

1 UNITED STATES INTERNATIONAL TRADE COMMISSION
2 WASHINGTON, D.C.

3 ----- :
4 IN THE MATTER OF :
5 :
6 CERTAIN VAPORIZER DEVICES, :
7 CARTRIDGES USED THEREWITH, :
8 AND COMPONENTS THEREOF, :
9 ----- :

10
11 CONFIDENTIAL BUSINESS INFORMATION -
12 SUBJECT TO PROTECTIVE ORDER
13 OUTSIDE ATTORNEYS' EYES ONLY
14

15
16 VIDEOTAPED STENOGRAPHIC DEPOSITION OF
17 JOSEPH C. MCALEXANDER, III
18 ATLANTA, GEORGIA
19 FRIDAY, MARCH 1, 2024
20

21
22
23 REPORTED BY: TANYA L. VERHOVEN-PAGE,
24 CCR-B-1790

25 FILE NO. J10933954

1 March 1, 2024

2 9:04 a.m.

3
4 Videotaped stenographic deposition
5 of JOSEPH C. MCALEXANDER, III, held at the
6 offices of Hunton, Andrews, Kurth, LLP,
7 600 Peachtree Street, Atlanta, Georgia before
8 Tanya L. Verhoven-Page, Certified Court
9 Reporter and Notary Public of the State of
10 Georgia.
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- - -

I N D E X

WITNESS: JOSEPH C. MCALEXANDER, III

Examination

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BY MR. MCKEE

9

BY MS. DEKA

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BY MR. MCKEE

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Deposition
Exhibit

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1 ATLANTA, GEORGIA; FRIDAY, MARCH 1, 2024

2 9:08 A.M.

3
4 P R O C E E D I N G S

5
6 THE VIDEOGRAPHER: We are now on
7 the record. Today's date is March 1st,
8 2024. The time is 9:08 a.m.

9 This is the video deposition of
10 Joseph McAlexander, taken in the matter
11 of Certain Vaporizer Devices, Cartridges
12 used Therewith and Components Thereof.

13 My name is Josh Minyard, your
14 videographer. The court reporter is
15 Tanya Page, and we represent Esquire
16 Deposition Solutions.

17 Counsel, please introduce
18 yourselves for the record, after which
19 the witness will be sworn in.

20 MR. MCKEE: John McKee with Quinn
21 Emanuel on behalf of the Complainants,
22 and with me today is Courtney Kasuboski
23 and Joshua Parzivand, also of Quinn
24 Emanuel.

25 MS. CAPPELLA: Anne Cappella with

1 Weil, Gotshal & Manges, representing the
2 Respondents and the witness.

3 MS. DEKA: And this is Monisha Deka
4 from the U.S. International Trade
5 Commission.

6
7 Thereupon --

8 JOSEPH C. MCALEXANDER, III,
9 called as a witness, having been first duly sworn,
10 was examined and testified as follows:

11
12 EXAMINATION

13 BY MR. MCKEE:

14 Q Good morning, Mr. McAlexander.

15 A Good morning.

16 (McAlexander Deposition Exhibit
17 Nos. 1 through 4 were marked for the
18 record.)

19 BY MR. MCKEE:

20 Q I have pre-marked a few exhibits for the
21 deposition today. I'm just going to read what they
22 are into the record.

23 You should have in front of you, marked
24 as Exhibit 1, the Expert Report of Joseph McAlexander
25 Regarding Invalidity of U.S. Patent Nos. RE49,114 and

1 10,130,123.

2 The -- as Exhibit 2, the Rebuttal Expert
3 Report of Joseph C. McAlexander, III, Regarding U.S.
4 Patent Nos. RE49,114 and 10,130,123. As Exhibit 3,
5 U.S. Patent No. RE49,114, and as Exhibit 4, U.S.
6 Patent No. 10,130,123.

7 Do you have those in front of you?

8 A Yes, I do.

9 Q And are Exhibits 3 and 4 the patents that
10 you offered opinions about in connection with your
11 expert reports marked as Exhibits 1 and 2?

12 A Yes, they are.

13 Q Mr. McAlexander, have you been deposed
14 before?

15 A Yes.

16 Q Well, since we have a lot to cover today,
17 I'm just going to jump straight into it.

18 Does that sound okay?

19 A Certainly, sure. Go ahead.

20 Q So I'd like to start with your -- your
21 CV, which I believe is in an appendix at the back of
22 your opening expert report, Exhibit 1, Attachment A.

23 Mr. McAlexander, is Attachment A to your
24 opening expert report an accurate copy of your CV?

25 A As of the time of fourth quarter '23,

1 yes.

2 Q And just to cut straight to it, have you
3 ever worked at a vaporizer company?

4 A No, I have not.

5 Q Have you ever worked on an electronic
6 nicotine delivery system or ENDS product?

7 A I have worked on a number of litigation
8 cases that involved those products, yes.

9 Q Other than in your work as a litigation
10 consultant, have you ever worked on an ENDS product?

11 A No, I have not.

12 Q Have you ever designed an ENDS product or
13 a vaporizer?

14 A Components within it, but not the actual
15 vaporizer product, no.

16 Q Now, if I look at your expert -- your CV
17 here, in the first sentence you say you've been
18 recognized as an inventor on 31 U.S. and a number of
19 foreign patents; is that right?

20 A That is correct.

21 Q And do any of those U.S. or foreign
22 patents relate to vaporizers or ENDS technology?

23 A They relate to components that are within
24 those technologies, yes.

25 Q Do any of those patents or foreign

1 patents relate to vaporizer or ENDS devices?

2 A I cannot differentiate that from the
3 first question you just asked me. It's the same
4 thing.

5 I -- I've designed and worked with
6 components that are part of that technology.

7 Q Do any of your patents or foreign patents
8 relate -- describe a vaporizer or ENDS device?

9 A No. Some of the patents describe a
10 pressure sensor device that would be used in a vapor
11 device.

12 Q Now does your CV reflect the technical
13 expertise that -- that you have developed over the
14 course of your career?

15 A I believe so, yes.

16 Q And so you say you have 48 years of
17 experience in microcircuit and semiconductor
18 technologies, right?

19 A Correct, probably closer to 50 years now.

20 Q And you have skills in the areas of
21 circuit design and analysis, device fabrication and
22 assembly, testing, marketing, control system design
23 analysis, manufacturing operations and respective
24 areas of quality, reliability and defect/failure
25 analysis, right?

1 A Correct.

2 Q But other than your work as a litigation
3 consulting -- strike that. Otherwise, your work --
4 strike that, as well.

5 Other than your work as a litigation
6 consultant, you have not done any work on vaporizer
7 devices or ENDS products, right?

8 MS. CAPPELLA: Objection. Form.

9 THE WITNESS: Not on those
10 particular products, no.

11 BY MR. MCKEE:

12 Q And so when you say you have designed and
13 managed development testing and evaluation of
14 devices, including DRAMs, SRAMs, CCDs and SRs, none
15 of that is for vaporizer or ENDS devices, right?

16 MS. CAPPELLA: Objection. Form.

17 THE WITNESS: Each one of those
18 technologies refer to specific types of
19 components that would be used in
20 vaporize -- vaping devices.

21 BY MR. MCKEE:

22 Q And those are fields in which you believe
23 you are an expert, correct?

24 A Yes.

25 Q You have technical expertise with DRAMs,

1 SRAMs and CCDs, right?

2 A I do, yes.

3 Q You also have technical expertise with
4 RFID technology, right?

5 A Correct.

6 Q But you do not have any technical
7 expertise with vaporizer and ENDS technology,
8 correct?

9 MS. CAPPELLA: Objection form.

10 THE WITNESS: I think that question
11 has been asked twice already; but the
12 answer is I have technology experience
13 and expertise in components that go into
14 and part of those type of devices.

15 BY MR. MCKEE:

16 Q Are you a technical expert in fluid
17 mechanics?

18 A It depends on what aspect of it. When it
19 comes to aspects within fluids, yes. If you're
20 asking do I have a degree in fluids mechanics, the
21 answer is no.

22 Q What does aspects within fluids mean?

23 A Well, air flow is a fluid type of
24 Dynamics. Water flow. Dynamics with regard to
25 the -- the vibration and acoustic technology that is

1 a part of or passes through fluid-type materials.

2 That experience, yes, I do have experience.

3 Q And which of the -- which of the areas of
4 your work that you describe in your CV contribute to
5 the expertise that you believe you have in air flow
6 as a type of fluid dynamics?

7 A MEMS technology is one.

8 Q I'm sorry. I didn't catch that.

9 A MEMS, micro-electronic type devices,
10 MEMS, M-E-M-S.

11 Q I understand that MEMS sensors can be
12 used for a variety of things.

13 What specific expertise do you have with
14 MEMS sensors that, in your opinion, makes you an
15 expert in air flow?

16 A The design of MEMS sensors.

17 Q Is there a difference between a MEMS air
18 flow sensor and a MEMS pressure sensor?

19 MS. CAPPELLA: Objection to form.

20 THE WITNESS: The difference is in
21 the technology in which it is used. You
22 can actually used the same type of MEMS
23 sensor in multiple different facets.

24 BY MR. MCKEE:

25 Q So a MEMS air flow sensor could be used

1 to sense pressure?

2 A Could, yes.

3 Q And in that context, you would consider
4 it to be a pressure sensor, right?

5 A In that context, yes.

6 Q All right. Now, if you turn to Page 3 of
7 your CV, you list your litigation experience.

8 A I disagree.

9 Q Sorry. What do you list starting on Page
10 3?

11 A That's my -- that's my -- that's my
12 experience in terms of -- of engineer. That's my
13 employment type experience.

14 Q Which of these employment experiences
15 relate to vaporizer or ENDS technology?

16 MS. CAPPELLA: Objection to form.

17 THE WITNESS: Well, the experience
18 that I have had since 1988 with my own
19 company, McAlexander Sound, is -- during
20 that period of time is when I developed
21 the techniques and the patent -- patented
22 technology with regard to MEMS
23 technology. So that's one.

24 I've also been involved in acoustic
25 design, which is also looking at pressure

1 sensors that are based upon a vibration
2 or acoustic glaze.

3 Also, with regard to my work as a
4 managing director in the private limited
5 company in Singapore, I have worked with
6 manufacturers and assembling houses that
7 actually assemble components that are
8 used in the manufacturing and technology
9 of MEMS sensors.

