

Petitioner's Demonstratives

March 19, 2025

PTAB Oral Argument

NJOY, LLC v. JUUL LABS, INC.

IPR2024-00231 (U.S. Patent No. 10,130,123)

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

NJOY Exhibit 1053.001
NJOY v. Juul
IPR2024-00231

Challenged Independent Claims (14, 27)

27. A vaporizer device comprising:

a cartridge comprising a reservoir configured to hold a vaporizable material, a heater configured to heat the vaporizable material, and a mouthpiece in fluid communication with the heater; and

a device body comprising:

a cartridge receptacle configured to insertably receive the cartridge;

a pressure sensor configured to output sensor readings, wherein a first side of the pressure sensor is exposed to a sealed air flow path and a second side of the pressure sensor is exposed to a device air path open to ambient pressure,

the sealed air flow path comprising a channel formed between an interior surface of the cartridge receptacle and an exterior surface of the cartridge, the sealed air flow path passing from an air inlet, through the channel and to the heater and an outlet in the mouthpiece of the cartridge; and

a gasket around the pressure sensor, the gasket configured to seal the device air path from the sealed air flow path.

14. A vaporizer device body comprising:

a cartridge receptacle configured to insertably receive a cartridge containing a vaporizable material;

a pressure sensor configured to output sensor readings, wherein a first side of the pressure sensor is exposed to a sealed air flow path and a second side of the pressure sensor is exposed to a device air path open to ambient pressure,

the sealed air flow path comprising a channel formed between an interior surface of the cartridge receptacle and an exterior surface of the cartridge, the sealed air flow path passing from an air inlet, through the channel and to a heater and an outlet of a mouthpiece within the cartridge; and

a gasket around the pressure sensor, the gasket configured to seal the device air path from the sealed air flow path.

Challenged Dependent Claims (15, 16, 18, 28, 29, 31, 32)

15. The vaporizer device body of claim 14, wherein the pressure sensor comprises a capacitive membrane.

28. The vaporizer device of claim 27, wherein the pressure sensor comprises a capacitive membrane.

16. The vaporizer device body of claim 14, wherein the pressure sensor comprises a MEMS pressure sensor.

29. The vaporizer device of claim 27, wherein the pressure sensor comprises a MEMS pressure sensor.

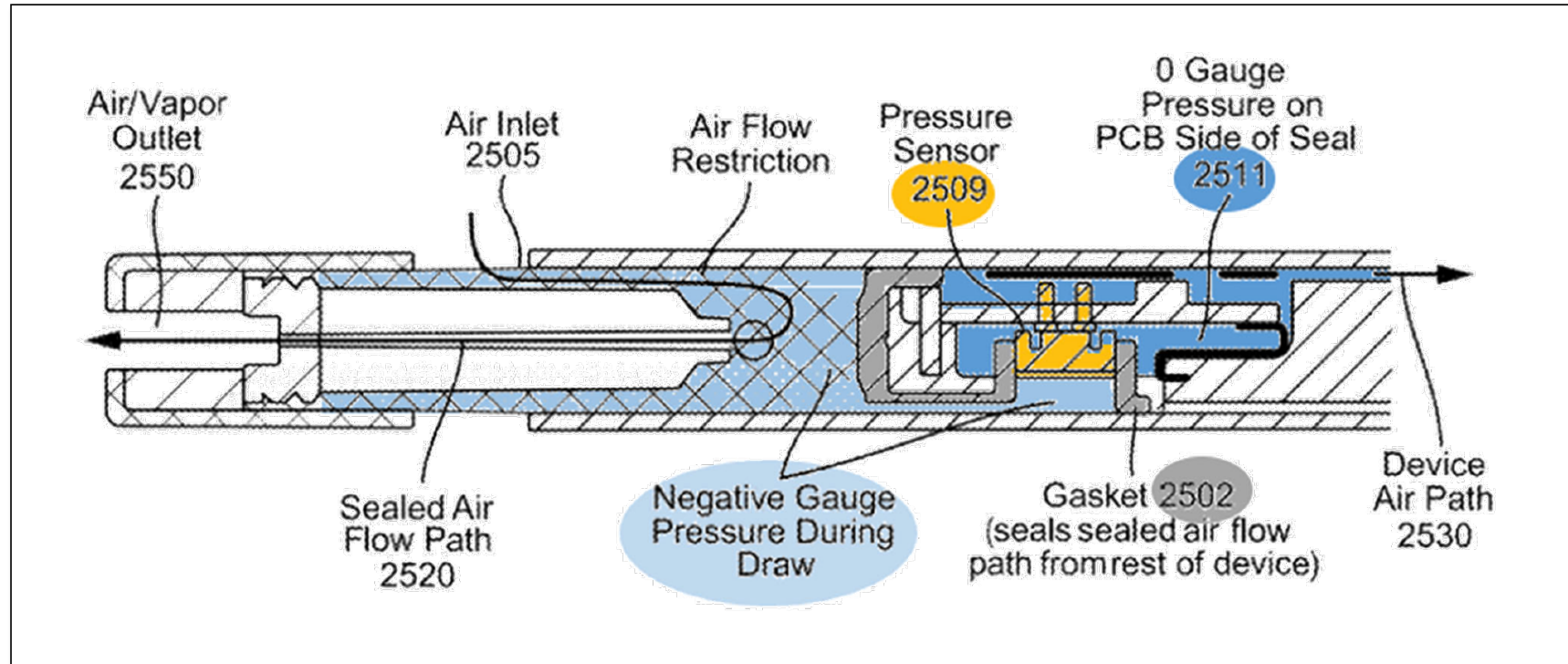
18. The vaporizer device body of claim 14, wherein the sensor readings output by the pressure sensor comprise pressure values.

31. The vaporizer device of claim 27, wherein the sensor readings output by the pressure sensor comprise pressure values.

32. The vaporizer device of claim 27, wherein the cartridge comprises the vaporizable material, and wherein the vaporizable material comprises a nicotine formulation.

Claimed Invention

'123 Patent, Figure 25



EX1001, Fig. 25

Petition at 4

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Level of Ordinary Skill in the Art

Petitioner's Proposal

A person of ordinary skill in the art ("POSA") would have at least a B.S. degree in Mechanical Engineering, Electrical Engineering, Industrial Design, Product Design, or similar field, with at least two years of industry experience in one of these fields, and such POSA would have been **familiar with electrically powered vaporizing articles, their components or the underlying technologies.**

Petition at 7

Patent Owner's Proposal

Patent Owner proposes that a POSITA at the time of the '123 patent would have had a B.S. in mechanical engineering, electrical engineering, or an equivalent degree, and either **at least two years of experience designing electro-mechanical consumer products** or an advanced degree in mechanical engineering, electrical engineering, or an equivalent field.

POR at 2

Invalidity Grounds

1

102: Worm
(claims 14, 27, 32)

2

103: Worm + knowledge of POSA
(claims 14, 27, 32)

3

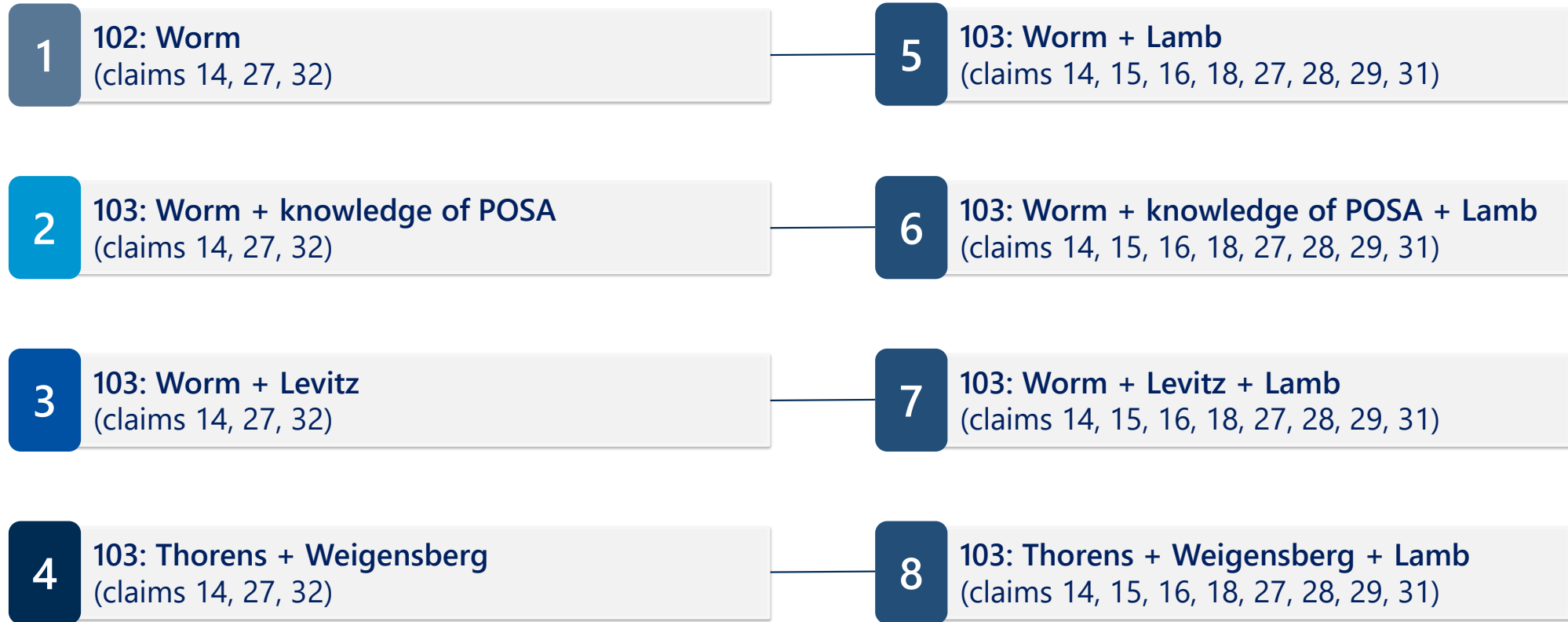
103: Worm + Levitz
(claims 14, 27, 32)

4

103: Thorens + Weigensberg
(claims 14, 27, 32)

