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# Transcript of William C. Messner, Ph.D., Volume 2

**Date:** December 12, 2019

**Case:** American National Manufacturing Inc. -v- Sleep Number Corporation, et al.  
(PTAB)

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WORLDWIDE COURT REPORTING & LITIGATION TECHNOLOGY

Transcript of William C. Messner, Ph.D., Volume 2  
Conducted on December 12, 2019

1 (307 to 310)

307	309
1 UNITED STATES PATENT AND TRADEMARK OFFICE 2 BEFORE THE PATENT TRIAL AND APPEAL BOARD 3 ----- 4 AMERICAN NATIONAL IPR2019-00497 5 MANUFACTURING INC., U.S. PATENT 8,769,747 6 Petitioner, 7 v. 8 SLEEP NUMBER CORPORATION IPR2019-00500 9 f/k/a SELECT COMFORT U.S. PATENT 9,737,154 10 CORPORATION, 11 Patent Owner. 12 ----- 13 VOLUME II VIDEOTAPED DEPOSITION OF 14 WILLIAM C. MESSNER, Ph.D. 15 MINNEAPOLIS, MINNESOTA 16 THURSDAY, DECEMBER 12, 2019 17 9:13 A.M. 18 19 20 JOB NO.: 275001 21 PAGES: 307 - 436 22 REPORTED BY: PATRICK J. MAHON, RMR, CRR	1 A P P E A R A N C E S 2 3 REPRESENTING THE PETITIONER: 4 Mr. Kyle L. Elliott 5 Attorney at Law 6 Mr. Kevin S. Tuttle 7 Attorney at Law 8 Spencer Fane LLP 9 1000 Walnut Street, Suite 1400 10 Kansas City, MO 64106-2140 11 kelliott@spencerfane.com 12 ktuttle@spencerfane.com 13 14 REPRESENTING THE PATENT OWNER: 15 Mr. Luke Toft 16 Attorney at Law 17 Fox Rothschild LLP 18 222 South Ninth Street, Suite 2000 19 Minneapolis, MN 55402 20 ltoft@foxrothschild.com 21 22 ALSO PRESENT: Jacob Arvold, Videographer
308	310
1 DEPOSITION OF WILLIAM C. MESSNER, Ph.D., 2 HELD AT THE OFFICES OF: 3 4 5 FOX ROTHSCHILD LLP 6 222 SOUTH NINTH STREET 7 MINNEAPOLIS, MINNESOTA 55402-3338 8 9 10 11 12 13 Pursuant to Notice, before Patrick J. 14 Mahon, Notary Public in and for the County of 15 Hennepin, State of Minnesota. 16 17 18 19 20 21 * * * * * 22	1 I N D E X 2 3 EXAMINATION: 4 BY MR. ELLIOTT - PAGES 314 and 419 5 BY MR. TOFT - PAGE 380 6 7 NUMBER/DESCRIPTION PAGE 8 Exhibit 16..... 406 9 email correspondence 10 ANMI00178036 - 178041 11 12 EXHIBITS REFERRED TO: 13 NUMBER/DESCRIPTION PAGE 14 Exhibit 1..... 386 15 Declaration of Dr. William 16 C. Messner In Support Of 17 Patent Owner's Response on 18 Patent '154 and CV 19 (170 pages) 20 21 22 (continued...)