10 The -- the work that I did on Page
11 4 with Cochran Consulting as the managing
12 consultant for that particular company,
13 that was in the design and productization
14 of underwater dive computers, which
15 included pressure transducers.

16 At EPI Technology, I was
17 responsible for the testing and the
18 physical and chemical analyses of various
19 types of components, including
20 transducers, which would be pressure
21 sensors.

22 And at Texas Instruments,
23 Incorporated, which shows my experience
24 on Pages 5 and 6 that was in the design
25 of different types of sensing and logic

1 and buffer type components that go into
2 vaping type devices.

3 Overall, that's, generally
4 speaking, my experience related to the
5 question you asked.

6 BY MR. MCKEE:

7 Q Do you have any experience modeling air
8 flow as a fluid within a device?

9 A Modeling air flow. In some of the
10 technology that I dealt with in terms of MEMS
11 sensors, yes.

12 Q MEMS is a -- it's a sensor over which air
13 flow might pass, right?

14 MS. CAPPELLA: Objection. Form.

15 THE WITNESS: Correct
16 characterization, yes.

17 BY MR. MCKEE:

18 Q Have you ever designed any of the air
19 flow pathways in a device that results in that air
20 flow being delivered to the MEMS sensors that you're
21 talking about?

22 A Not in the -- not in the air flow or
23 channel area that would -- in terms of the air path,
24 no. My development work was with regard to the
25 sensor itself.

1 Q Now, in -- in vaporizer devices like the
2 ones we're going to be talking about today, there is
3 also air flow out of the device, right?

4 MS. CAPPELLA: Objection. Form.

5 THE WITNESS: There can be.

6 BY MR. MCKEE:

7 Q [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

11 Q Do you have any experience in aerosol
12 generation or vapor formation in electronic device?

13 A No, I do not.

14 Q Do you have any experience with the
15 design of wicking elements in electronic devices?

16 A Not directly with the wicking devices,
17 no.

18 Q And then in terms of your litigation
19 consulting experience, other than the -- other than
20 the Altria, R.J. Reynolds cases that you have
21 included in your CV, do any of the other litigation
22 matters that you've worked on relate to e-cigarettes?

23 A E-cigarettes?

24 Q E-cigarettes.

25 MS. CAPPELLA: I'll just caution

1 the witness not to reveal any
2 confidential information that is not
3 pertinent to this particular
4 investigation.

5 THE WITNESS: Thank you. I have a
6 number of cases other than -- other than
7 the R.J.R., Altria, PMI type cases that
8 do relate to pressure sensors, but I'll
9 quote one in particular answering to your
10 question is on Page 29, at the top of the
11 page, VPR versus Jupiter. And that's a
12 patent related to flow sensors with
13 regard to vaporizers.

14 BY MR. MCKEE:

15 Q What is the earliest filed matter that
16 you have identified here on your CV that relates to
17 e-cigarette technology?

18 A Earliest filed matter?

19 Q Actually, let me ask that again.

20 What is the earliest filed matter that
21 you have listed here on your CV that relates to
22 e-cigarettes?

23 A I'll answer your question specifically,
24 narrowly, because I have a number of cases related to
25 pressure sensors and other things that predate these;

1 but as it directly relates to e-cigarettes or e-type
2 vaping devices, I would say probably on Page 24, the
3 R.J.R. versus PMI, which I have -- my retention was
4 as early as 2020. Now, when the case was filed I do
5 not know. I do not recall.

6 Q You have this ordered roughly
7 chronologically, anyway, right?

8 A Roughly, yes.

9 Q All right. So let's -- let's turn if we
10 can -- actually, I don't know that we need to go
11 anywhere quite yet.

12 If you'll pull up Exhibits 3 and 4, the
13 '114, and the '123 patents, and just have them in
14 front of you.

15 The '113 patent -- the '123 patent --
16 excuse me -- is titled Vaporizer Devices with Blow
17 Discrimination, right?

18 A That's correct.

19 Q It's directed to vaporizer devices?

20 MS. CAPPELLA: Objection to form.

21 THE WITNESS: It is.

22 BY MR. MCKEE:

23 Q I didn't hear the answer. I'm sorry.

24 A It is.

25 Q And the '114 patent is titled Electronic

1 Cigarette with Liquid Reservoir, right?

2 A Correct.

3 Q It's also directed to vaporizer devices?

4 MS. CAPPELLA: Objection to form.

5 BY MR. MCKEE:

6 Q Right?

7 A Correct.

8 Q E-cigarettes are vaporizer devices,
9 right?

10 A Yes.

11 Q [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

20 Q And the purposes of an e-cigarette is to
21 be a substitute for a traditional combustible
22 cigarette which burns tobacco to produce nicotine,
23 correct?

24 MS. CAPPELLA: Objection to form.

25 THE WITNESS: Say the question

1 again, please.

2 BY MR. MCKEE:

3 Q Sure. The purpose of an e-cigarette is
4 to be a substitute for a traditional combustible
5 cigarette which burns tobacco to produce nicotine,
6 correct?

7 MS. CAPPELLA: Objection to form.

8 THE WITNESS: Generally speaking,
9 I'd say yes.

10 BY MR. MCKEE:

11 Q Otherwise, if an e-cigarette did not
12 provide a similar experience and act as a substitute
13 to a traditional cigarette, then cigarette smokers
14 would simply choose to continue smoking cigarettes,
15 right?

16 MS. CAPPELLA: Objection to form.
17 And scope.

18 THE WITNESS: I'd say that depends
19 on the personality. You're making a
20 general statement to that effect.

21 BY MR. MCKEE:

22 Q The idea, anyway, with e-cigarettes is to
23 capture cigarette smokers and provide them an
24 alternative other than cigarettes, right?

25 MS. CAPPELLA: Objection to form

1 and scope.

2 THE WITNESS: That might be one
3 aspect of it. It may also be used to
4 prevent people from ever getting involved
5 with the standard cigarettes in the first
6 place. Sometimes it's just due to social
7 pressure.

8 BY MR. MCKEE:

9 Q And one of the reasons that you would
10 want to do that is that the combustion of cigarettes
11 has carcinogenic side-effects, right?

12 MS. CAPPELLA: Objection to form
13 and scope.

14 THE WITNESS: It can, yes.

15 BY MR. MCKEE:

16 Q E-cigarettes don't have that same
17 downside, right?

18 MS. CAPPELLA: Same objection.

19 THE WITNESS: Not as I know of.

20 BY MR. MCKEE:

21 Q Because they're not burning anything,
22 right?

23 A Well, you're not getting any carcinogenic
24 effects because of burning, I agree with that, unless
25 you have one that's out of control.

1 Q Are you familiar with the phrase, heat
2 not burn?

3 MS. CAPPELLA: Objection to form.

4 THE WITNESS: Yes.

5 BY MR. MCKEE:

6 Q What is a heat-not-burn product?

7 MS. CAPPELLA: Objection to form.

8 THE WITNESS: It means it vaporizes
9 but it does not create the side-effects
10 that are -- that come from a change in
11 the chemical composition of the material.

12 BY MR. MCKEE:

13 Q And unlike an e-cigarette, a
14 heat-not-burn product uses a solid fuel source,
15 right?

16 MS. CAPPELLA: Objection to form.
17 Scope.

18 THE WITNESS: It can, yes.

19 BY MR. MCKEE:

20 Q It does not use liquid, right?

21 A Most don't, but it can.

22 Q But it does still generate a vapor?

23 A From a solid form?

24 Q Yeah.

25 A Yes.

1 Q Now, you understand that, in an
2 e-cigarette, in order to simulate the experience of
3 smoking a traditional cigarette, there are a number
4 of factors that have to be balanced, right?

5 MS. CAPPELLA: Objection to form.

6 THE WITNESS: I'm not sure what you
7 mean by a number of factors. There are
8 factors that have to be considered, yes.

9 BY MR. MCKEE:

10 Q And those include considerations that
11 relate to air flow, right?

12 MS. CAPPELLA: Objection to form.

13 THE WITNESS: That's one aspect,
14 yes.

15 BY MR. MCKEE:

16 Q These products are designed so that the
17 throat hit in an e-cigarette is similar to the throat
18 hit from a traditional cigarette, right?

19 MS. CAPPELLA: Objection to form.

20 Mischaracterizes.

21 THE WITNESS: Generally, that is
22 part of the design considerations.

23 BY MR. MCKEE:

24 Q And these products are designed so that
25 the draw resistance in an e-cigarette is similar to

1 the draw resistance in a traditional cigarette,
2 right?

3 MS. CAPPELLA: Objection to form.

4 THE WITNESS: That's one of the
5 goals, yes.

6 BY MR. MCKEE:

7 Q And the throat hit and the draw
8 resistance are both, at least in part, a function of
9 the air flow through the device, right?

10 MS. CAPPELLA: Objection to form.

11 THE WITNESS: In part. It's more a
12 function of the puff itself, but air flow
13 does contribute to it, yes.

14 BY MR. MCKEE:

15 Q If you could open your opening report and
16 turn it to Page 6, Paragraph 22. Are you there?

17 A Yes.

18 Q And in Paragraph 22, you provide your
19 definition for a person of ordinary skill in the art
20 for the '123 and '114 patents, right?

21 A I don't provide a definition in Paragraph
22 23.

23 Q In Paragraph 22?

24 A Twenty-two. Thank you. Excuse me.

25 Q No problem.

1 A Yes, sir, that's correct.

2 Q Do you meet this definition?

3 A Yes.

4 Q As of when?

5 A I would say as of the 1980s, 1990s.

6 Q In the subsequent paragraphs, 23 and 24,
7 however, you do not say that you're a person of skill
8 in the art as of the claimed priority dates for the
9 '123 and '114 patents, right?

10 A Paragraph 24, I said: Based on my
11 education, training and experience, it is my opinion
12 that I can accurately represent the views of a POSITA
13 as of these priority dates.

14 Q That you can represent the views of a
15 POSITA, not that you are a POSITA as of those
16 priority dates, right?

17 A As of --

18 MS. CAPPELLA: Object to form.

19 THE WITNESS: Excuse me.

20 As of that priority date, I was
21 more than the experience of a POSITA, but
22 I at least met that.

23 BY MR. MCKEE:

24 Q You've been an expert in a number of
25 cases involving patents, right?

1 A Yes.

2 Q And in many of those cases, you provide
3 paragraphs similar to this one where you define a
4 person of skill in the art and then indicate whether
5 you are or are not a person of skill with respect to
6 those patents, right?

