.

1 J. PHINNEY
 2 Q. Was this during your PhD?
 3 A. Yes. That's fair. It was after I
 4 got my master's, but before I got my PhD.
 5 Q. Dr. Phinney, what was your
 6 dissertation topic?
 7 A. It was-- for the PhD?
 8 Q. Um-hum.
 9 A. It related to power electronics.
 10 Q. So your work in the LIGO experiment
 11 didn't relate to your research at MIT for your
 12 PhD?
 13 A. That is correct. One thing, I'm
 14 sorry, if I can clarify, you asked what my PhD
 15 was about. My PhD also included some aspects of
 16 electric mechanical conversion.
 17 Q. Thank you. While you were working on
 18 the LIGO experiment, how much of your time was
 19 spent in your research at MIT versus how much of
 20 your time was spent working on the hydraulics and
 21 pneumatics of the LIGO experiment?
 22 A. It was all LIGO. For that time, I
 23 was working on that constantly, apart from taking
 24 classes.
 25 Q. What percentage of your time did your

1 J. PHINNEY
 2 classwork take?
 3 A. In the summer, it took no time, and
 4 during the school year, I'd say about 50 percent.
 5 Q. How long did you work on the LIGO
 6 experiment in terms of months?
 7 A. I think about 12 months.
 8 Q. Okay, so you would say out of that
 9 12 months, three quarters of it was 50 percent
 10 time, and the other quarter was a hundred
 11 percent; is that a reasonable estimate?
 12 MR. TUTTLE: Objection to form.
 13 A. That -- it's -- that seems
 14 reasonable, yes. It was for that time I spent a
 15 -- I'd say the majority of my time on LIGO.
 16 Q. Okay. Then, Dr. Phinney, is it your
 17 opinion that you have at least one year
 18 experience with hydraulics, fluid control and
 19 pneumatic air bed controllers?
 20 A. I think I have that or the
 21 equivalent, yes.
 22 Q. Didn't you just testify that it was
 23 substantially less than a year, and your only
 24 experience with pneumatics was the LIGO
 25 experiment?

1 J. PHINNEY
 2 A. I think the experience I had is, you
 3 know, I think is equivalent to that amount of
 4 experience.
 5 Q. Thank you. So starting at paragraph
 6 19 in your declaration, you have a number of
 7 claim terms that have been offered here for
 8 construction. Do you see those?
 9 A. Yes.
 10 Q. Do you know if the board adopted any
 11 of those?
 12 A. I don't believe the board did is my
 13 recollection.
 14 Q. Your opinions in your declaration are
 15 based on the claim constructions that you've
 16 offered here; are they not?
 17 A. I would say that they are, but that
 18 my opinions wouldn't change with other claim
 19 constructions that have been offered in this
 20 case.
 21 Q. Specifically, paragraph 20, the first
 22 sentence, doesn't it say that you've applied the
 23 constructions below?
 24 A. Yes.
 25 Q. That means the constructions in

1 J. PHINNEY
 2 MR. TUTTLE: Objection, form.
 3 A. Yes. I believe so.
 4 Q. Take a look at page 4. Under D1,
 5 first sentence, do you see where it says,
 6 "Mahoney is directed to a system and method for
 7 adjusting the pressure in an inflatable object
 8 such as an air bed"?
 9 Do you see that?
 10 A. Yes.
 11 Q. Is that how you characterized
 12 Mahoney?
 13 A. I can check.
 14 Q. Would you, please.
 15 A. I'll look at Exhibit 1, so, for
 16 instance, in my paragraph 70, I have a similar
 17 sentence, but I say that the '154 patent is
 18 directed to a method for adjusting air pressure
 19 within an air bed.
 20 Q. Thank you. Do you agree that the
 21 patent is directed to air beds and not generally
 22 inflatable objects?
 23 A. It seems to be what I'm saying here,
 24 that the '154 patent is directed to adjusting air
 25 pressure within an air bed.

1 J. PHINNEY
 2 paragraphs 21 through 26; does it not?
 3 A. Yes, but as I --
 4 Q. Thank you. Okay, let's take a look
 5 at -- I'm going to be handing you another
 6 document.
 7 (Whereupon, Phinney Exhibit 2,
 8 petition for interparty's review of patent
 9 9737154 was hereby marked for
 10 identification, as of this date.)
 11 Q. Dr. Phinney, have you seen this
 12 document before?
 13 A. Yes.
 14 Q. What is this document?
 15 A. This is the petition for interparty's
 16 review of patent 9737154.
 17 Q. Did you draft this document?
 18 A. No.
 19 Q. Were you involved in drafting this
 20 document?
 21 A. No.
 22 Q. Are you aware that this document
 23 cites Exhibit 1, your declaration?
 24 A. Yes. That's my understanding.
 25 Q. Do you agree with this document?

1 J. PHINNEY
 2 Q. Thank you. So let's go back to your
 3 background for just a moment. That will be back
 4 in Exhibit 1.
 5 Any of your time in your professional
 6 career other than this casework related to
 7 inflatable beds?
 8 MR. TUTTLE: Objection to form.
 9 A. I have experience related to
 10 different types of blowers and flow control
 11 systems that I think would be applicable to
 12 inflatable beds.
 13 Q. Have you worked with inflatable beds
 14 before?
 15 A. Without -- not working with
 16 inflatable beds, but I think related to, because
 17 it's a similar type of application.
 18 Q. What application is that?
 19 A. Related to CPAP systems, for
 20 instance.
 21 Q. Do the CPAP systems show up in your
 22 CV here somewhere?
 23 A. No. I don't believe I've testified
 24 about them.
 25 Q. What is your knowledge of CPAP

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