Petition at 5-7

Invalidity Grounds



Petition at 5-7

Petitioner is not relying on disparate or mutually exclusive embodiments

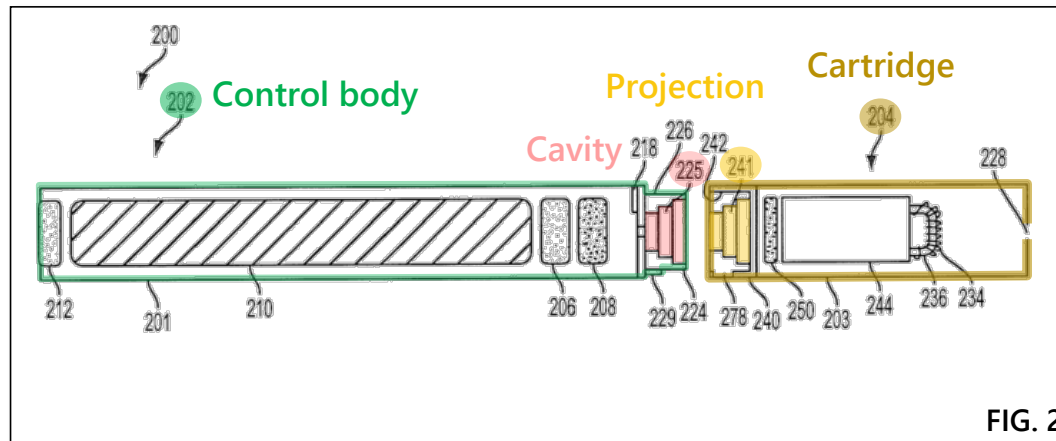


FIG. 2

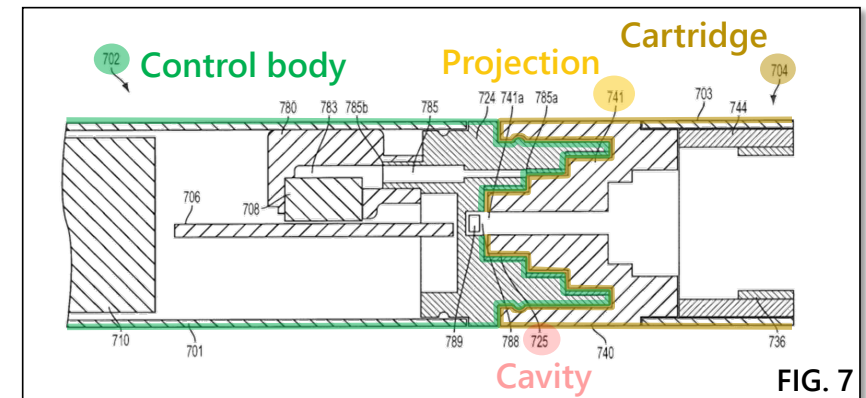
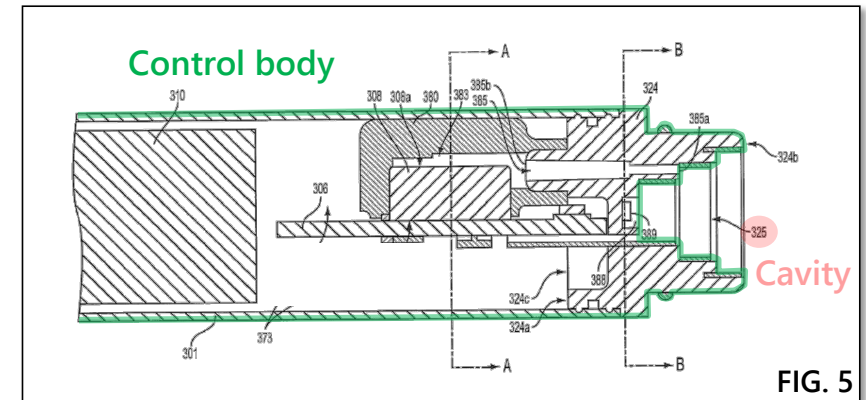
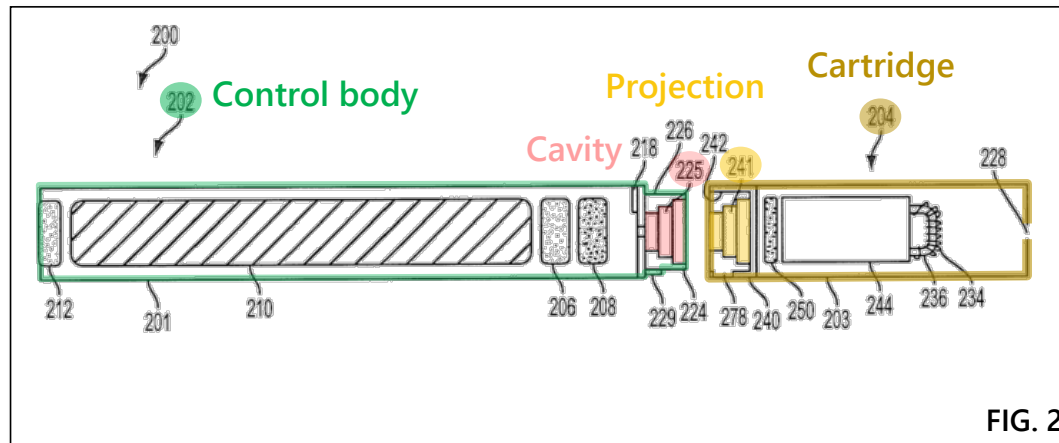
[0067] The connector end 324b of the coupler 324 has a cavity 325. The cavity 325 can be sized and shaped to receive a projection formed in the base of the cartridge (see FIG. 2).

[0073] ... The air flow pathway further can extend into a cartridge that is attached to the coupler (such as through a cartridge base, as shown in FIG. 2) and out of the cartridge ...

[0074] The spatial relationship of the air inlet channel and the first end of the pressure channel is further illustrated in FIG. 7 ... As illustrated, the cavity 725 and the projection 741 each have a stepped configuration

Petition at 13; Reply at 2-3

Petitioner is not relying on disparate or mutually exclusive embodiments

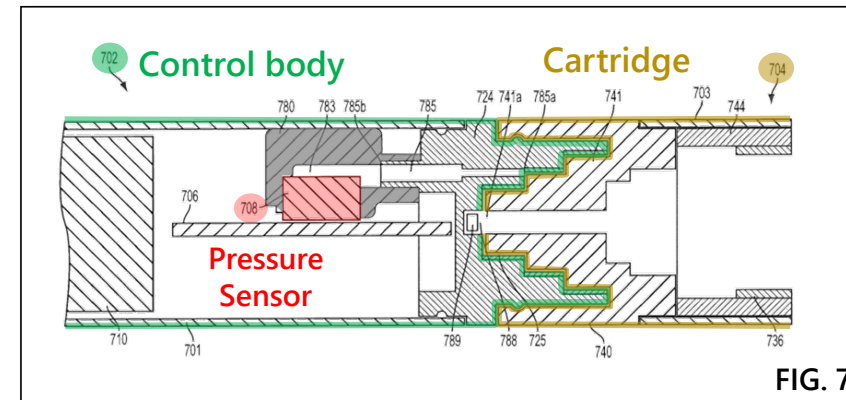
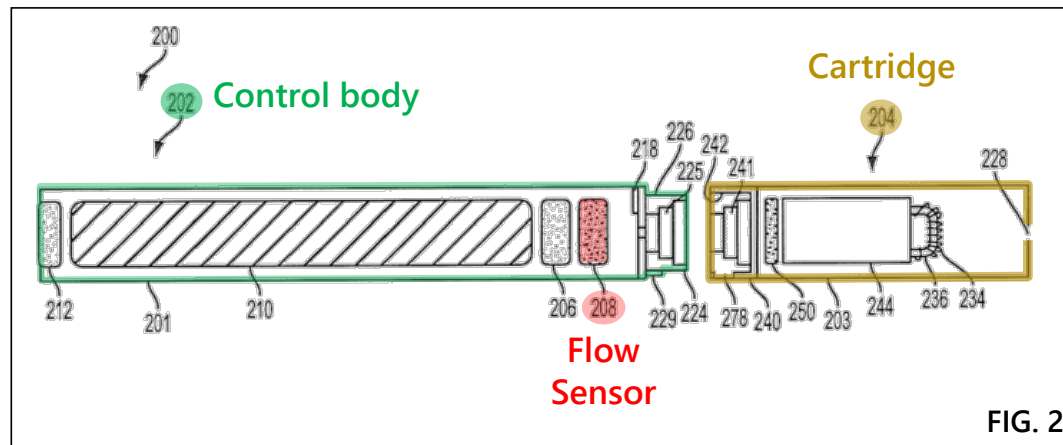


Petition at 13-15; Reply at 2-3

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

Petitioner is not relying on disparate or mutually exclusive embodiments

[0054] Although the control component 206 and the flow sensor 208 are illustrated separately, it is understood that the control component and the flow sensor may be combined as an electronic circuit board with the air flow sensor attached directly thereto. Further, the electronic circuit board may be positioned horizontally relative the illustration of FIG. 2 in that the electronic circuit board can be lengthwise parallel to the central axis of the control body.