7 A Certainly.

8 Q And in those other cases when you
9 qualified as a person of skill in the art, you said
10 that you did, right?

11 MS. CAPPELLA: Objection to form.

12 THE WITNESS: I believe in each
13 case I -- when I represent in any matter
14 as an expert, I at least meet the
15 qualifications of a person of ordinary
16 skill in the art.

17 MR. MCKEE: I'm going to mark an
18 exhibit once we find it.

19 (McAlexander Deposition Exhibit No.
20 5 was marked for the record.)

21 BY MR. MCKEE:

22 Q I've marked as Exhibit 5 the Declaration
23 of Joseph C. McAlexander, III, in Support of Patent
24 Owners Preliminary Response to Corrected Petition for
25 IPR of U.S. Patent No. 9646182 in IPR2022-01375.

1 Do you see that?

2 A I see that.

3 Q This is your declaration, right?

4 A Yes, that's correct.

5 Q And if you could turn to Paragraph 2, you
6 say, I am a technical expert in the subject matter
7 areas relevant to the topics you're opining on in
8 this declaration, right?

9 A Yes, that's what it says.

10 Q You say you're a technical expert in the
11 design and testing of RFID systems, right?

12 A Yes.

13 Q Okay. You don't say in the Person of
14 Skill in the Art section of your expert report that
15 you're a technical expert in the design and testing
16 of vaporizer systems, right?

17 A If you're asking in the expert report on
18 Exhibit 1?

19 Q In your --

20 A You didn't qualify.

21 Q In your expert reports in this case.
22 Exhibit 1, you don't say in the entire Person of
23 Skill in the Art section that you are a technical
24 expert in the design and testing of vaporizer or ENDS
25 systems, right?

1 MS. CAPPELLA: Objection. Form.

2 THE WITNESS: I didn't use your
3 words. I used the words that I did in my
4 particular expert report that indicated
5 what the person of skill in the art was
6 and that, my training and experience, I
7 could accurately represent.

8 So yes, I'm a technical expert in
9 that area for that particular period of
10 time.

11 BY MR. MCKEE:

12 Q And with RFID systems like the ones that
13 you're opining on in Exhibit 5, you also believe that
14 you are more than a person of skill in the art,
15 right?

16 A For this particular case, yes, I'd say
17 so.

18 Q So if you could turn to Paragraph 19 for
19 me.

20 A Of?

21 Q Of Exhibit 5.

22 A Thank you.

23 Q That's what you say. You said you were
24 prepared to testify as an expert in the field and
25 also as someone who had at least the knowledge of a

1 person with skill in the art, right?

2 A Yeah.

3 Q So when you wanted to say that you had
4 extraordinary experience and were also a person of
5 skill, you knew how to say it in Exhibit 5?

6 MS. CAPPELLA: Object to the form.

7 THE WITNESS: You're comparing two
8 different documents. I said the same
9 thing in different ways. I did not use
10 the same language in both the expert
11 report and the declaration.

12 BY MR. MCKEE:

13 Q Well, you don't say you have
14 extraordinary experience in vaporizer devices, right?

15 A I do not use those words.

16 Q You don't say you have extraordinary
17 experiences with ENDS devices, right?

18 A I did not use those words, but I stated
19 specifically what my training and experience was.

20 Q And in fact, you don't have extraordinary
21 experience. You only have experience with MEMS
22 sensors; that's what you testified earlier, right?

23 MS. CAPPELLA: Objection. Form.

24 THE WITNESS: That's not correct.

25 BY MR. MCKEE:

1 Q I think the testimony speaks for itself.

2 Now, if you could turn to your legal
3 standards in this report, Exhibit 1.

4 A Okay.

5 Q You can put Exhibit 5 aside.

6 And turn to Paragraph 53 for me. And
7 actually, we'll start at Paragraph 51.

8 When you're evaluating obviousness, you
9 understand that the perspective that must be applied
10 is the perspective of a person having ordinary skill
11 in the art to which the subject matter pertains as of
12 the effective filing date of the patent claim, right?

13 A Correct.

14 Q Now, you also understand that you are
15 offering expert opinions on behalf of the party
16 challenging the validity of the '123 and '114
17 patents, right?

18 A Correct.

19 Q And you have to prove patent invalidity
20 by clear and convincing evidence, right?

21 A Correct.

22 Q And for obviousness, you have to show by
23 clear and convincing evidence that a person of
24 ordinary skill in the art would have been motivated
25 to combine the teachings of prior art references to

1 achieve the claimed invention, right?

2 A True.

3 Q And also, that he would have had an
4 reasonableness expectation of success in doing so?

5 A Correct.

6 Q You understand that apparent similarity
7 between prior art references is not enough to provide
8 a motivation to combine those references?

9 A Not in and of itself, that's correct.

10 Q And that it is not enough to support a
11 determination of obviousness that a reference
12 includes a broad generic disclosure and a common
13 utility to that in the prior art references, right?

14 MS. CAPPELLA: Objection to form.

15 THE WITNESS: Also correct.

16 BY MR. MCKEE:

17 Q There must be a specific reason to
18 combine aspects of different references?

19 MS. CAPPELLA: Objection to form.

20 THE WITNESS: One needs to identify
21 a reason, yes.

22 BY MR. MCKEE:

23 Q It's wrong to use an asserted patent as a
24 road map through the maze of prior art references,
25 combining the right references in the right way so as

1 to achieve the result of the claims of the
2 Patent-in-Suit, right?

3 MS. CAPPELLA: Yes.

4 THE WITNESS: Right, one is not to
5 use hindsight.

6 BY MR. MCKEE:

7 Q And if you skip to Paragraph 56, you
8 understand that mere knowledge of a problem and
9 motivation to solve it is not motivation to combine
10 particular references to reach a particular claimed
11 method, right?

12 MS. CAPPELLA: Objection to form.

13 THE WITNESS: Agreed.

14 BY MR. MCKEE:

15 Q And further, Paragraph 57, you understand
16 that any proposed modification or combination cannot
17 change the principle of operation of the prior art,
18 right?

19 MS. CAPPELLA: Objection to form.

20 THE WITNESS: Correct.

21 BY MR. MCKEE:

22 Q What is your understanding of what the
23 principle of operation of the prior art means?

24 A That would have to be applied in context
25 to the particular patents or documents at issue.

1 Q In the context of the patents that you
2 opined about today, if you change the pressure sensor
3 and the way it works, have you changed the principle
4 of operation of the prior art?

5 MS. CAPPELLA: Objection to form.

6 THE WITNESS: It depends upon the
7 particular patent and it depends upon the
8 claims that are at issue.

9 BY MR. MCKEE:

10 Q But either way, we agree you can't change
11 the principle of operation, right?

12 A You cannot change whatever that principle
13 of operation is.

14 Q You also understand in Paragraph 58 that
15 the asserted prior art reference or device must be
16 analogous art to the claimed invention, right?

17 MS. CAPPELLA: Objection to form.

18 THE WITNESS: Yes, that's correct.

19 BY MR. MCKEE:

20 Q And a reference can be analogous if it's
21 from the same field of endeavor as the claimed
22 invention, right?

23 A Correct.

24 MS. CAPPELLA: Objection to form.

25

1 BY MR. MCKEE:

2 Q Finally, in Paragraph 60, you understand
3 that a person of skill in the art would not have been
4 motivated to add a component to a reference if it
5 would perform a redundant function as a preexisting
6 component within the primary reference, right?

7 MS. CAPPELLA: Objection to form.

8 THE WITNESS: That is correct; but
9 on your previous question, I don't want
10 to leave that on the record that it's
11 only -- the analogous is only if it's in
12 the field of endeavor. It can also be a
13 reference that's reasonably pertinent to
14 the problem faced by the inventor.

15 BY MR. MCKEE:

1

[REDACTED]

17 BY MR. MCKEE:

18 Q So then I'm going skip ahead and ask you
19 about your '123 validity opinions, and I'll skip '114
20 now while we get the thing printed.

21 Let's go to Worm. And for now, you
22 should be able to put your rebuttal report aside.

23 A I am.

24 MR. MCKEE: All right. I'm marking
25 as Exhibit 9 U.S. Patent Application No.

1 2015/0245658 to Worm.

2 (McAlexander Deposition Exhibit No.

3 9 was marked for the record.)

4 BY MR. MCKEE:

5 Q Let me know when you have it, please.

6 A All right. I have Worm Exhibit 9.

7 Q All right. Your opinion provided in
8 Section 9.4.5 of your report is that Worm anticipates
9 Claims 14, 27 and 32 of the '123 patent, right?

10 A Yes, sir, that's correct.

11 Q And you also provide an opinion in
12 Section 9.4.6 that Worm, in view of the knowledge of
13 a person of ordinary skill in the art, renders
14 obvious Claims 14, 27 and 32, correct?

15 A That is correct.

16 Q So I want to start with your anticipation
17 opinions in the 9.4.5 section. But before we turn to
18 them, I'm going ask you to turn to your legal
19 understandings for anticipation, Paragraph 48 on Page
20 12. That's a good idea.

21 A All right. I'm on Page 12.

22 Q Do you understand that anticipation
23 requires explicit or inherent disclosure in a single
24 prior art reference of each and every element of a
25 claim as properly construed, right?

1 A I have that understanding.

2 Q And you further understand that such
3 reference must have an enabling disclosure with
4 enough information to enable a person skilled in the
5 art to reproduce the claimed invention, right?

6 A Correct, as well.

7 Q And those are the understandings that you
8 applied for your anticipation opinions regarding
9 Worm, right?

10 A I did, yes.

11 Q Okay. So now let's turn to those
12 opinions, starting on Page 153. And I want to start
13 by just taking a look at the different sections of
14 your opinion here.

15 So for Claim 14A, the Preamble, you cite
16 to Worm Figure 2, right?

17 A Yes, that's correct.

18 Q And you include Worm Figure 2, as well,
19 for 14B and 14C, right?

20 A I have additional information from 14C,
21 but I do have Figure 2 as a part of both 14A, B and
22 C.

23 Q In 14C you also cite to Figure 5, right?

24 A That is correct.

25 Q And you cite to Figure 5 for 14D, as

1 well, correct?