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311	1 EXHIBITS REFERRED TO, continued: 2 3 EXHIBIT/DESCRIPTION PAGE 4 Exhibit 2..... 413 5 Declaration of Dr. William 6 C. Messner In Support Of 7 Patent Owner's Response on 8 Patent '747 and CV 9 (170 pages) 10 Exhibit 4..... 412 11 Patent 3,068,494 12 (3 pages) 13 Exhibit 7..... 339 14 Patent No.: US 8,769,747 B2, 15 Mahoney et al. 16 (16 pages) 17 Exhibit 8..... 339 18 Patent Number: 5,629,873, 19 Mittal et al. 20 (29 pages) 21 22 (continued...)	313	1 P R O C E E D I N G S 2 WHEREUPON, the following proceedings were 3 duly had: 4 THE VIDEOGRAPHER: Here begins disk number 5 1, Volume II, in the videotaped deposition of 6 Dr. William C. Messner in the matter of American 7 National Manufacturing Inc. versus Sleep Number 8 Corporation, before the Patent Trial and Appeal 9 Board, United States Patent and Trademark Office, 10 Case Nos. IPR2019-00497 and IPR2019-00500. 11 Today's date is December 12th, 2019. The 12 time on the video monitor is 9:13 a.m. 13 The videographer today is Jacob Arvold, 14 representing Planet Depos. 15 This video deposition is taking place at 16 222 South 9th Street, Suite 2000, Minneapolis, 17 Minnesota. 18 Will counsel voice identify themselves and 19 state whom they represent. 20 MR. ELLIOTT: Kyle Elliott with Spencer 21 Fane, representing American National, Petitioner. 22 And with me today also, and yesterday as well, is
312	1 EXHIBITS REFERRED TO, continued: 2 3 EXHIBIT/DESCRIPTION PAGE 4 Exhibit 9..... 382 5 Patent Number: 5,277,187, 6 Pillsbury 7 (23 pages) 8 Exhibit 10..... 424 9 Patent No.: US 9,737,154 B2, 10 Mahoney et al. 11 (20 pages) 12 Exhibit 11..... 384 13 Pub. No.: US 2007/0000559 A1, 14 Ebel 15 (10 pages) 16 17 18 19 20 21 22	314	1 Mr. Kevin Tuttle, also with Spencer Fane, 2 representing American National. 3 MR. TOFT: Luke Toft, representing Sleep 4 Number Corporation, with Fox Rothschild. 5 THE VIDEOGRAPHER: The court reporter 6 today is Patrick Mahon, representing Planet Depos. 7 And we may proceed. 8 WILLIAM C. MESSNER, Ph.D., 9 a witness in the above-entitled proceedings, after 10 having been first duly sworn on December 11, 2019, 11 deposed under oath as follows: 12 EXAMINATION 13 BY MR. ELLIOTT: 14 Q Okay. Good morning, Dr. Messner. How are 15 you? 16 <b>A Good morning. Fine. Thank you.</b> 17 Q Good. You understand you're still under 18 oath? 19 <b>A Yes, I do.</b> 20 Q Okay. And did you have any conversations 21 with counsel between our conclusion last night and 22 this morning?