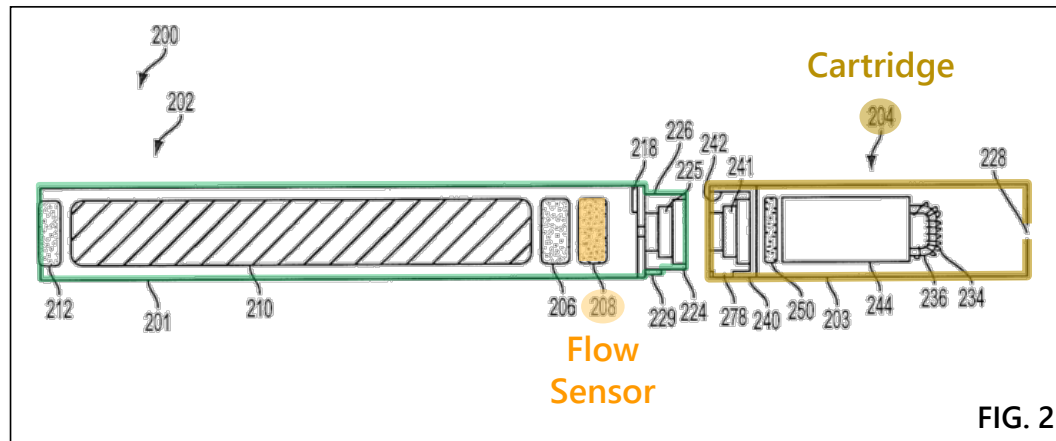


Petition at 13, 15, 31, 36; Reply at 2-4

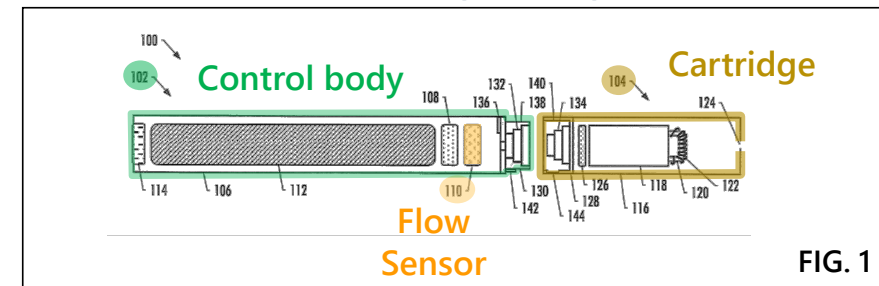
1 102: Worm

Flow Sensor 208 is not disparate or mutually exclusive from Pressure Sensor 308/708

Worm (EX1004)



Lamb (EX1005)



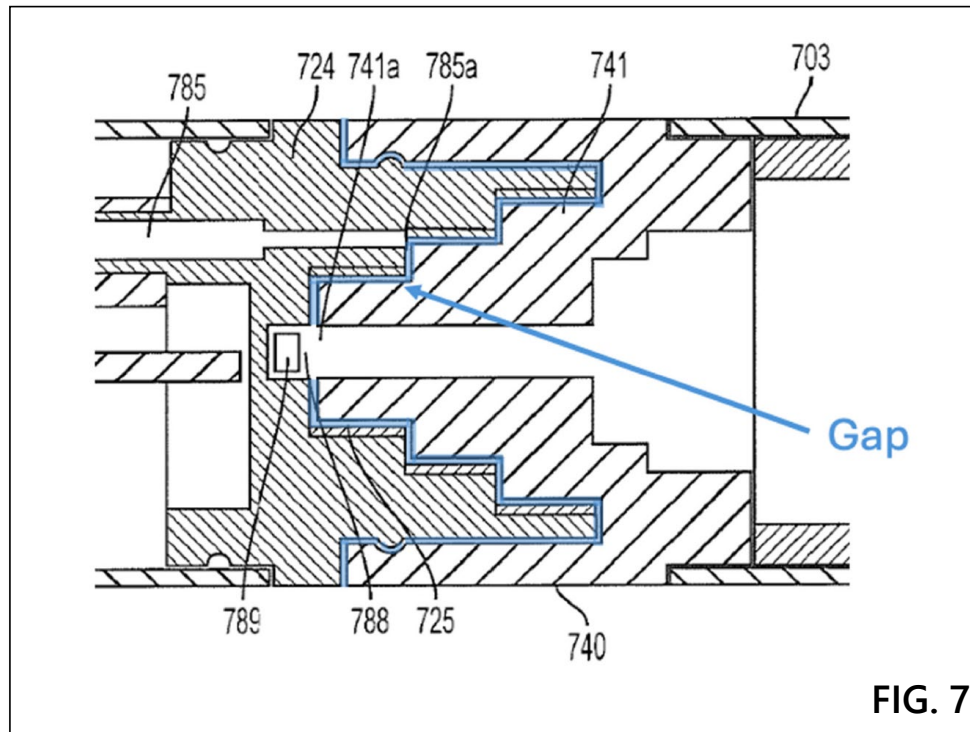
[0026] As illustrated in FIG. 1, the control body 102 can be formed of a control body shell 106 that can include a control component 108 (e.g., a microprocessor, individually or as part of a microcontroller), a flow sensor 110 . . .

[0043] Briefly returning to FIG. 1, in some examples, the flow sensor 110 may be implemented by a microelectromechanical systems-based (MEMS-based) sensor such as a MEMS microphone or MEMS pressure sensor . . .

Petition at 27-28; Reply at 4

1 102: Worm (claims 14, 27, 32)

Worm discloses a non-airtight gap between the cartridge and the control body



[0076] When draw on the device causing air to enter the air inlet channel 788 through the air inlet aperture 789 causes a pressure drop, such pressure drop is communicated to the cavity 725. The matched configuration of the cavity 725 and the projection 741 preferably does not substantially form an air tight connection therebetween. Thus, the pressure drop in the cavity 725 is likewise communicated to the pressure channel 785 from the first end 785 a to the second end 785 b and thus the pressure reduction space 783.

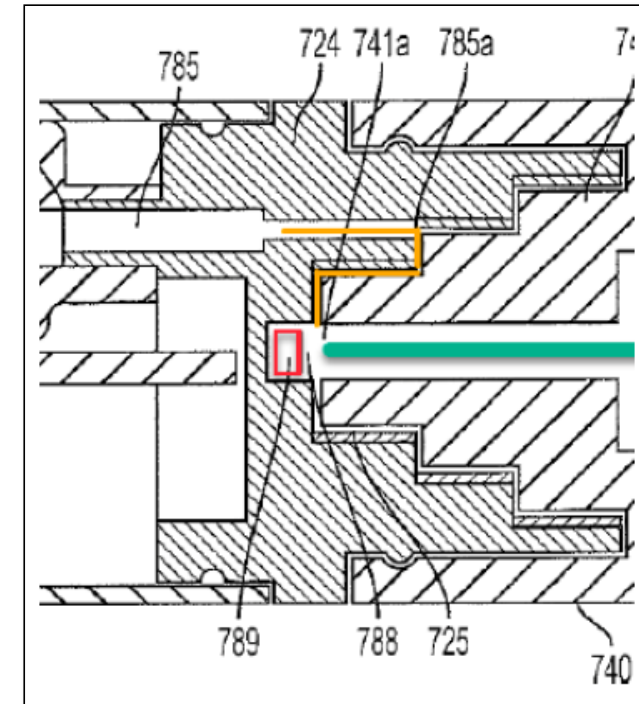
Petition at 15, 36, 40-41; Reply at 7

Worm discloses a non-airtight gap between the cartridge and the control body

Patent Owner's Expert

5 Now, with that said, the patent very
6 clearly says that there needs to be a non-airtight
7 connection between the inlet 789 and the inlet to the
8 pressure tap. I think that's 785A. You need to be
9 able to communicate the pressure that's in the -- at
10 the point of 789 to the pressure sensor.

EX1040 at 70:5-10



POR at 65 (citing EX1004, Fig. 7)

Reply at 5-6

1 102: Worm

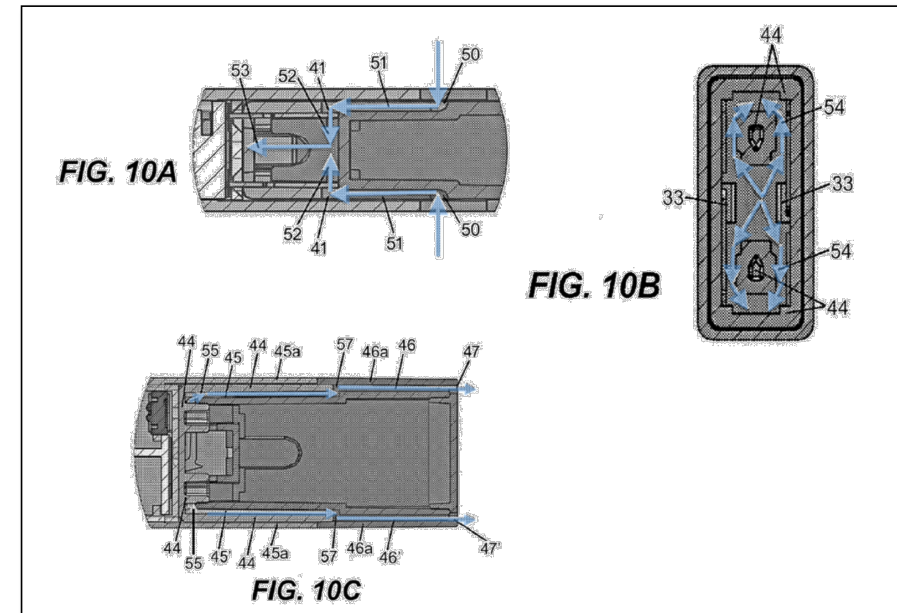
Patent Owner's Arguments Fail to Rebut the Disclosure in Worm

Patent Owner

"In addition, a POSITA would consider the winding path alleged by Petitioners to be ineffective for providing a controlled airflow . . ."

POR at 63

'123 Patent, Figure 10



Ex. 1043 at ¶ 33 (citing EX1001, Fig. 10)

Reply at 9-10

Patent Owner's Arguments Fail to Rebut the Disclosure in Worm

Patent Owner

"... a POSITA would understand that "labyrinth seals," which use pathways such as shown in Worm, could be used to seal connections from fluids. Ex. 2053, ¶53. Labyrinth seals are just one type of mechanical seal that prevents airflow through a connection between components ..."

POR at 65

Worm

[0076] ... such pressure drop is communicated to the cavity 725. The matched configuration of the cavity 725 and the projection 741 preferably does not substantially form an air tight connection therebetween.

Mark's Standard Handbook for Mechanical Engineers

For extremely high speeds, where it is desirable to eliminate all rubbing contact, the labyrinth seal (Fig. 25) is chosen. This seal is not fluid-tight

EX1041 at 21

Reply at 5, 9

1 102: Worm

Patent Owner's Arguments Fail to Rebut the Disclosure in Worm

Patent Owner

"Specifically, a POSITA would understand that when a user inhales on the mouthpiece of the cartridge 704, the control body 702 and cartridge 704 will be pulled together to form a seal, as the Board recognized.... The resulting negative pressure event is detected by the pressure sensor 708, because it is in fluid communication with the cavity 725 through the pressure channel 785. However, airflow through the alleged gap would be substantially limited by this sealing action."

POR at 66-67

Worm

[0076] When draw on the device causing air to enter the air inlet channel 788 through the air inlet aperture 789 causes a pressure drop, such pressure drop is communicated to the cavity 725. The matched configuration of the cavity 725 and the projection 741 preferably does not substantially form an air tight connection therebetween. Thus, the pressure drop in the cavity 725 is likewise communicated to the pressure channel 785 from the first end 785 a to the second end 785 b and thus the pressure reduction space 783.

Petition at 36; Reply at 11-12

Patent Owner's Arguments Fail to Rebut the Disclosure in Worm

PO Expert Decl.