2 A I do.

3 Q And in 14D you also cite to Figure 7?

4 A Correct.

5 Q And 6B, correct?

6 A As well as Figure 5 and Figure 25.

7 Q Figure 25 is from the '123 patent --

8 A That is correct.

9 Q -- and not the --

10 A That is correct.

11 Q For Figure -- for Limitation 14E, you
12 only cite to Figure 7, correct?

13 MS. CAPPELLA: Objection to form.

14 THE WITNESS: Correct.

15 BY MR. MCKEE:

16 Q And for 14F, you cite to Figures --
17 Figures 2 and 7, correct?

18 A That appears correct.

19 Q And then for Limitation 14G, Figure 5,
20 right?

21 A Correct.

22 Q So if you could open Worm for me, Exhibit
23 9, and turn to Paragraph 12, which is the beginning
24 of the description of the figures.

25 A All right. I see Paragraph 12.

1 Q In Paragraph 14, Worm describes Figure 2
2 as a sectional view through an electronic smoking
3 article comprising a cartridge and a control body
4 according to an example embodiment of the present
5 disclosure, right?

6 A And I may have misheard. You said
7 Paragraph 12?

8 Q Then I changed to Paragraph 14.

9 A Thank you.

10 Yes.

11 Q And then in Paragraph 15, describing
12 Figure 3, Worm describes it as: A sectional view
13 through a control body of an electronic smoking
14 article according to an example embodiment of the
15 present disclosure.

16 Right?

17 A Correct.

18 Q And then Figures 4 and 5 refer to the --
19 are different views of the same embodiment depicted
20 in Figure 3, right?

21 A That is correct.

22 Q Figure 6A and 6B are cross-sectional
23 views of Figure 5, right?

24 A Also correct.

25 Q And Figure 7 is a partial sectional view

1 of an electronic smoking article according to a
2 further example embodiment of the present disclosure,
3 showing a control body connected to a cartridge via
4 the control body coupler and the cartridge space,
5 right?

6 A Correct.

7 Q Worm does not say that these are the same
8 embodiment, right?

9 MS. CAPPELLA: Objection to form.

10 THE WITNESS: What do you mean,
11 these are not the same embodiments?

12 BY MR. MCKEE:

13 Q The embodiment shown in Figure 2, Figures
14 3 through 6 and Figure 7 are different, correct?

15 MS. CAPPELLA: Objection to form.

16 THE WITNESS: Three through 5 would
17 represent the same embodiment.

18 BY MR. MCKEE:

19 Q And 6, as well, right?

20 A As well as -- 6 and 7 -- I mean, Figure
21 6A and 6B would represent through Figure 5, which is
22 a part of 3, so yes. And then so Figure 7 is another
23 embodiment.

24 Q Okay. I want to establish what some of
25 the things in Worm are real quick.

1 So if you look at Figure 2, it has an
2 Element 208. And you can probably find this labeled
3 in your report.

4 A Sensor.

5 Q That is a -- it's described as a flow
6 sensor, right?

7 A That is correct.

8 Q And then there are also sensors Labeled
9 308 and 708 depicted in Worm's figures, right?

10 A So we have 208, 308 and 708?

11 Q That's correct.

12 A That's correct.

13 Q And 308 in Paragraph 60 of Worm, 6-0, is
14 described as a pressure sensor, right?

15 A Paragraph again?

16 Q Six-zero.

17 A It says Pressure Sensor 308.

18 Q In contrast, in Paragraph 54, 208 is
19 described as an air flow sensor attached directly to
20 an electronic circuit board, right?

21 A Paragraph 53 refers to 208 as a flow
22 sensor. It also, further in Paragraph 54, indicates
23 that the Control Component 206 and Flow Sensor 208
24 are illustrated separately. It's understood that
25 these may be combined on the circuit board.

1 Q Right. And so that's what I'm getting
2 at.

3 The embodiment that's shown in Figure 2
4 and described in Worm does not describe Element 208
5 as a pressure sensor, right?

6 A It doesn't use the word pressure. It
7 uses the word flow.

8 Q In fact, it does not use the word
9 pressure in connection with the description of Figure
10 2 at all, right?

11 A I think that's correct.

12 Q Okay. It doesn't describe the -- a
13 negative pressure space or anything along those
14 lines, right?

15 A I think in this particular example it
16 does not go into any more detail about it than that.

17 Q All right. Now, in Figure 7, there is an
18 element labeled 708.

19 Do you see that?

20 A I see 708 in Figure 7.

21 Q 708 is undescribed in the specification,
22 to my knowledge; but it's your understanding that
23 it's a pressure sensor, right?

24 A Well, in typical fashion going from
25 figures, they use the same number, but it's 208, 308,

1 708. Typically, that's a common way to represent
2 something.

3 Q Right. But it's a little different here
4 because 208 is described as a flow sensor while 308
5 is described as a pressure sensor. I think it's your
6 opinion that 708 is a pressure sensor, just like in
7 the Figure 5 and similar descriptions, but I'm just
8 looking to confirm.

9 A You know, just looking at everything,
10 everything would to indicate that that's the --
11 that's what I would anticipate the answer to be, yes.

12 Q Again, not trying to trip you up. Just
13 trying to set the stage here.

14 A No, that's fine. And I want to look at
15 -- just one second here. I want to look at the
16 description here on Figure 7.

17 Q Uh-huh.

18 A Yes, I would think that, based on what I
19 read and see here, they would also be a pressure
20 sensor.

21 Q Now, in Paragraph 351 of your report, you
22 opine that Worm's pressure sensor controls the
23 operation of the Smoking Article 200, right?

24 A Paragraph again?

25 Q 351.

1 A Yes.

2 Q [REDACTED]

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13 BY MR. MCKEE:

14 Q There's a lot in Worm that controls the
15 operation, too, right?

16 A Uh-huh.

17 Q And one of those things is the pressure
18 sensor?

19 A That is correct.

20 Q [REDACTED]

■

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24 BY MR. MCKEE:

25 Q All right. And then in Paragraph 353,

1 you say that: Worm additionally discloses an
2 exemplary device with puff actuation capability.

3 Right?

4 A That's correct.

5 Q [REDACTED]

6 [REDACTED]

7 [REDACTED] [REDACTED]

8 [REDACTED] [REDACTED]

9 [REDACTED]

10 BY MR. MCKEE:

11 Q In 352, you say: A person of ordinary
12 skill in the art would have understood that Worm's
13 pressure sensor provides sensor readings via pins of
14 the pressure sensor in response to detection of a
15 reduced pressure reading that are used by the
16 controller to operate the device.

17 Right?

18 A That's exactly what I read.

19 Q [REDACTED]

20 [REDACTED]

21 [REDACTED]

22 [REDACTED]

23 [REDACTED]

24 [REDACTED] [REDACTED]

25 [REDACTED] [REDACTED]

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██████████
BY MR. MCKEE:

Q I'd like to turn to Limitation 14D.

A 14D?

Q 14D on -- let's go to Page 162.

A All right.

Q Where you have a version of Worm Figure
5. All right.

So 308 here in yellow is the pressure
sensor; is that right?

A That is correct.

Q And 308 has adjacent to it a Reduced
Pressure Space 383?

A Correct.

Q I think it's called a Pressure Reduction
Space.

A Correct.

Q And it's also able to take a reading from
373, which is called a Normal Pressure Space, right?

A That is correct.

Q It's your opinion that the reduced
pressure space is part of the sealed air flow path,
right?

A Also correct.

Q All right. If we could turn to Figure 7

1 on Page 164. This embodiment is slightly different,
2 right, than the one shown in Figure 5?

3 A It is slightly different, yes.

4 Q Among other things, there is now an
5 extension of the normal pressure space that is
6 directly adjacent to what you've labeled as Pressure
7 Sensor 708, right?

8 MS. CAPPELLA: Objection to form.

9 THE WITNESS: I don't think I
10 understood your question. Could you ask
11 again?

12 BY MR. MCKEE:

13 Q Do you see -- if you look at Figure 7 in
14 your annotations, there's the dark blue that is below
15 the Pressure Sensor 708?

16 A Right.

17 Q According to your annotations?

18 A Right.

19 Q If you look at Figure 5, there is no dark
20 blue underneath Pressure Sensor 308, correct?

21 A When I look at Figure 5 versus Figure 7,
22 I will agree with you that there is a space below the
23 Pressure Sensor 708. There is also -- if you will
24 notice, there is not any contacts as shown in Figure
25 5. So this would be showing a -- a different cross

1 section, if you will, in a different location in that
2 device.

3 But in either case, whether it's Figure 5
4 or Figure 7, you have two sides of the pressure
5 sensor, one of which is the pressure sensor side and
6 the other one is -- in the normal pressure space, and
7 the other is in the reduction space.

8 Q And what are the contacts that you're
9 referring to in Figure 5 that you said?

10 A I'm looking at Figure 5 at the bottom
11 side of the board that it sits on.

12 Q Where the line for 308B kind of runs
13 through?

14 A Yeah, that's one of them. I'm just
15 saying, they're not shown -- not identified on Figure
16 7.

17 Q All right. Now, for -- if you turn to
18 Figure 7, for the air flow path, it is your opinion
19 that: When a smoker draws on Worm's device, air
20 travels from the periphery to the center of the
21 cavity where it enters the cartridge, and then exits
22 the cartridge out of an opening in the mouthpiece
23 into the smoker's mouth.

24 Did I read that right on Paragraph 63?

25 A That is correct.

1 Q That means, in other words, that the air
2 flow path, in your opinion, follows the interface
3 between Cartridge 704 and Control Body 702, right?

4 A It does. There are other paths, but that
5 one definitely is present.

6 Q It's the -- that's the light blue line
7 that you've drawn in between the green and brown
8 lines, right?

9 A Yes, sir, that's correct.

10 Q Now, air also enters through Air Inlets
11 789 in Figure 7, and 389 in Figure 5, right?

12 A That is correct.

13 Q And Figure 6B, which you have on Page
14 167, shows a cross section of the device of Figure 5
15 right where that air inlet passage is, right?

16 A That's correct, and it shows an air flow
17 channel in Figure 6B.

18 Q So basically there's a passageway from
19 end to end on the device, side to side, that
20 corresponds to this -- this opening labeled 389,
21 right?

22 A That's right. You have an air flow path,
23 as you said, side to side between two air flow
24 inputs, and as well as the -- as the area that I've
25 designated on Figure 7 which is between the

1 connection points between the two halves.