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<p>315</p> <p>1 <b>A Nothing of substance regarding the</b> 2 <b>testimony.</b> 3 Q Nothing regarding the testimony? 4 <b>A Nothing, uh-huh.</b> 5 Q Okay. Any conversations with anyone else 6 regarding the testimony? 7 <b>A No.</b> 8 Q Okay. I'll try and kind of pick up 9 suddenly where we left off. And if we need to, I 10 can go back into some foundational stuff. 11 <b>A Sure. Uh-huh.</b> 12 Q So does error exist in every system? 13 <b>A Does air exist?</b> 14 MR. TOFT: Object to form. 15 BY MR. ELLIOTT: 16 Q Yeah, e-r-r-o-r? 17 <b>A Oh, error.</b> 18 Q Error. 19 <b>A Error. I'm sorry.</b> 20 MR. TOFT: Oh. 21 <b>A Got it.</b> 22 BY MR. ELLIOTT:</p>	<p>317</p> <p>1 -- sorry, measuring the temperature usually at one 2 location in a room. 3 Q And are the offsets used by the '154 and 4 '747 patents a way of compensating for error in 5 that system? 6 <b>A So when you refer to the offsets, are you</b> 7 <b>referring to the adjustment?</b> 8 Q Yeah, I think yesterday, definitionally, 9 we defined the offset as when you use the additive 10 slash subtractive -- 11 <b>A Right.</b> 12 Q -- adjustment factor; is that correct? 13 <b>A That's right.</b> 14 Q Okay. So is that offset used by the '154 15 and '747 patent a way of compensating for error in 16 that system? 17 <b>A Yes, it is.</b> 18 Q Okay. And are offsets used in other 19 systems to compensate for error? 20 <b>A Yes.</b> 21 Q Were they used in 2006 in other systems to 22 compensate for error?</p>
<p>316</p> <p>1 Q Yeah. I knew there would be something 2 foundational when you start off that lovely. 3 Sorry, let me start over again. 4 <b>A Yes.</b> 5 Q Does error, e-r-r-o-r, exist in almost 6 every system? 7 <b>A I mean, depends on what you mean by</b> 8 <b>"error." I mean, so to the extent that a</b> 9 <b>dimension or a value is not exactly the same as</b> 10 <b>some desired value, yeah, sure.</b> 11 Q And do you typically work as, you know, 12 engineers, problem solvers to try and compensate 13 for the error in the system? 14 <b>A Certainly. I mean, sometimes some error</b> 15 <b>is acceptable. I mean, when we think about</b> 16 <b>engineering drawings and the like, there's</b> 17 <b>tolerances. Same thing in, you know, temperatures</b> 18 <b>in a room, we allow for some small amount of</b> 19 <b>deviation from a desired temperature. And even</b> 20 <b>within, say, let's again think about temperature,</b> 21 <b>then the temperature in a room is not the same</b> 22 <b>everywhere. So you're only measuring the pressure</b></p>	<p>318</p> <p>1 <b>A Yes.</b> 2 Q And is Mittal one example of using offsets 3 for correction of error? 4 <b>A Yes.</b> 5 Q Now, you mentioned in your example of 6 temperature, you talked about deviation? 7 <b>A Yes.</b> 8 Q Could deviation be defined as a band? 9 <b>A So I would say it this way: Deviation</b> 10 <b>might fall within a band. I wouldn't say</b> 11 <b>deviation is a band.</b> 12 Q Okay. 13 <b>A I wouldn't use that term.</b> 14 Q Okay. So deviation would typically be 15 expressed in the context of error as a plus or 16 minus; is that a fair statement? 17 <b>A That's usually the way it's -- if it's a</b> 18 <b>single quantity, yes. I mean, if you're talking</b> 19 <b>about falling within a certain, say, position,</b> 20 <b>landing a probe on another planet, when we talk</b> 21 <b>about a landing ellipse, in that case it's not a</b> 22 <b>single number. They look at an acceptable range,</b></p>