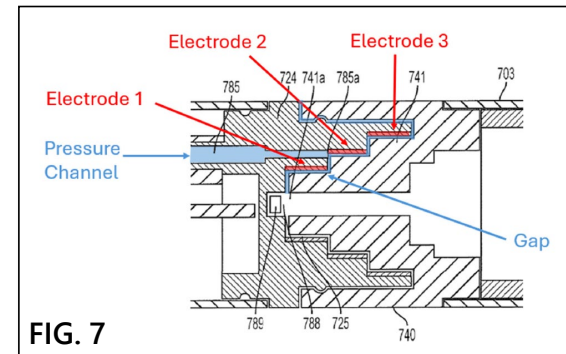
"As such, portions of the electrical contacts in the battery portion (361, 362, and 363) must touch the corresponding contacts in the cartridge. I understand the Board acknowledged that the **electrical contacts touching would prevent airflow in the gap.**"

EX2053 at 56

PO Expert Deposition

7 Q. Okay. So between -- with respect to the
8 electric contacts that are closest to the air inlet
9 789, you'd agree that when the band on the control
10 body engages the band on the projection, it does not
11 create a seal that prevents air flow, correct?
12 A. That's correct. It need not be an
13 airtight seal. It shouldn't be an airtight seal.

EX1040 at 71:7-13



Reply at 10-11

1 102: Worm (claims 14, 27)

27. A vaporizer device comprising:

a cartridge comprising a reservoir configured to hold a vaporizable material, a heater configured to heat the vaporizable material, and a mouthpiece in fluid communication with the heater; and

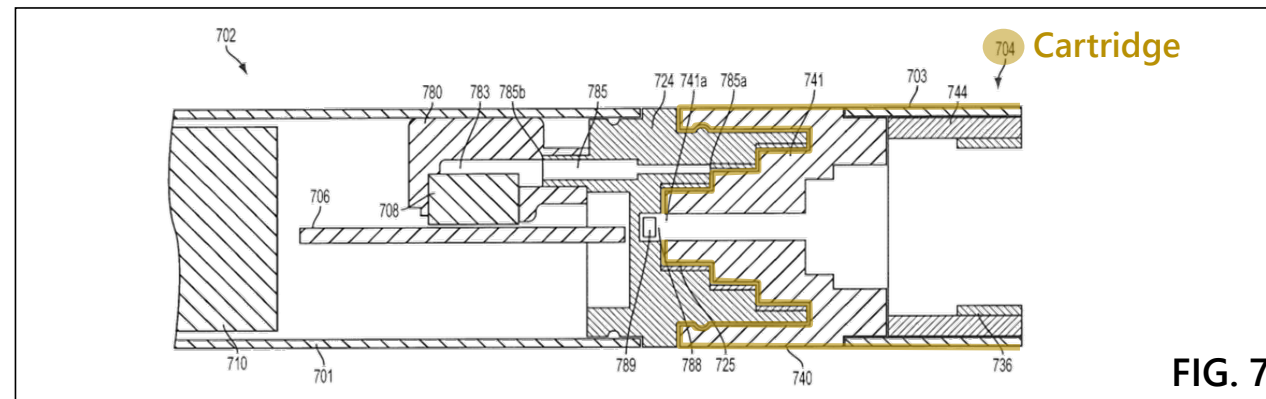
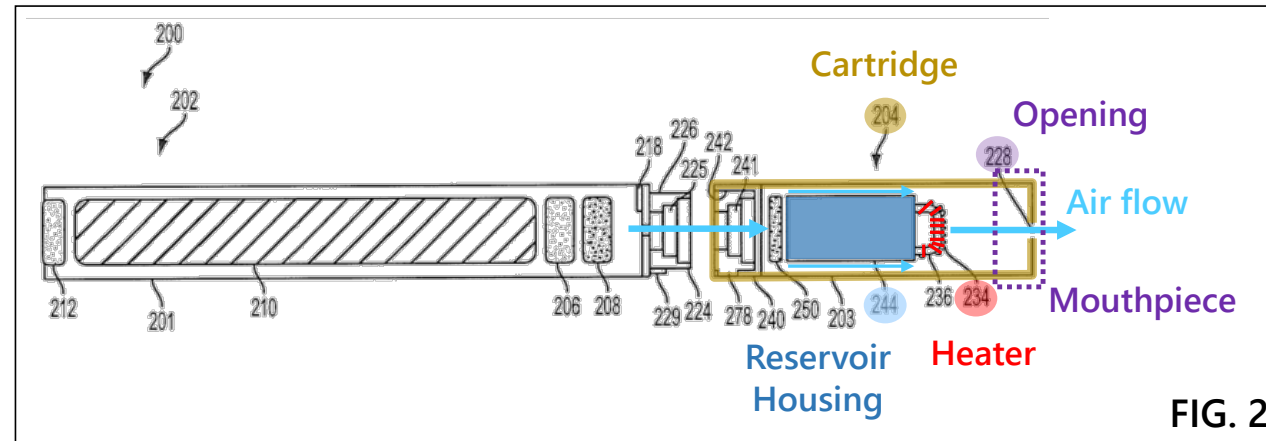
a device body comprising:

a cartridge receptacle configured to insertably receive the cartridge;

a pressure sensor configured to output sensor readings, wherein a first side of the pressure sensor is exposed to a sealed air flow path and a second side of the pressure sensor is exposed to a device air path open to ambient pressure,

the sealed air flow path comprising a channel formed between an interior surface of the cartridge receptacle and an exterior surface of the cartridge, the sealed air flow path passing from an air inlet, through the channel and to the heater and an outlet in the mouthpiece of the cartridge; and

a gasket around the pressure sensor, the gasket configured to seal the device air path from the sealed air flow path.



Petition at 13-15, 47; Reply at 2-3

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102: Worm (claims 14, 27)

27. A vaporizer device comprising:

a cartridge comprising a reservoir configured to hold a vaporizable material, a heater configured to heat the vaporizable material, and a mouthpiece in fluid communication with the heater; and

a device body comprising:

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a pressure sensor configured to output sensor readings, wherein a first side of the pressure sensor is exposed to a sealed air flow path and a second side of the pressure sensor is exposed to a device air path open to ambient pressure,

the sealed air flow path comprising a channel formed between an interior surface of the cartridge receptacle and an exterior surface of the cartridge, the sealed air flow path passing from an air inlet, through the channel and to the heater and an outlet in the mouthpiece of the cartridge; and

a gasket around the pressure sensor, the gasket configured to seal the device air path from the sealed air flow path.

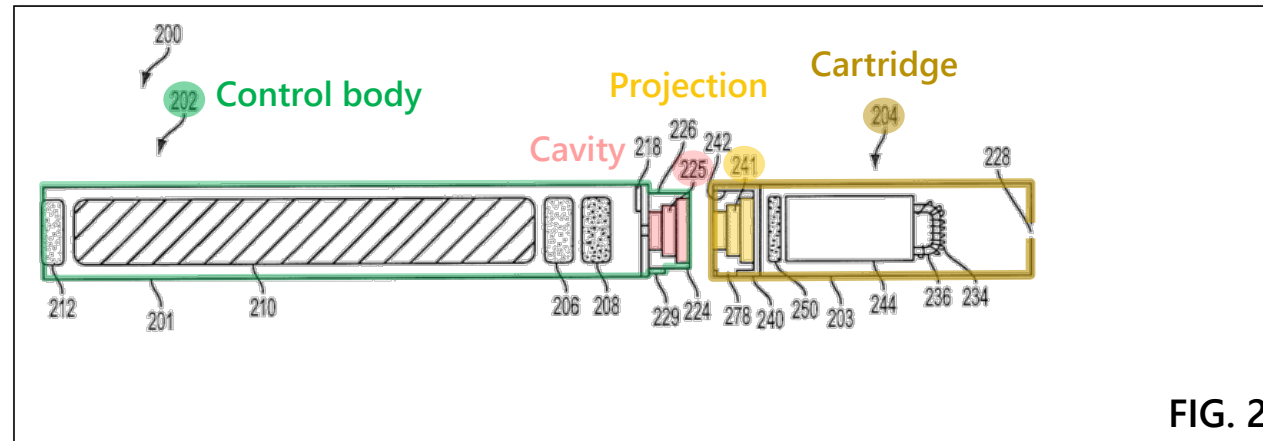


FIG. 2

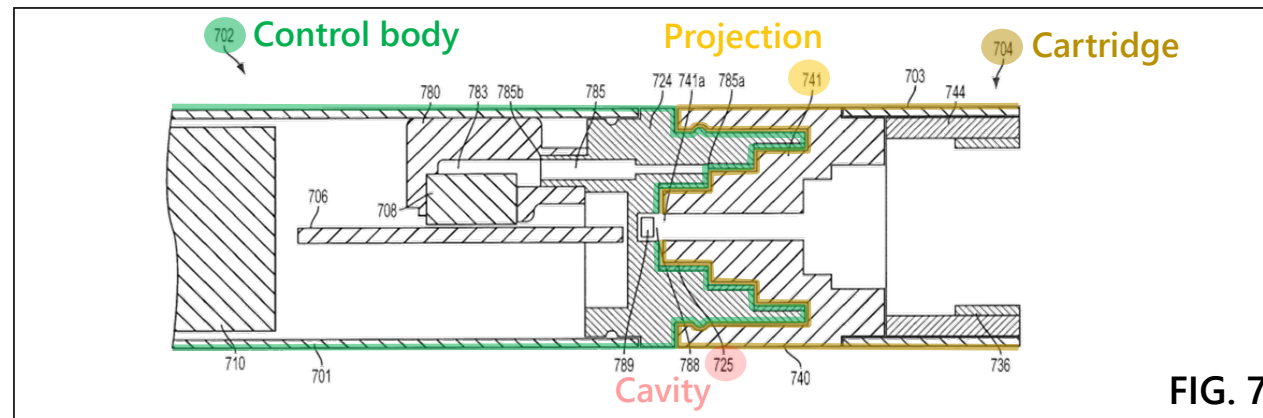


FIG. 7

Petition at 13-15, 31, 48; Reply at 2-3

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

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102: Worm (claims 14, 27)

27. A vaporizer device comprising:

a cartridge comprising a reservoir configured to hold a vaporizable material, a heater configured to heat the vaporizable material, and a mouthpiece in fluid communication with the heater; and

a device body comprising:

a cartridge receptacle configured to insertably receive the cartridge;

a pressure sensor configured to output sensor readings, wherein a first side of the pressure sensor is exposed to a sealed air flow path and a second side of the pressure sensor is exposed to a device air path open to ambient pressure,

the sealed air flow path comprising a channel formed between an interior surface of the cartridge receptacle and an exterior surface of the cartridge, the sealed air flow path passing from an air inlet, through the channel and to the heater and an outlet in the mouthpiece of the cartridge; and

a gasket around the pressure sensor, the gasket configured to seal the device air path from the sealed air flow path.