2 Q Right. And that's what, at least in
3 Figure 5, is labeled 388, the Air Inlet Channel?

4 A Yes, sir, that's correct.

5 Q And that's right -- right in the middle
6 of the device is that air inlet channel?

7 MS. CAPPELLA: Objection to form.

8 THE WITNESS: Well, I'm not sure
9 what you mean, right in the middle of the
10 device. It goes from edge to edge.

11 BY MR. MCKEE:

12 Q All right. What I'm getting at is, if
13 you look at Figure 6B, there's a -- there's a larger
14 section right in the middle, below or at the base of
15 this -- this coupler or cavity, right?

16 A Yes, and that would apply to 789, and see
17 what it is in Figure 5.

18 Q It should be 389.

19 A 389, yes, correct.

20 Q Now, Worm does not disclose that air
21 follows that perimeter where you've labeled it Air
22 Flow in Figure 7, right?

23 MS. CAPPELLA: Objection to form.

24 THE WITNESS: I don't recall that
25 Worm discloses that directly as air flow;

1 but with the registration bumps that you
2 see between the two sections, you can see
3 that you mate the two together until that
4 registration bump locks it into place,
5 and there is a gap between the two. So
6 air flow is going to take place.

7 BY MR. MCKEE:

8 Q You understand that one -- one thing that
9 affects fluid communication is the size of the gap
10 through which the fluid is passing, right?

11 MS. CAPPELLA: Objection to form.

12 THE WITNESS: It would affect the
13 volume of the fluid communication.

14 BY MR. MCKEE:

15 Q And another thing that affects fluid
16 communication is corners, right?

17 A Yes, that's correct.

18 Q Okay. And in this case, in order for the
19 air flow to get from the exterior of the -- of the
20 Worm device into the cavity in the middle,
21 approximately where 789 is shown, it has to cross --
22 one, two, three, four, five, six, seven -- eight
23 corners, right?

24 A You express them as corners, but if you
25 look at this in three dimension, it's steps, not

1 corners, because it's completely around the entire
2 periphery, the complete circular aspect of it. So
3 there are those number of steps that one has to
4 contour, but it's drawing air from the entire
5 circular area.

6 Q And each step represents an angle that
7 would reduce air flow, right?

8 MS. CAPPELLA: Objection to form.

9 THE WITNESS: Not any issue with
10 that statement.

11 BY MR. MCKEE:

12 Q When a user draws on the device -- well,
13 on any device similar to the one depicted in Worm,
14 the first place that air will flow at low pressure is
15 through 789, right, the air in the passage?

16 MS. CAPPELLA: Objection to form.

17 THE WITNESS: When you say the
18 first place, I'm not sure what the extent
19 of your statement is or scope of your
20 statement. Could you --

21 BY MR. MCKEE:

22 Q Let me ask it this way.

23 A If you have a draw, you're going to --
24 anytime you have an opening to the external, there's
25 going to be draw through that.

1 Q There is more pressure required to pull
2 air through the perimeter of the cartridge and
3 control body interface than is required to pull air
4 through the Air Inlet Aperture 789, right?

5 MS. CAPPELLA: Objection to form.

6 THE WITNESS: No. There's no
7 statement in here as to the size of
8 either one of these. There's no
9 statement as to the size of the opening
10 that goes to 789. And it is only two
11 areas that -- on either side that it
12 would be drawing from, whereas you have
13 the entire circumference through the step
14 mechanism.

15 So, no, it's not -- it's not --
16 your statement is not accurate.

17 BY MR. MCKEE:

18 Q One is a straight path and one is a
19 convoluted stepwise path, right?

20 A And correct; and the convoluted stepwise
21 path has more surface area through which the flow of
22 air can take place than the direct path.

23 Q You have to agree, don't you, that the
24 gap between the interface -- the gap between the
25 control body and the cartridge is depicted as being

1 much smaller than the air inlet aperture, right?

2 MS. CAPPELLA: Objection to form.

3 THE WITNESS: You have to agree
4 that as long as you have opening, you're
5 going to have air intake on both.

6 BY MR. MCKEE:

7 Q I really don't.

8 The air inlet aperture is the only air
9 inlet passageway described in Worm, right?

10 MS. CAPPELLA: Objection to form.

11 THE WITNESS: It is an air flow
12 passageway that was described in Worm.
13 It's not the only one in which air flow
14 will take place.

15 BY MR. MCKEE:

16 Q There is no express disclosure of air
17 flowing along the -- this perimeter that you've
18 labeled on Page 164, right?

19 MS. CAPPELLA: Objection to form.

20 THE WITNESS: If you will look at
21 Worm, in Paragraph 76, it states: When
22 draw on the device -- when draw on the
23 device causing air to enter the Air Inlet
24 Channel 788 -- that's not 789, that's
25 788 -- through the Air Inlet Aperture 789

1 causes a pressure drop, such pressure
2 drop is communicated to the Cavity 725.
3 The match configuration of the Cavity 725
4 and the Projection 741 preferably does
5 not substantially form an airtight
6 connection there between, thus the
7 pressure drop in the Cavity 725 is
8 likewise communicated to the Pressure
9 Channel 785 from the first end.

10 And so forth. So it's stated very
11 emphatically that it's not a
12 substantially airtight connection.

13 BY MR. MCKEE:

14 Q I think you're completely misreading
15 that. So let's take it one step at a time.

16 If you look at Figure 6B, do you see that
17 it labels 388?

18 A Figure 6B?

19 Q 6B.

20 A I see that.

21 Q 388 is the air inlet channel, right?

22 A That is an air inlet channel, yes.

23 Q And it's the air inlet channel
24 corresponding to 389 Air Inlet Aperture, right?

25 A It's connected to the air inlet -- the

1 389, yes.

2 Q And Figure 7, it doesn't have a
3 cross-sectional view like 6B does, right?

4 A That is a correct statement.

5 Q But it's your understanding that similar
6 numbers would relate to similar structures; that's
7 what you said earlier, right?

8 A That's what I said earlier, that's
9 correct.

10 Q And so Air Inlet Channel 788 is going to
11 correspond to Air Inlet Aperture 789, right?

12 A Well, in Figure 7 they identify 788 and
13 789 both and they're not the same.

14 Q That wasn't my question.

15 Can you look at Figure 5 then. Figure 5
16 also identifies Air Inlet Channel 388 and Air Inlet
17 Aperture 389 and they are not the same, right?

18 A That is correct.

19 Q Figure 7 is representing the exact same
20 thing as Figure 5 in this regard, correct?

21 A Well, if you look at Figure 5, where
22 you're pointing to there with Figure 6B -- correct?

23 Q Yep.

24 A All right. That is a specific cross
25 section which shows that there is a definite

1 connection, in the same plane, between those two
2 points. There is not any such cross section in
3 Figure 7, and what I was pointing to is not in the
4 same plane.

5 Q Neither is it in Figure 5, right? And
6 yet Figure 6B provides a cross section of the 408,
7 388 and 389, and there is no similar cross section
8 for Figure 7, right?

9 MS. CAPPELLA: Objection to form.

10 THE WITNESS: In Figure 5 they show
11 a cross section that goes through 388 and
12 389, and that's exemplified in Figure 5
13 and it shows as a cross section in Figure
14 6B. They are in the same plane.

15 When I go to Figure 7, there is an
16 indication that -- let me look at this.
17 I'm not going to discount the fact they
18 could be pointing to the same area.

19 BY MR. MCKEE:

20 Q That's really all I'm getting at.

21 And there's no disclosure in this patent
22 that -- this reference, I should say, that --
23 relating to an air inlet channel that's not in the
24 context of an air inlet aperture such as 789, right?

25 MS. CAPPELLA: Objection to form.

1 THE WITNESS: Say that again,
2 please.

3 BY MR. MCKEE:

4 Q The air inlet channel is always discussed
5 in Worm in connection with the air inlet aperture,
6 right?

7 A Give me a second. Well, the rest of that
8 statement still holds true in Paragraph 76, because
9 basically what they're doing is they're pointing
10 to -- they're pointing to what's called a cavity,
11 725, which is the area in between the two joining
12 places, and 741, which is the other interface. And
13 they're saying that that particular step area does
14 not substantially form an airtight connection.

15 So it's not an airtight connection, so
16 therefore one can only conclude that there would be
17 air that's drawn in through that particular step
18 area, as well as to the 788, 789.

19 Q What it says is that, because it's not
20 airtight, the pressure drop in the cavity is
21 communicated to the Pressure Channel 785 from the
22 First End 785A, to the Second End 785B, and thus the
23 Pressure Reduction Space 783, right?

24 A And it does -- it does say that, as well,
25 but it also says there's not an airtight connection

1 between these two joining pieces.

2 Q You're assuming, aren't you, that the --
3 that this -- this paragraph, 76, is disclosing that
4 the entirety of the connection is not airtight,
5 right?

6 A It says: Does not substantially form an
7 airtight connection.

8 So, yes, there will be parts of it, if
9 not all of it, that -- that permit and do participate
10 in air being taken in during the draw.

11 Q The only place that the airtight
12 connection matters, according to Paragraph 76, is in
13 connection with the pressure sensor, right?

14 MS. CAPPELLA: Objection to form.

15 THE WITNESS: If I understand your
16 question correctly, anytime you draw and
17 you have a pressure sensor, then you're
18 going to be drawing in air. That air is
19 going to be drawn in because of the mouth
20 exhibiting a draw. It has nothing to do
21 with the pressure sensor.

22 The pressure sensor is going to
23 look at the result of that. Air flow is
24 not going to be created because of the
25 pressure sensor. The pressure sensor

1 monitors the air flow.

2 BY MR. MCKEE:

3 Q You'd agree that Air Inlet Aperture 789
4 is a more direct route for the air to travel to the
5 cavity than what you've labeled as the air flow path,
6 right?

7 A It is also an air flow path and it is
8 more direct, if by direct you mean straight line.

9 MR. MCKEE: Okay. We can take a
10 break. We've been going for a little
11 bit.

12 THE VIDEOGRAPHER: Going off the
13 record at 4:14 p.m.

14 (Brief pause.)

15 THE VIDEOGRAPHER: We're back on
16 the record at 4:37 p.m.

17 BY MR. MCKEE:

18 Q All right. So just a couple more
19 questions about the Worm anticipation ground we've
20 been talking about.

21 Have you ever heard of something called a
22 labyrinth seal?

23 A A labyrinth seal?

24 Q Labyrinth seal.

25 A I can picture what it might be, but no,

1 not directly.