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<p style="text-align: right;">319</p> <p><b>1 an acceptable area in which they can drop the...</b></p> <p>2 Q So the bands of Mittal, they give a</p> <p>3 pressure range; correct?</p> <p><b>4 A Yes.</b></p> <p>5 Q Okay. And do the '747 and '154 patents</p> <p>6 anywhere disclose a band or a range of pressures?</p> <p>7 MR. TOFT: Object to form.</p> <p><b>8 A I'm not sure. I'd like to take a moment</b></p> <p><b>9 to...</b></p> <p><b>10 BY MR. ELLIOTT:</b></p> <p>11 Q Let me direct you to Exhibit Number 7.</p> <p>12 That's the '747 patent.</p> <p><b>13 A Yes.</b></p> <p>14 Q You can look at that one.</p> <p><b>15 A Okay.</b></p> <p>16 Q You had indicated yesterday that the</p> <p>17 specifications are identical between the two; is</p> <p>18 that correct?</p> <p><b>19 A They are, except for some line numbers and</b></p> <p><b>20 column numbers, as you pointed out.</b></p> <p>21 Q Okay.</p> <p><b>22 A Yeah. Okay. Oh, you were directing me to</b></p>	<p style="text-align: right;">321</p> <p>1 would an absolute value defining around a target,</p> <p>2 would that be a range or a band?</p> <p>3 MR. TOFT: Object to form.</p> <p><b>4 A So when you say "an absolute value," you</b></p> <p><b>5 mean that a quantity minus another quantity falls</b></p> <p><b>6 within – the absolute value of the difference</b></p> <p><b>7 between two quantities is a number?</b></p> <p><b>8 BY MR. ELLIOTT:</b></p> <p>9 Q Well, let me introduce a different term.</p> <p><b>10 A Okay.</b></p> <p>11 Q Let's start with, I think, one that's a</p> <p>12 little easier to deal with and that's tolerances?</p> <p><b>13 A Yes.</b></p> <p>14 Q Okay. So tolerances are typically</p> <p>15 expressed as a plus or minus; correct?</p> <p><b>16 A Not necessarily.</b></p> <p>17 Q Okay.</p> <p><b>18 A So tolerances in drawings are often</b></p> <p><b>19 plus-minus, say, a number, but frequently they're</b></p> <p><b>20 plus something, minus another number, or even</b></p> <p><b>21 zero. So you have to be at least this big or no</b></p> <p><b>22 bigger than this (motioning). Again, it's for</b></p>
<p style="text-align: right;">320</p> <p><b>1 this. Did you want me to –</b></p> <p>2 Q Yeah. So the question I'm asking is, do</p> <p>3 the '747 and '154 patents anywhere disclose a</p> <p>4 range or a band of pressures?</p> <p>5 MR. TOFT: Same objection.</p> <p>6 MR. ELLIOTT: And I'm sorry, the objection</p> <p>7 was?</p> <p>8 MR. TOFT: Compound.</p> <p>9 MR. ELLIOTT: Okay.</p> <p><b>10 A I don't recall them using the specific</b></p> <p><b>11 word "band." The closest one would potentially...</b></p> <p><b>12 Let me restate that.</b></p> <p><b>13 So the '747 and the '154 specifications</b></p> <p><b>14 and the claims, as I recall, refer to</b></p> <p><b>15 "substantially equal." So substantially equal</b></p> <p><b>16 indicates not exactly equal potentially. So in</b></p> <p><b>17 that sense, there may be a band, but nothing is</b></p> <p><b>18 specified in terms of what's the lower bound and</b></p> <p><b>19 what's the upper bound.</b></p> <p><b>20 BY MR. ELLIOTT:</b></p> <p>21 Q If I do an absolute value of something to</p> <p>22 define a range or a band, would that be -- well,</p>	<p style="text-align: right;">322</p> <p>1 making sure that things fit within each other.</p> <p>2 Q All right. Okay. Fair. Could I use an</p> <p>3 absolute value to express that type of tolerance?</p> <p><b>4 A You mean the plus-minus kind? I'd say</b></p> <p><b>5 potentially. It depends on how it's worded, yes.</b></p> <p>6 Q Okay. And if I'm using the plus-minus as</p> <p>7 a tolerance, would that be considered a range?</p> <p><b>8 A I think one would be able to translate the</b></p> <p><b>9 plus-minus into a range.</b></p> <p>10 Q And would that range also then be a band,</p> <p>11 in terms of temperature, for example?</p> <p><b>12 A Could be. I'd have to look at the exact</b></p> <p><b>13 circumstances.</b></p> <p>14 Q Okay.</p> <p><b>15 A Yeah, yeah.</b></p> <p>16 Q So let me direct your attention to the</p> <p>17 '747 patent. The relevant portion really starts</p> <p>18 on column 7, line 51, and carries over to column</p> <p>19 8. But the specific language that I think will be</p> <p>20 of interest here is in column 8, lines 1 and 2.</p> <p>21 Take a moment to take a look at that, if you</p> <p>22 would, please, Dr. Messner.</p>

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