[0054] Although the control component 206 and the flow sensor 208 are illustrated separately, it is understood that the control component and the flow sensor may be combined as an electronic circuit board with the air flow sensor attached directly thereto. Further, the electronic circuit board may be positioned horizontally relative the illustration of FIG. 2 in that the electronic circuit board can be lengthwise parallel to the central axis of the control body.

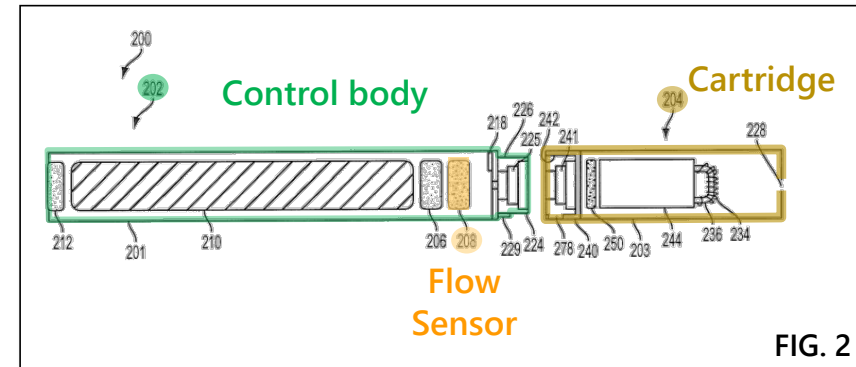


FIG. 2

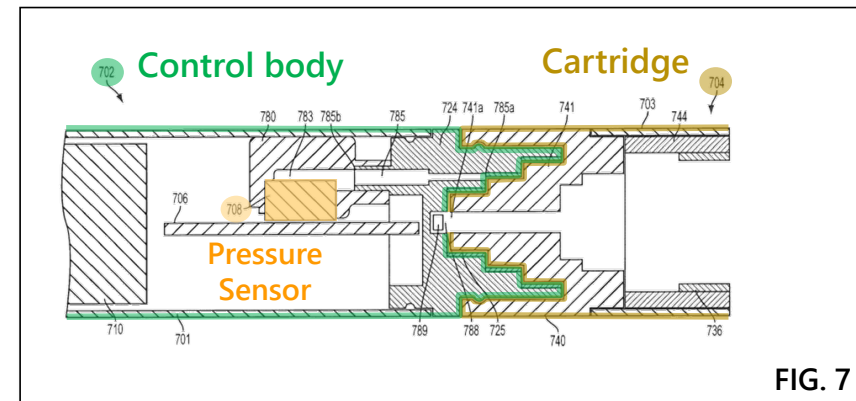


FIG. 7

Petition at 13-15, 31, 36, 48; Reply at 2-3

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102: Worm (claims 14, 27)

27. A vaporizer device comprising:

a cartridge comprising a reservoir configured to hold a vaporizable material, a heater configured to heat the vaporizable material, and a mouthpiece in fluid communication with the heater; and

a device body comprising:

a cartridge receptacle configured to insertably receive the cartridge;

a pressure sensor configured to output sensor readings, wherein a first side of the pressure sensor is exposed to a sealed air flow path and a second side of the pressure sensor is exposed to a device air path open to ambient pressure,

the sealed air flow path comprising a channel formed between an interior surface of the cartridge receptacle and an exterior surface of the cartridge, the sealed air flow path passing from an air inlet, through the channel and to the heater and an outlet in the mouthpiece of the cartridge; and

a gasket around the pressure sensor, the gasket configured to seal the device air path from the sealed air flow path.

[0046] An exemplary mechanism that can provide puff-actuation capability includes a Model 163PC01D36 silicon sensor, manufactured by the MicroSwitch division of Honeywell, Inc., Freeport, Ill.

EX1004 (Worm)

Installation Instructions for 160PC Low Pressure Sensors

PK 87724

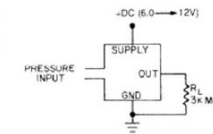
GENERAL INFORMATION

160PC sensors provide an output voltage proportional to applied pressure. They operate from a single, positive supply voltage ranging from 6.0 to 12 VDC. Signal conditioning results in directly usable outputs. Temperature compensation provides predictable performance over specified temperature ranges.

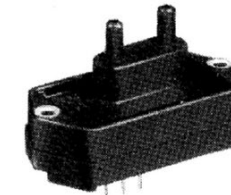
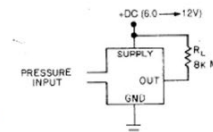
MEASURAND COMPATIBILITY

P2 Wetted materials: polyester housing, epoxy adhesive, silicon, borosilicate-glass, silicon-to-glass bond (passive side of IC)*

ELECTRICAL AND PRESSURE CONNECTIONS Current Source



Current Sink



PRESSURE REFERENCE

Differential pressure sensors apply P1 to the active (connection) side of the chip and P2 to the passive side.

Gage pressure is measured with respect to atmospheric (room) pressure reference.

EX1026

Petition at 13-15, 33, 36, 48; Reply at 2-3

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

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102: Worm (claims 14, 27)

27. A vaporizer device comprising:

a cartridge comprising a reservoir configured to hold a vaporizable material, a heater configured to heat the vaporizable material, and a mouthpiece in fluid communication with the heater; and

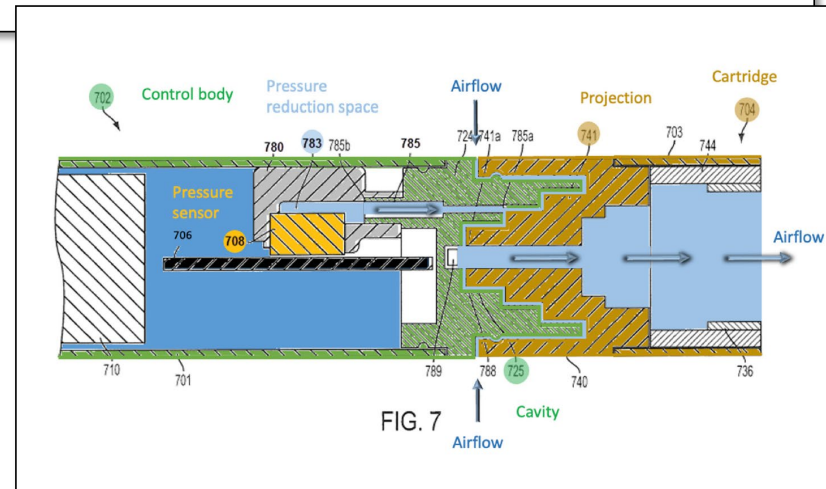
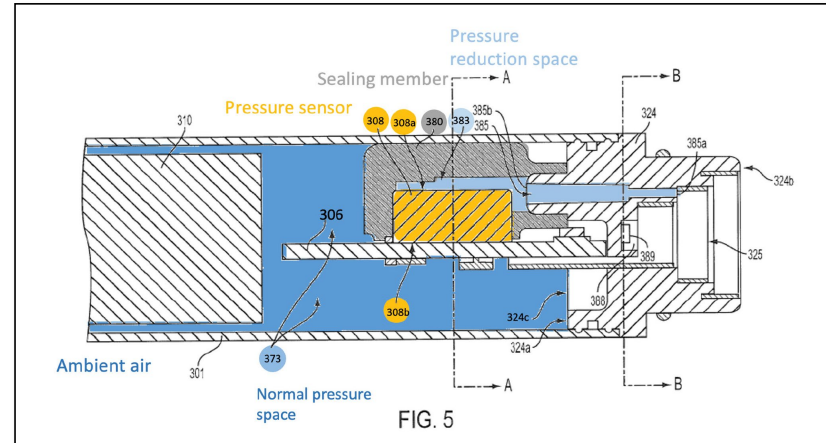
a device body comprising:

a cartridge receptacle configured to insertably receive the cartridge;

a pressure sensor configured to output sensor readings, **wherein a first side of the pressure sensor is exposed to a sealed air flow path and a second side of the pressure sensor is exposed to a device air path open to ambient pressure,**

the sealed air flow path comprising a channel formed between an interior surface of the cartridge receptacle and an exterior surface of the cartridge, the sealed air flow path passing from an air inlet, through the channel and to the heater and an outlet in the mouthpiece of the cartridge; and

a gasket around the pressure sensor, the gasket configured to seal the device air path from the sealed air flow path.



[0064] In the embodiment illustrated in FIG. 5, a first end 308a of the pressure sensor 308 can be positioned to be in fluid communication with the pressure reduction space 383, and a second end 308b of the pressure sensor can be positioned to be in fluid communication with the normal pressure space 373. In some embodiments, the pressure reduction space can be defined by a sealing member 380.