2 Q You're aware that there are mechanical
3 mechanisms using sequential grooves or interlocked
4 grooves --

5 A Yes.

6 Q -- for reducing the passage of fluid
7 along, for example, a gear, right?

8 A Yes, that's correct.

9 Q And the way those work is that every time
10 the fluid encounters another bend, the flow of fluid
11 is reduced, right?

12 A That is correct, yes.

13 Q Okay. So I want to ask you a couple of
14 questions about your second invalidity ground, which
15 is Worm in combination with the knowledge of a person
16 of ordinary skill in the art. Specifically, if you
17 can turn to Paragraph 404 for me, and that looks like
18 it's on Page 180. Just let me know when you're
19 there.

20 A 404, I'm there.

21 Q Okay. So on -- on this Page 180, right
22 after 404, you have an image of Figure 7 from Worm,
23 right?

24 A Yes, that's correct.

25 Q And that's the same image we talked about

1 previously, right?

2 A Correct.

3 Q And its still has Air Inlet Passage 789,
4 right?

5 A Yes.

6 Q And, in your opinion, Air Inlet Passage
7 789 is not part of the sealed air flow path of the
8 claims, right?

9 MS. CAPPELLA: Objection to form.

10 THE WITNESS: Of the claims, that's
11 correct.

12 BY MR. MCKEE:

13 Q But it is part of the air flow path of
14 the device, right?

15 A Correct.

16 Q In this section of your report, you
17 address, at least in part, the existence of those
18 Inlet Apertures 789 and 389, right? For example, in
19 Paragraph 405?

20 A I do, yes.

21 Q And it's your opinion that air from the
22 periphery would join the air evacuated from the
23 pressure reduction space and enter into the
24 cartridge, pass by the heater and exit into the
25 smoker's mouth, right?

1 A Correct.

2 Q And the air at the periphery of the
3 interface connection enters as the negative pressure
4 increases, right?

5 A Also correct.

6 Q So there is some amount of negative
7 pressure at which air is not entering on the
8 periphery, correct?

9 A I can imagine such.

10 Q And then you say: However, for
11 embodiments in which the Air Inlet Aperture 789 and
12 Air Inlet Channel 788 are not used, it would have
13 been obvious to a POSITA that ambient air would enter
14 through the periphery at the interface connection
15 because it is the only source of ambient air in Worm,
16 as shown in Figure 7 above.

17 Right? I was reading from 405.

18 A Yes.

19 Q But the embodiments shown in Figure 7 and
20 Figure 5 are embodiments in which Air Inlet Aperture
21 789 or 389 and Air Inlet Channels 3 -- 788 or 388 are
22 used, right?

23 A They are used, and in addition to the
24 interface between the two.

25 Q So, at a minimum, in those embodiments,

1 Figure 5 and Figure 7, the periphery is not the only
2 source of ambient air?

3 MS. CAPPELLA: Objection to form.

4 THE WITNESS: That's correct, yes.

5 I think that's consistent with what we
6 talked about before.

7 (McAlexander Deposition Exhibit No.
8 10 was marked for the record.)

9 BY MR. MCKEE:

10 Q Okay. I have marked as Exhibit 10,
11 International Publication No. WO 2012/142293 to
12 Levitz.

13 Mr. McAlexander, please let me know when
14 you have that in front of you.

15 A Okay. I have Levitz, Exhibit 10.

16 Q All right. And if you could turn to
17 Page -- if you could turn to Page 184. You actually
18 rely on Levitz for two different things. The first
19 of which is air inlets at the interface of the
20 battery portion and the cartridge, right?

21 A Yes.

22 Q And the second -- we'll get to in a
23 moment -- is reversing Worm's male and female
24 connectors, that's on Page 189, right?

25 A Yes, that's correct.

1 Q So let's focus on the first one, the air
2 inlets. And I'm focusing on Paragraph 220.

3 It's your opinion that a person of skill
4 in the art would have been motivated to locate the
5 air inlet at the interface to the connection between
6 the battery portion and the cartridge because Worm
7 teaches the disadvantages of the sealed air flow path
8 entering the battery compartment, right?

9 A Is that Paragraph 220?

10 Q 420.

11 A 420. I was going to say, wonder why
12 we're going back there.

13 Q So I can read that again if you need me
14 to, but I was just reading the first sentence.

15 A That's what it states, yes.

16 Q And in support there, you cite in a
17 footnote Paragraph 5 of Worm, right?

18 A Yes, that's correct.

19 Q And in particular, Worm says that -- let
20 me get the rest of it -- Worm says in that paragraph
21 that: This can incorporate a coupler element that
22 includes an exterior opening and allows external air
23 to enter the device, and a pressure channel that
24 communicates a pressure drop caused by the drawn air
25 to an isolated segment of the device that includes a

1 portion of the pressure sensor.

2 Do you see that?

3 A Yes.

4 Q Air Inlet Aperture 389 and 789 is an
5 exterior opening in the coupler element, right?

6 MS. CAPPELLA: Objection to form.

7 THE WITNESS: It is such, yes.

8 BY MR. MCKEE:

9 Q And then it says, and this is the portion
10 you cite: Such coupler can particularly be useful to
11 reduce or prevent passage of liquid from an attached
12 cartridge, through the coupler and into the control
13 body, and thus reduce or prevent contamination of the
14 sensor or other electronic elements present in the
15 control body.

16 Did I read that right?

17 A Yes, you did.

18 Q All right. In the embodiments shown in
19 Figures 5 and 7 of Worm, the pressure sensor is
20 already in an isolated segment of the device, right?

21 A In Figures 5 and 7, that is correct.

22 Q And Worm teaches in Figure 5 that having
23 the pressure sensor in an isolated segment of the
24 device is already useful to reduce or prevent passage
25 of liquid from the cartridge through the coupler,

1 correct?

2 A Well, there is an isolation that is shown
3 in Figure 5. I've answered that. It's also shown in
4 Figure 7. And if you'll look, for instance, in
5 Figure 7, Worm describes Figure 7 as: The partial
6 sectional view of an electronic smoking article
7 according to a further example embodiment of the
8 present disclosure showing a control body connected
9 to a cartridge via the control body coupler.

10 So there's a coupler that's between the
11 two.

12 Q I think you're thinking along the same
13 lines I am, but --

14 A That's scary.

15 Q Now in your report -- in your report, the
16 reason that you say a person of skill in the art
17 would have been motivated to modify Worm in view of
18 Levitz to locate the air inlet at the interface to
19 the connection between the battery portion and
20 cartridge is a disadvantage that Worm already solves
21 by having its pressure sensor in an isolated segment
22 of what it calls -- what it calls the device, right?

23 A Well, I had made representation that Worm
24 disclosed all of the elements in the claim to begin
25 with. And I've also made the observation that

1 obviousness in light of a person skill in the art and
2 also with Levitz added to it; but Worm does disclose
3 all of what I think is required for the claims.

4 Q And I fully get that, but here we're not
5 fog about Worm by itself, right? Here we're talking
6 about why you would modify Worm in view of Levitz.

7 And what you've identified is an alleged
8 disadvantage described in Worm that Worm's disclosed
9 embodiments already solves, right?

10 A Certainly I have represented that Worm
11 has already solved that, already has provided.
12 Excuse me. But as a -- as far as the air inlets,
13 I've also represented that there are a number of
14 other patents and publications, that I've identified
15 on Pages 186 and 187, leading up to the consideration
16 of Levitz and showing that there are other design
17 choices, that it's clear from the art as to the
18 location of the air inlets.

19 And then further go into the fact that
20 the designs between Levitz and Worm are very similar.
21 So there's certainly a rationale to make a
22 combination. Both describe the e-cigarette with the
23 two portions, a battery and the atomizer or
24 cartomizer, and they use mechanical couplers and
25 embedding those mechanical couplers. The air inlets

1 and mechanical couplers just give further safety,
2 precaution.

3 So do I agree that Worm has already
4 solved it? Yes, I've already represented that as an
5 anticipation argument; but I've also said it's also
6 reasonable to look at other ways to design it and
7 Levitz provides some indication for that.

8 Q You understand that motivation to combine
9 requires a specific reason that Levitz would have
10 been combined, not simply that it could have been
11 combined?

12 MS. CAPPELLA: Objection to form.

13 THE WITNESS: I realize that, and
14 you're right, it's not a could-have,
15 would-have, should-have. It's that
16 there's a reasonableness to do so. And
17 so when I look at the clear teaching of
18 the way in which Levitz -- or the way in
19 which Worm does it, but if you want to
20 look at it from the consideration of
21 male-female versus female-male
22 connectors, then there would be other
23 considerations as to where you place
24 those inlets for the air flow to take
25 place.

1 So, yes, I think it's a reasonable
2 expectation of success and a reasonable
3 rationale to combine those.

4 BY MR. MCKEE:

5 Q Let me ask you this.

6 In Paragraph 417, you explain that a
7 POSITA would have understood, right? That's how you
8 begin that paragraph?

9 A Yes, that's correct.

10 Q And then in Paragraph 418 you say a
11 POSITA would have recognized, right?

12 A Correct.

13 Q And then in 420, you say a POSITA would
14 have been motivated, right?

15 A That is correct. All three are correct.

16 Q And you say, because Worm teaches the
17 disadvantages of the sealed air flow path entering
18 the battery compartment, right?

19 A Yes.

20 Q But Worm does not teach that that is a
21 disadvantage with the device it already discloses,
22 right? In fact, Worm teaches that those
23 disadvantages are prevented in the very paragraph
24 that you cite?

25 A Worm discloses in some of the figures,

1 such as Figure 2, a direct connection between the
2 two. He also shows, when you move up toward Figures
3 5 to 7, you're looking at the addition of a coupler.
4 And so he's showing both, and he's showing each one
5 of these as improvements, specifically to prevent the
6 passage of liquid into that particular area and
7 contaminate the sensor or the other electronic
8 elements.

9 So from a general summary of the
10 disclosure, that's what he presents, and then he goes
11 through multiple different embodiments. And it's
12 Figure 7, specifically, is a further example. And so
13 it's building -- each one of these is building on the
14 other to further segregate and isolate. So knowing
15 that that's the progression of how can one further
16 segregate and isolate, Levitz comes in with
17 additional considerations, even to the extent that
18 you can reverse the polarity of the male, female
19 connections.

20 Q You agree that in the embodiments of Worm
21 shown in Figures 5 and 7 there is no disadvantage of
22 the sealed air flow path entering the battery
23 compartment, right?

24 A I believe in Figures 5 and 7 that Worm
25 has described and enabled a way in which you can

1 achieve that result, yes.

2 Q Now, if you turn back a couple pages to
3 185, you have a figure that you've labeled Modified
4 worm.

5 Do you see that?

6 A Yes, I do.

7 Q This figure labeled Modified Worm
8 represents your opinion regarding what the
9 combination of Worm and Levitz would look like,
10 right?

11 A Yes.

12 Q And you agree that Air Inlet Path 789 is
13 still there, right?

14 MS. CAPPELLA: Objection to form.

15 THE WITNESS: 789, in the center,
16 is still there, yes. And so you can,
17 through the Worm, have access to that
18 through the air inlet that is in the same
19 plane. And what I've shown here is the
20 air inlet is not in the same plane. So
21 it still has access to that center
22 portion, but it is modified, it is
23 different.

24 BY MR. MCKEE:

25 Q The air inlet that you've circled in red

1 there --

2 A Yes, sir.

3 Q -- in the Modified Worm figure on Page
4 185, that still is part of an air passageway that
5 flows along the periphery of the interface between
6 the cartridge and the control body, right?

7 A Yes, that is correct.

8 Q And then we advance ahead for your second
9 Worm and Levitz opinion.

10 It's your opinion that, in the
11 combination of Worm and Levitz, the battery portion
12 would include the female connector for receiving the
13 cartomizer and the cartomizers would include a male
14 connector, right?

15 A That's correct, and I show the
16 modification on Page 190.

17 Q And this modified embodiment, though, you
18 have removed the Air Inlet Aperture 789, correct?

19 A That's correct, because in this modified
20 version uses a male-female reversal, you're actually
21 moving the air inlet for the air flow further away
22 from the battery compartment. So all of it actually
23 operates as a further safety advantage to using this
24 kind of approach.

25 Q So Worm discloses an air inlet, but in

1 the proposed combination you have removed it, right?

2 A No. The air inlet is shown on the right
3 side rather than the left side since we've reversed
4 the -- reversed the connections between female and
5 male. So now the air flow is through that inlet, if
6 you will, where I've identified on Page 190 the air
7 flow arrows. The tip of the arrows is the inlet.
8 That's the point at which the air enters into the
9 structure.

10 Q Right. You've removed Air Inlet Aperture
11 789 and Air Inlet Channel 788, correct?

12 A I've removed those because they were
13 closer to the battery compartment and, instead, I'm
14 using the air inlet as far as where I've drawn the
15 air flow.

16 Again, it's following the same aspect as
17 what I have shown earlier in Worm, Figure 7, but it
18 is -- by reversing the connectors, it is moving that
19 air intake closer to the mouthpiece and further away
20 from the battery compartment so that it's an expected
21 result, which would be an improvement.

22 MR. MCKEE: I move to strike as
23 nonresponsive.

24 BY MR. MCKEE:

25 Q You've removed Air Aperture 789 and Air

1 Inlet Channel 788 from Worm in the proposed
2 combination of Worm in view of Levitz that you depict
3 on Page 190, right? Those elements are not there?

4 MS. CAPPELLA: Objection to form.

5 THE WITNESS: Correct, they're not
6 there because I reversed the connectors.

7 BY MR. MCKEE:

8 Q And the only rationale that you provide
9 for why a person of skill in the art would have been
10 motivated to make the modification of Worm that you
11 propose, switching the male and female connectors, is
12 in Paragraph 427, where you say: That is because the
13 male and female coupling arrangement is no more than
14 a design choice.

15 Right?

16 A I have stated that in Paragraph 427. I
17 followed that in Paragraph 428, said that there would
18 be reasonable expectation of success by reversing the
19 coupling. It would not have impacted the rest of the
20 device in any meaningful way.

21 Q You understand that motivation to combine
22 and reasonable expectation of success are separate
23 questions, right? You have to have a reason to make
24 the modification, and then you have to have a
25 reasonable expectation of success in doing so, right?

1 A I think that there are two prongs to
2 that, yes.

3 Q Okay.

4 A And so there's a reason --

5 Q And so the first prong, the only thing
6 you have in your report is Paragraph 427, right?

7 A Well, that is a reason.

8 Q It is the only reason you articulate in
9 your report, right?

10 MS. CAPPELLA: Objection to form.

11 THE WITNESS: It is a reason that I
12 articulated in my report.

13 BY MR. MCKEE:

14 Q And you identify no other reasons in your
15 report, correct?

16 A It is a reason.

17 Q Not my question.

18 It is the only reason in your report,
19 right?

20 MS. CAPPELLA: Objection to form.

21 MR. MCKEE: I mean, this section of
22 your report is a page and a half, and
23 there's only one paragraph that begins
24 with: A POSITA would have been motivated
25 to make the modification.

1 So I don't know why this is a
2 difficult question to answer.

3 THE WITNESS: Well, I've already
4 given you an answer to it. I was just
5 looking to see if there was some other
6 way to structure an answer to you.

7 BY MR. MCKEE:

8 Q You keep saying it is a reason. It is
9 the only reason that you identify in your report why
10 a person of ordinary skill in the art would have been
11 motivated to make the combination, correct?

12 MS. CAPPELLA: Objection to form.

13 THE WITNESS: It is not the only
14 reason for the combination. It is
15 because we've also talked about the air
16 pathway. But from the male-female
17 connector, this is the only reason I
18 suggested, yes.

19 MR. MCKEE: Okay. I'm going to
20 mark two exhibits.

21 (McAlexander Deposition Exhibit
22 Nos. 11 and 12 were marked for the
23 record.)

24 BY MR. MCKEE:

25 Q So I've marked as Exhibit 11, U.S. Patent

1 Application Publication No. 2014/0318559, Thorens;
2 and as Exhibit 12, U.S. Patent Application
3 Publication No. 2015/0020831 to Weigensberg. And I
4 believe you've referred to Exhibit 11 as Thorens
5 '559?

6 A That is correct.

7 Q All right. So when you're ready, if you
8 could turn to Page 194 for me.

9 A Okay. I've got Page 194.

10 Q So what you've drawn here -- included at
11 the top of the page, rather, is an annotated version
12 of Thorens '559's Figure 3, right?

13 A Are you talking about at the top of page
14 193?

15 Q I asked about 194, for Thorens.

16 A Thank you. Yes, that's Figure 304.

17 Q And what you've labeled here is there is
18 a mouthpiece on the left, right?

19 A Yes, that's correct.

20 Q It then has an internal liquid cartridge,
21 right?

22 A It has a liquid cartridge, that's
23 correct.

24 Q And that slides into an outer shell,
25 right?

1 A Correct.

2 Q It discloses an air inlet that you've
3 labeled in blue, right?

4 A Also correct.

5 Q And all the way at the tail end of the
6 device is a puff indicator light, right?

7 A That is correct.

8 Q And then it's also got the thing which
9 you've labeled in orange, which is a puff detection
10 system that Thorens numbers 107, right?

11 A Right.

12 Q And below that, on the other side of the
13 air inlet, is another cylindrical object that Thorens
14 labels Circuitry 105, right?

15 A That is also correct, he labeled it 105.

16 Q Now, Thorens teaches that Puff Detection
17 System 107 and Circuitry 105 have electrical
18 connections that it labels 111 in Figure 1 to the
19 shell, right?

20 A Yes, that's correct.

21 Q And then at the very top of the shell,
22 where the mouthpiece and cartridge insert, there are
23 Electrical Contacts 113, right?

24 A That is correct.

25 Q And the way Thorens '559 works, according

1 to its disclosure, is that air enters at Air Inlets
2 115 and it flows through and around this Puff
3 Detection System 107, right?

4 A That would be correct.

5 Q All right. And Puff Detection System
6 107, that is an air flow sensor, right?

7 MS. CAPPELLA: Objection to form.

8 THE WITNESS: 107 is identified as
9 a puff detection system.

10 BY MR. MCKEE:

11 Q And if you look at Paragraph 15, it says:
12 Preferably, the electric circuitry comprises a sensor
13 to detect air flow indicative of a user taking a
14 puff.

15 That's a puff detection system, right?

16 A Yes.

17 Q All right. There is no disclosure in
18 Thorens '559 that uses a pressure sensor, is there?

19 MS. CAPPELLA: Objection to form.

20 THE WITNESS: It's a sensor to
21 detect air flow, and it says it may be an
22 electromechanical device; alternately, it
23 can be mechanical, optical,
24 opto-electrical, MEMS. It gives a number
25 of different arrangements in which that

1 sensor can be arranged.

2 BY MR. MCKEE:

3 Q And in which an air flow sensor can be
4 arranged, right?

5 A Yes, and one way to detect air flow is
6 pressure.

7 Q Does it say that one of the ways of
8 arranging the air flow sensor is as a pressure
9 sensor?

10 A I don't believe it uses the word
11 pressure. It uses air flow sensor.

12 Q But you think it could be a pressure
13 sensor?

14 A Pressure sensor is a type of sensor that
15 is used for electromechanical MEMS.

16 Q Okay. So you've got Thorens '559. It
17 teaches, according to you, a Pressure Sensor 107.
18 And then what you do is you take another reference
19 Weigensberg, that also has a pressure sensor, right?
20 You can see that, what you have from Weigensberg, on
21 Page 193.

22 A Correct.

23 Q All right. So what you've proposed is
24 that, in combination, Thorens '559 and Weigensberg,
25 it looks as you've depicted on Page 196, where you

1 remove Thorens '559's existing Puff Detection System
2 107, which you say is a pressure sensor, and you
3 remove its Circuitry 105, and you remove its battery
4 and it's -- its light at the end of the puff
5 indicator, and you replace all that stuff with
6 Weigensberg, right?

7 MS. CAPPELLA: Objection to form.

8 THE WITNESS: I disagree with your
9 characterization. Thorens identifies an
10 insertable cartridge with an air space
11 for the air to pass through. It has the
12 chamber that -- the reservoir, if you
13 will, for the liquid. It has the wicking
14 aspect. It has the thermal heating
15 aspect. Air passage to the mouthpiece.
16 It has all of that.

17 And so, yes, there is a puff
18 indicator light in Thorens down at the
19 tip which says that there's already
20 electrical wiring that has to be between
21 the sensor and the puff indicator light
22 because otherwise you wouldn't be able to
23 have the puff indicator light turn on.
24 So the wiring is already there. Control
25 is there. Sensing is already there.