Petition at 13-15, 34-36, 48; Reply at 2-3

1

102: Worm (claims 14, 27)

27. A vaporizer device comprising:

a cartridge comprising a reservoir configured to hold a vaporizable material, a heater configured to heat the vaporizable material, and a mouthpiece in fluid communication with the heater; and

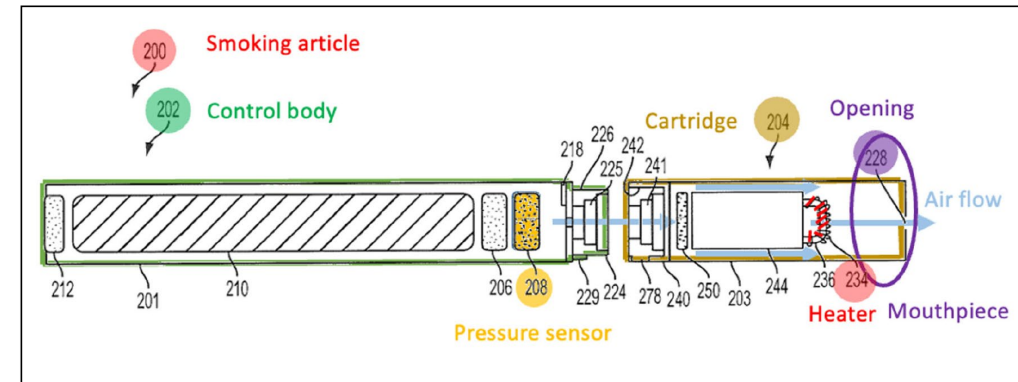
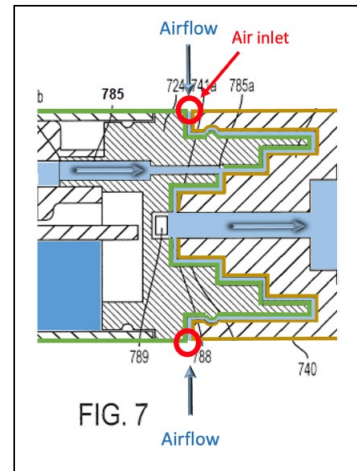
a device body comprising:

a cartridge receptacle configured to insertably receive the cartridge;

a pressure sensor configured to output sensor readings, wherein a first side of the pressure sensor is exposed to a sealed air flow path and a second side of the pressure sensor is exposed to a device air path open to ambient pressure,

the sealed air flow path comprising a channel formed between an interior surface of the cartridge receptacle and an exterior surface of the cartridge, the sealed air flow path passing from an air inlet, through the channel and to the heater and an outlet in the mouthpiece of the cartridge; and

a gasket around the pressure sensor, the gasket configured to seal the device air path from the sealed air flow path.



[0076] When draw on the device causing air to enter the air inlet channel 788 through the air inlet aperture 789 causes a pressure drop, such pressure drop is communicated to the cavity 725. The matched configuration of the cavity 725 and the projection 741 preferably does not substantially form an air tight connection therebetween. Thus, the pressure drop in the cavity 725 is likewise communicated to the pressure channel 785 from the first end 785 a to the second end 785 b and thus the pressure reduction space 783.

Petition at 13-15, 40-44, 48; Reply at 2-3

1 102: Worm (claims 14, 27)

27. A vaporizer device comprising:

a cartridge comprising a reservoir configured to hold a vaporizable material, a heater configured to heat the vaporizable material, and a mouthpiece in fluid communication with the heater; and

a device body comprising:

a cartridge receptacle configured to insertably receive the cartridge;

a pressure sensor configured to output sensor readings, wherein a first side of the pressure sensor is exposed to a sealed air flow path and a second side of the pressure sensor is exposed to a device air path open to ambient pressure,

the sealed air flow path comprising a channel formed between an interior surface of the cartridge receptacle and an exterior surface of the cartridge, the sealed air flow path passing from an air inlet, through the channel and to the heater and an outlet in the mouthpiece of the cartridge; and

a gasket around the pressure sensor, the gasket configured to seal the device air path from the sealed air flow path.

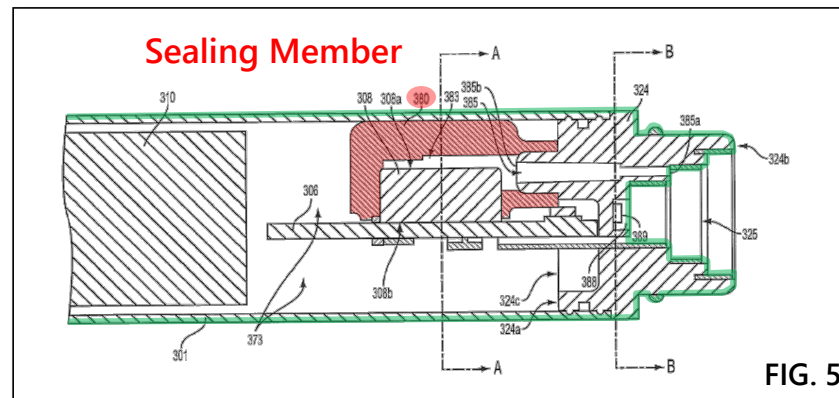


FIG. 5

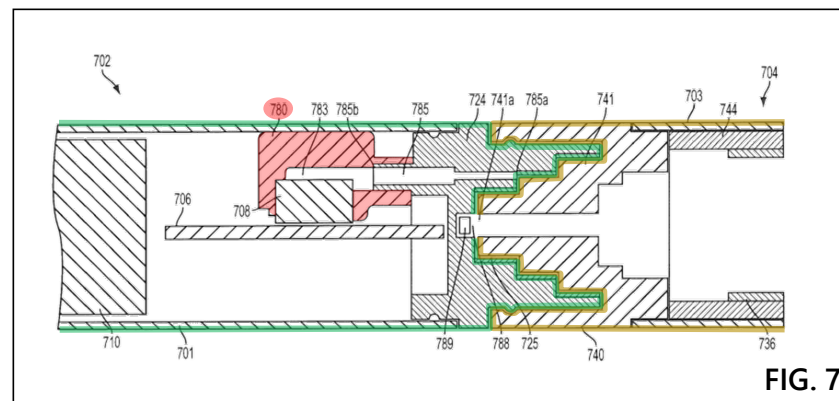


FIG. 7

[0064] . . . For example, the sealing member can comprise a silicone rubber or like material. In some embodiments, the sealing member may be a cup seal. The sealing member 380 can substantially surround the perimeter of the pressure sensor 308 and be in a sealing contact therewith.

Petition at 13-15, 45-46, 48; Reply at 2-3

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102: Worm (claim 32)

32. The vaporizer device of claim 27, wherein the cartridge **comprises the vaporizable material, and wherein the vaporizable material comprises a nicotine formulation.**

Worm (EX1004)

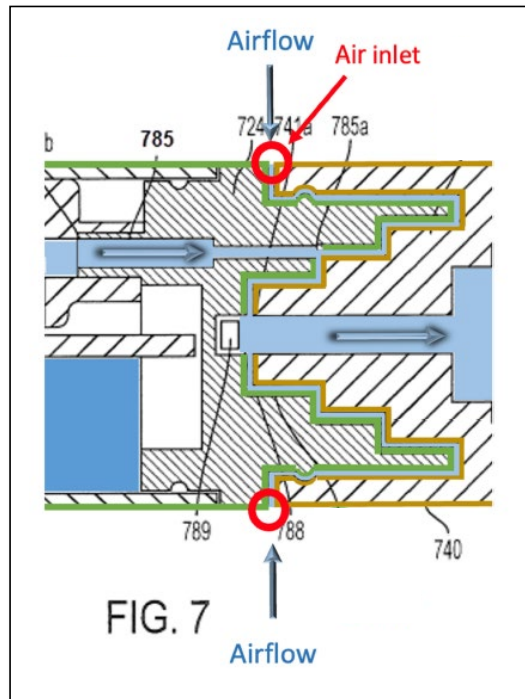
[0029] . . . Exemplary formulations for aerosol precursor materials that may be used according to the present disclosure are described in U.S. Pat. Pub. No. 2013/0008457 to Zheng et al. and U.S. patent application Ser. No. 13/536,438 to Sebastian et al., filed Jun. 28, 2012, the disclosures of which are incorporated herein by reference in their entirety.

Sebastian (EX1008)

[0056] Further tobacco materials, such as a tobacco aroma oil, a tobacco essence, a spray dried tobacco extract, a freeze dried tobacco extract, tobacco dust, or the like can be combined with the vapor precursor or aerosol precursor composition . . . As such, exemplary preferred tobacco extracts possess less than 45 percent nicotine, often less than 35 percent nicotine, and frequently less than 25 percent nicotine, on the basis of the total extract weight with solvent removed (e.g., on a dry weight basis when the solvent is water).

Petition at 49

POSA would be motivated to have air inlets at the periphery



Petitioner's Expert

However, for embodiments in which the air inlet apertures and the air inlet channel 788 are not used, ambient air enters through the periphery at the interface connection because it is the only source of ambient air in Worm, as shown in Figure 7. Otherwise, a vacuum would be created in the device rendering the device nonfunctional if there are no external air sources when a smoker draws on the device.

EX1003 at ¶158

PO Expert Deposition

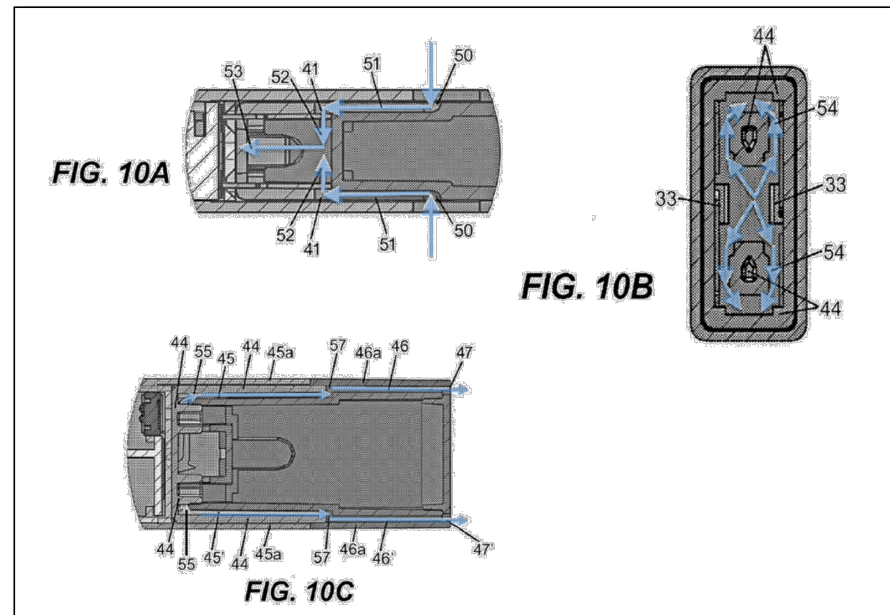
7 Q. Okay. And would a person of ordinary
8 skill have recognized that it would be desirable to
9 have multiple air inlets to help minimize the risk
10 that there was clogging or blocking of one of them?
11 A. That's one way of handling it. But again,
12 if you've got multiple air inlets and you're trying
13 to control the drop and you start making those holes
14 smaller, that's when the tolerancing issue becomes
15 more and more problematic. So there are trade-offs
16 that are associated with that.