1 Now, yes, in light of what is
2 taught -- what is taught and what I've
3 shown is, it's merely moving the pressure
4 sensor down to the end, which is as
5 taught by -- it's taught by the Exhibit
6 12, which is Weigensberg. So it's not a
7 bunch of stuff that's changed. The
8 wiring is already there. It's just a
9 matter of where it's placed.

10 BY MR. MCKEE:

11 Q You said that you disagree with my
12 characterization, but then none of your answer
13 disagreed with my characterization.

14 So is there something in particular about
15 my characterization you disagreed with?

16 A Yes.

17 Q What?

18 A You made it sound like a complicated
19 mess. It's not. It's just this is a design
20 iteration that one can -- in terms of where to place
21 the sensor, and the wiring is already there to do it.
22 So it's not a major task.

23 Q All right. Let me ask my question again
24 then, because, again, it had nothing to do with my
25 question.

1 So what you've proposed, as shown on Page
2 196, is that, in combination, you remove Thorens
3 '559's puff detection system, right?

4 A I move it.

5 Q But there's no Puff Detection System 107
6 anymore? You're not taking that element from Thorens
7 in this combination, right?

8 MS. CAPPELLA: Objection as to
9 form.

10 THE WITNESS: Thorens has a puff
11 detection system. So does Weigensberg.
12 What I'm saying is I'm using the one from
13 Weigensberg. You don't need to have two
14 puff detection systems.

15 BY MR. MCKEE:

16 Q You've taken Thorens' out in combination,
17 right?

18 A You can say I took it out or I moved it
19 to the end.

20 Q I'm going to say you took it out, because
21 that's what you did. You are taking a different
22 structure from Weigensberg.

23 You also remove Thorens '599's Circuitry
24 105, right?

25 MS. CAPPELLA: Objection to form.

1 THE WITNESS: I stated in Paragraph
2 441 that I modified Thorens: Pressure
3 sensor circuitry and LED are replaced by
4 Weigensberg control circuit, pressure
5 sensor and LED as a tip.

6 That's what I did. I combined the
7 two.

8 BY MR. MCKEE:

9 Q Right. So you've removed Thorens'
10 pressure sensor circuitry and LED, and you've
11 replaced them with elements from Weigensberg, in
12 combination, right?

13 A In making the combination, I only need
14 them in one place. So in moving them, it's
15 incorporating that which is taught by Weigensberg
16 within the construct of what was taught by Thorens.

17 Q So your opinion is that, even though
18 Thorens '559 already has a pressure sensor circuitry
19 and LED, that you would use a different pressure
20 sensor circuitry and LED from this other reference,
21 Weigensberg, right?

22 A Well, it seems to me to be an improvement
23 by combining them, because rather than having the
24 distinctive displacement between the sensor and the
25 indicator, according to Weigensberg I can actually

1 have the sensor and the indicator at the same end.
2 So it seemed like an improvement and it's an easy
3 design improvement.

4 Q And is that the standard for obviousness,
5 an easy design improvement?

6 A I'm just saying that is an easy design
7 improvement.

8 Q Is that your understanding for why you
9 say this would have been obvious?

10 MS. CAPPELLA: Objection to form.

11 BY MR. MCKEE:

12 Q Or does that, in fact, have nothing to do
13 with the obviousness inquiry?

14 MS. CAPPELLA: Same objection.

15 THE WITNESS: The distinction is,
16 is whether or not the claimed invention
17 as a whole would have been obvious before
18 the effective filing date. And so I
19 looked at, for instance, whether -- just
20 because it's a similarity is not enough
21 of a reason -- okay? I agreed with that.
22 It's not enough to support a
23 determination if it's a broad, generic
24 disclosure. I'm not doing that. It's a
25 very technical, direct disclosure between

1 Weigensberg.

2 And so when I look at the fact that
3 Thorens has a light indicator -- has an
4 indicator at the opposite end from where
5 the pressure -- where the sensor is
6 making this determination, that there is
7 a clear reason to combine it with -- with
8 the Weigensberg because it gets the light
9 indicator closer to the sensor, so I'm
10 meeting that obligation.

11 In order to show obviousness, facts
12 must have a showing that, when combined,
13 they yield a predictable result, and I've
14 shown that, as well. So I followed
15 one-by-one the particular parameters that
16 are required to make an obviousness
17 combination.

18 BY MR. MCKEE:

19 Q I didn't know you were a lawyer. That's
20 good to know.

21 Thorens '559 teaches a device that
22 operates by having air flow through and around a Puff
23 Detection System 107, right?

24 MS. CAPPELLA: Objection to form.

25 THE WITNESS: The -- the statement

1 in Thorens at Paragraph 46 is that the
2 Circuitry 105 and the puff detection
3 system are programmable. The Circuitry
4 105 and Puff Detection System 107 can be
5 used to manage the device operation in
6 this embodiment, and I quote: When the
7 Puff Detection System 107 senses the user
8 taking a puff.

9 Q Do you see Figure 3?

10 A Yes, I see it on Page 194.

11 Q The dashed line indicates air flow,
12 right?

13 A Yes, it indicates air flow around the
14 periphery of the reservoir area.

15 Q And also past the Puff Detection System
16 107, right, which is downstream from the air inlet?

17 A In this particular case -- downstream
18 from what?

19 Q The air inlet.

20 A Well, it's actually right at the air
21 inlet.

22 Q The air moves downstream from the air
23 inlet, past the puff detection system, right?

24 A Well, it moves certainly, in quotes,
25 downstream, if you look at it going toward the

1 mouthpiece, yes.

2 Q And that's what any person skilled in the
3 art in this field would understand downstream to
4 mean, right?

5 A I would have to look at the word
6 downstream in terms of context; but in this
7 particular instance, I discuss in that in terms of
8 the detection toward the mouthpiece that's consistent
9 with a draw, which is what we're talking about.

10 Q The Puff Detection System 107 in Thorens,
11 it is not a differential pressure sensor, right?

12 MS. CAPPELLA: Objection to form.

13 THE WITNESS: It doesn't state one
14 way or the other. It's a puff detection
15 system that detects or senses the user
16 taking a puff.

17 BY MR. MCKEE:

18 Q It also doesn't disclose any gasket
19 sealing the ambient pressure side of Puff Detection
20 System 107, if there were one, from the opposite side
21 of Puff Detection System 107, right?

22 A The -- the aspects that you are referring
23 to is looking at the combination, and I'm looking at
24 those being performed by Weigensberg for those
25 particular claim limitations.

1 Q I'm actually asking just about Thorens
2 first. I understand you're substituting Weigensberg
3 for a number of elements.

4 But Thorens does not disclose any gasket
5 sealing the ambient pressure side of its Puff
6 Detection System 107 from the opposite side of Puff
7 Detection System 107, assuming there is an ambient
8 side, right?

9 A Yeah, Thorens does not describe that.

10 Q Differential pressure sensors were known
11 in 2008, right?

12 A Yes.

13 Q And 2008 is when the Foreign Priority
14 Application for Thorens '559 was filed, according to
15 the first page of the reference?

16 A 2008, yes.

17 Q And yet the inventors of Thorens '559 do
18 not disclose the use of a pressure -- a differential
19 pressure sensor in this patent application, right?

20 MS. CAPPELLA: Objection to form.

21 THE WITNESS: I've already read
22 into the record the different types of
23 sensors that it described.

24 BY MR. MCKEE:

25 Q None of which is described as being a

1 differential pressure sensor, right?

2 A That -- those particular words are not
3 used.

4 Q And your opinion boils down to that
5 differential pressure sensors are better than
6 absolute sensors, basically, right?

7 A It depends on the applications.

8 Q And, therefore, a differential pressure
9 sensor would have been obvious over any pressure
10 sensor that Thorens uses if it's not differential,
11 right?

12 MS. CAPPELLA: Objection to form.

13 THE WITNESS: A differential
14 pressure sensor is one in which you can
15 singularly detect the difference between
16 the vacuum that's created by the puff and
17 the ambient air. So it's a single sensor
18 approach, which is a -- which I think is
19 a better approach.

20 BY MR. MCKEE:

21 Q Thorens, though, is also a single sensor
22 approach, right?

23 A That is correct.

24 Q And it's, by all indication, a functional
25 device, right?

1 A All indications, yes.

2 MR. MCKEE: We can take a break.

3 It's been about an hour.

4 THE VIDEOGRAPHER: Going off the
5 record at 5:30 p.m.

6 (Brief pause.)

7 THE VIDEOGRAPHER: We are back on
8 the record at 5:47 p.m.

9 BY MR. MCKEE:

10 Q So if you could turn for me to Figure 7
11 of Worm, which is Exhibit 9 for this deposition.
12 It's probably on the pile on the left.

13 A Okay.

14 Q You have Figure 7 up?

15 A I have it.

16 Q And it's your opinion -- I think we've
17 well established this -- that the air flow path is
18 the perimeter between the cartridge and the body,
19 right?

20 A The claim path, yes.

21 Q That's the air flow path that you're
22 relying on?

23 A That is correct.

24 Q And that is an air flow path that
25 communicates pressure from a user drawing on the

1 device via fluid communication, right?

2 A Correct.

3 Q All right. Now, the -- the air flow path
4 that you have indicated, it has these -- it has these
5 steps that go up, right, towards the --

6 A We've established that, yes.

7 Q Yeah. The pressure of a user's draw at
8 the second step is less than the pressure of the
9 user's draw at the first step, right?

10 MS. CAPPELLA: Objection to form.

11 THE WITNESS: Let's make sure that
12 we are talking about the same direction.
13 I think -- when you say first and second
14 step, you're talking about from the air
15 inlet side?

16 BY MR. MCKEE:

17 Q No. I'm talking about from -- so the
18 user's draw creates -- I guess it creates a negative
19 pressure, right?

20 A Correct.

21 Q In absolute terms, that negative pressure
22 is going to be greatest at the base of the -- right
23 near where 788 is indicated on the figure, right?

24 A Correct.

25 Q And then as you go along the air inlet

1 pathway that you've identified, the absolute value of
2 that pressure decreases, right?

3 A I would say that's correct.

4 Q And so the absolute value of the pressure
5 at the first step, from the perspective of the -- the
6 center of the device where the draw is occurring,
7 it's going to be greater than the absolute value of
8 the pressure at the second step, right?

9 A The value of the pressure is going to
10 continue to increase as you get further away from the
11 middle, from the center.

12 Q Because it's a negative number?

13 A Correct.

14 Q All right. So the absolute value
15 decreases?

16 A That's a proper way to say that, yes.