EX1040 at 105:7-15

Petition at 50-51; Reply at 16-17

POSA knows how to size the channel to achieve desired airflow

'123 Patent, Figure 10



PO Expert Deposition

Q. ... [A]re you able to determine what the draw resistance is based on the disclosure of the '123 patent?

A. You can't -- you don't take these -- these are not engineering drawings. They're illustrations so a person of ordinary skill in the art would know to modify the size of those passages to create a resistance that is -- results in a pleasant use cigarette, e-cigarette.

Q. Okay. And with respect to the device that's described in the '123 patent, a person of ordinary skill in the art would have to figure out how to size the passages we just talked about to achieve whatever draw resistance they wanted, right?

A. Yeah, they would, but it's a pretty straightforward analysis when you've got fixed geometries. Certainly if the geometries weren't fixed or variable, then that would be -- that would be a challenge because it would change from time to time. But here, all the channels are mechanically set.

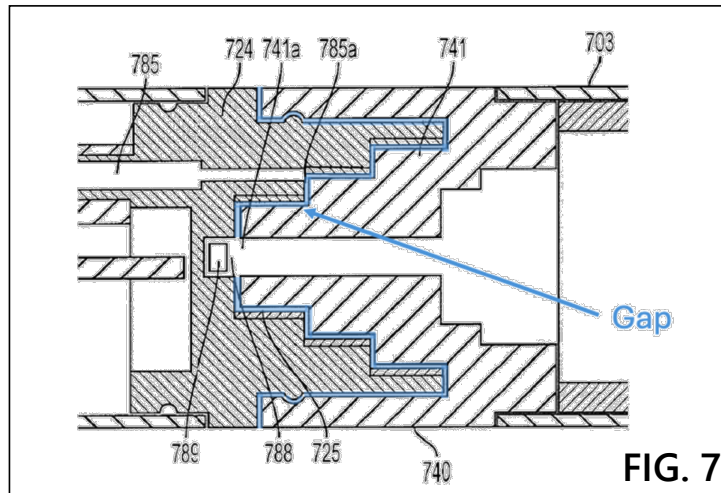
EX1040 at 42:2-43:7

Reply at 15, 17

Worm teaches non-airtight gap at the cartridge/control body interface

Worm (EX1004)

[0076] When draw on the device causing air to enter the air inlet channel 788 through the air inlet aperture 789 causes a pressure drop, such pressure drop is communicated to the cavity 725. The matched configuration of the cavity 725 and the projection 741 preferably does not substantially form an air tight connection therebetween.



Institution Decision

Based on the information presented in the Petition, we are persuaded that Petitioner demonstrates a reasonable likelihood of prevailing at trial in showing that claims 14 and 27 of the '123 patent are unpatentable as obvious based on Worm and Levitz. Because Worm discloses a non-airtight gap and Levitz discloses airflow from the periphery of the device between the battery and the cartridge, we are persuaded, for the purposes of institution, that an ordinary artisan would have had reason to modify Worm in view of Levitz to render obvious limitations [14.E], [14.F], [27.G], and [27.H] for the reasons asserted by Petitioner. At this stage, Patent Owner's arguments to the contrary are unavailing because they are directed to Worm's airflow and backflow rather than Petitioner's proposed combination of Worm and Levitz.

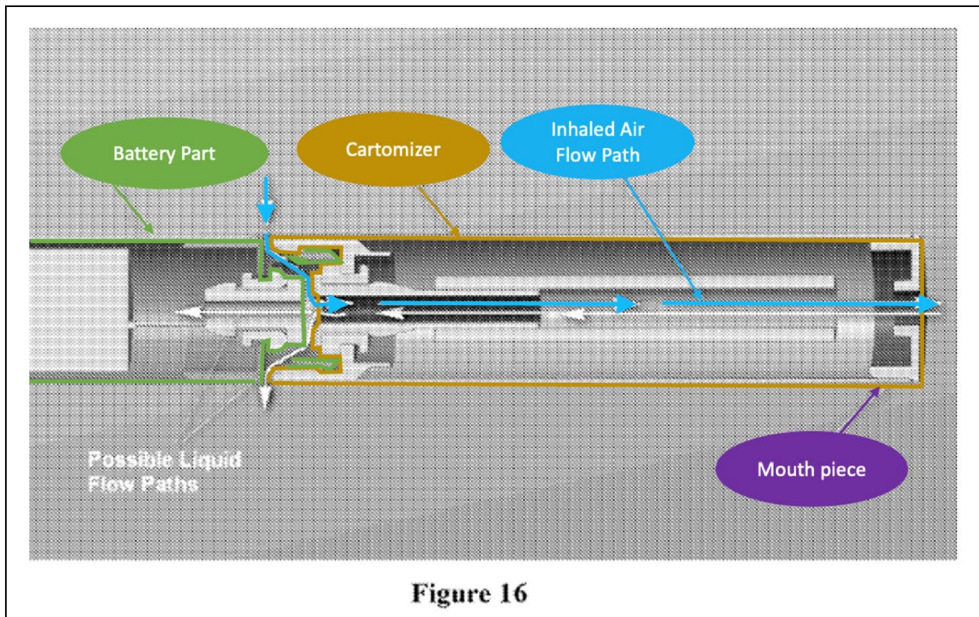
Paper No. 15 at 32

Petition at 56, 60; Reply at 7

3 103: Worm in view of Levitz

Levitz teaches airflow from the periphery of the device between the battery and cartridge

Levitz (EX1010)



Institution Decision

Based on the information presented in the Petition, we are persuaded that Petitioner demonstrates a reasonable likelihood of prevailing at trial in showing that claims 14 and 27 of the '123 patent are unpatentable as obvious based on Worm and Levitz. Because Worm discloses a non-airtight gap and Levitz discloses airflow from the periphery of the device between the battery and the cartridge, we are persuaded, for the purposes of institution, that an ordinary artisan would have had reason to modify Worm in view of Levitz to render obvious limitations [14.E], [14.F], [27.G], and [27.H] for the reasons asserted by Petitioner. At this stage, Patent Owner's arguments to the contrary are unavailing because they are directed to Worm's airflow and backflow rather than Petitioner's proposed combination of Worm and Levitz.

Paper No. 15 at 32

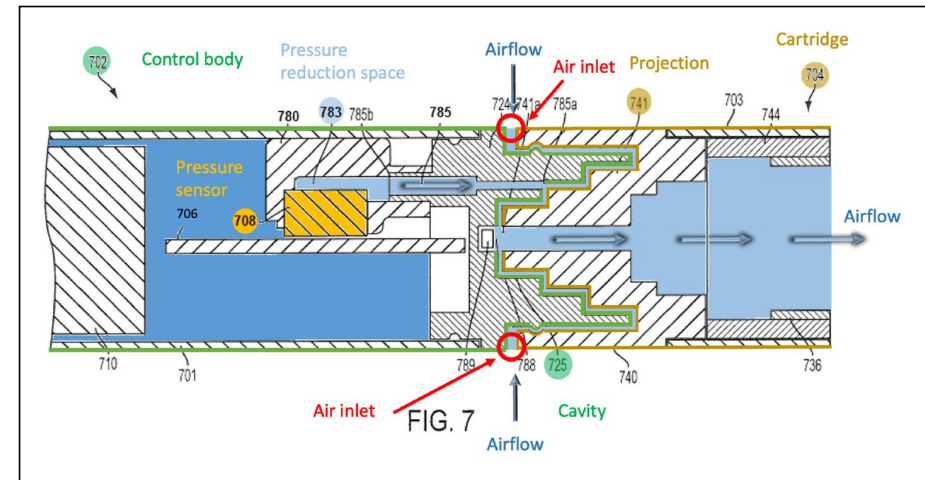
Petition at 52-53

3 103: Worm in view of Levitz

Proposed Modification of Worm in View of Levitz

To the extent there is any argument that Worm does not disclose air entering at the interface between control body 702 and cartridge 704, it would have been obvious to a POSA to modify Worm in view of Levitz. Specifically, a POSA would have modified Worm so that outside air enters at the interface between the battery and cartridge connection.¹¹ Note, a POSA would have understood that the air inlet can be anywhere along the connection interface. *See* EX1007, 4:41-43 (“The air inlet openings 16 can be located elsewhere on the electronic cigarette 2, and is a matter of design choice.”). EX1003, ¶¶168-169.

Petition at 56

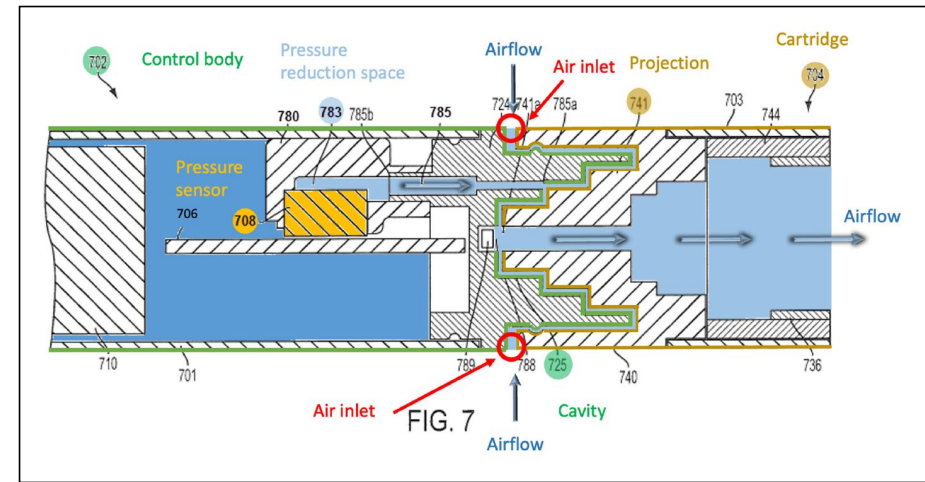


Petition at 56; EX1003 at ¶¶168-169

3 103: Worm in view of Levitz

Motivations to Combine

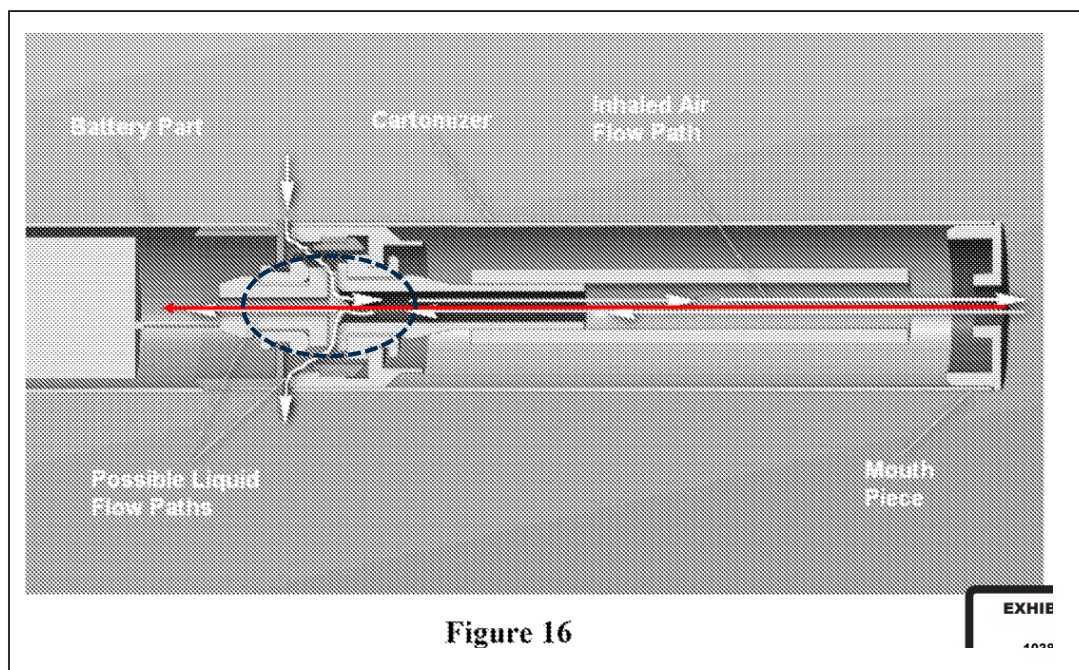
- Provides additional pathway for vapor backflow to exit rather than into the pressure reduction space of the control body
- Air channel is exposed when cartridge and control body are separated, which allows for cleaning of built-up residue
- Multiple air inlets allows device to function if an air inlet is clogged or blocked



Petition at 58-59; EX1003 at ¶¶172-173; Reply at 20-21; EX1043 at ¶¶52-53; EX1040 at 105:2-16

3 103: Worm in view of Levitz

PO's Argument: "This is because Levitz expressly teaches that this Figure 16 embodiment has backflow issues, which is in direct opposition to Petitioner's motivation to 'include[] additional pathways for any vapor that backflows.'" (POR at 8)



Levitz backflow in Figure 16 is due to the direct alignment between the pressure reduction channel and the cartridge air flow path

Reply at 21; EX1043 at 11150, 55; EX1040 at 88:21-90:5, 91:2-11

3 103: Worm in view of Levitz

PO's Argument: "Instead Levitz provides a different embodiment in Figures 17 and 18 that is 'designed to minimize this problem.'" (POR at 9)

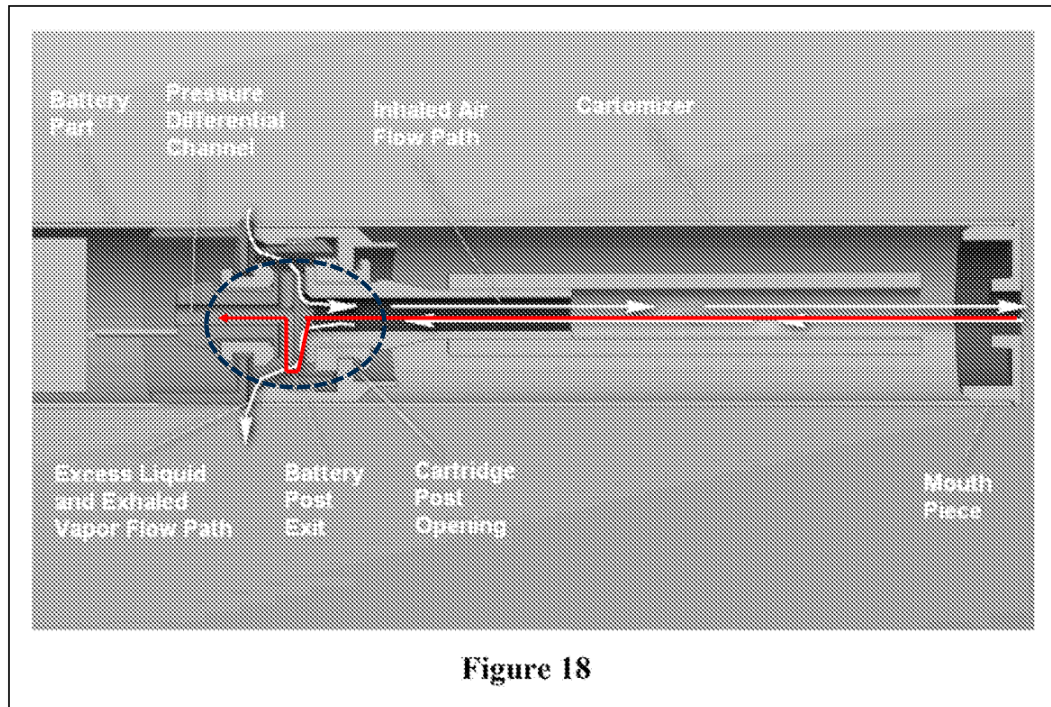


Figure 18 does not have direct alignment between the pressure reduction space and the cartridge air flow path, and minimizes backflow

Reply at 21; EX1043 at 1151, 55

3 103: Worm in view of Levitz

PO's argument does not address the proposed combination of Worm and Levitz

The Worm + Levitz combination does not have direct alignment between the pressure reduction channel and the cartridge airflow path

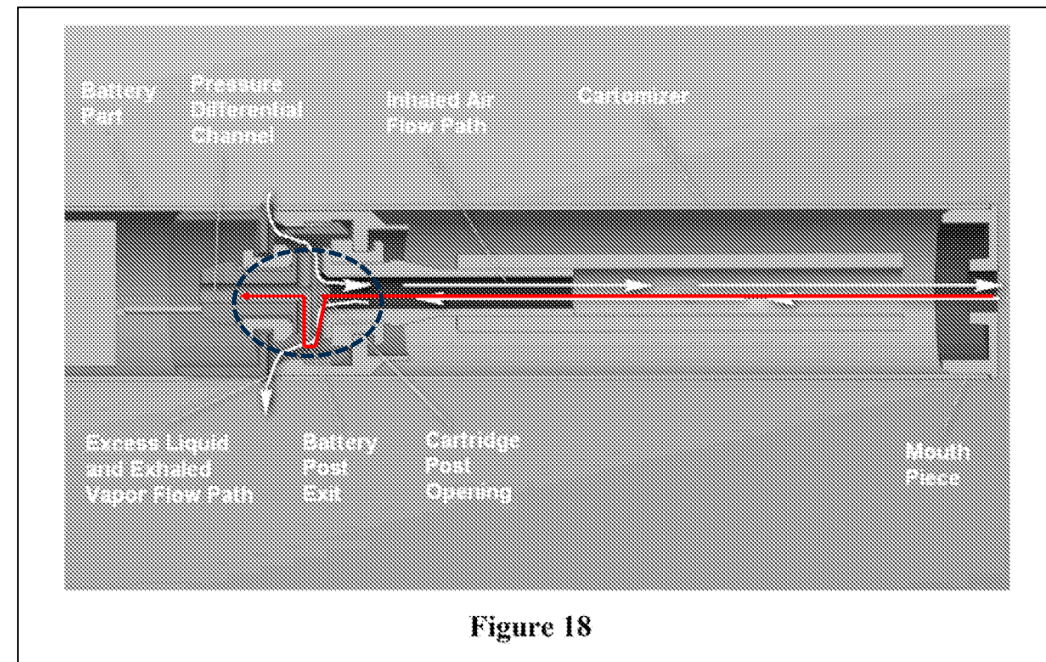
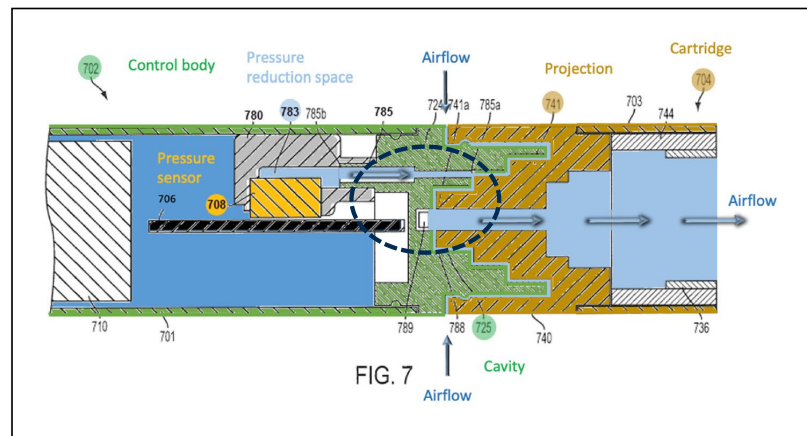


Figure 18

Reply at 21; EX1043 at ¶¶51-52, 55

3 103: Worm in view of Levitz

PO's Argument: "Petitioner's reasons for modifying Worm are redundant . . . [a POSITA] would have no reason to make such modifications given Worm's express disclosure of an air inlet path." (POR at 12-13)

PO Expert Deposition

17 Q. Okay. And what -- what would cause air
18 inlets to become clogged or blocked?
19 A. All sorts of things. Dirt, fingers,
20 labels people put on things. There are all sorts of
21 things that could -- that could block it.

EX1040 at 103:17-21

7 Q. Okay. And would a person of ordinary
8 skill have recognized that it would be desirable to
9 have multiple air inlets to help minimize the risk
10 that there was clogging or blocking of one of them?
11 A. That's one way of handling it. But again,
12 if you've got multiple air inlets and you're trying
13 to control the drop and you start making those holes
14 smaller, that's when the tolerancing issue becomes
15 more and more problematic. So there are trade-offs
16 that are associated with that.

EX1040 at 105:7-16

Reply at 20

3 103: Worm in view of Levitz

PO's Argument: "Worm already solves the backflow problem as discussed above, so Petitioner's argument is based on a false premise." (POR at 15)

Worm (EX1004)

[0005] The control body particularly can include an electronic circuit board therein that is configured for improved functioning of the device. For example, in some embodiments, the electronic circuit board is in an orientation that provides for improved communication between a pressure sensor and drawn air entering the device. This can incorporate a coupler element that includes an exterior opening that allows external air to enter the device and a pressure channel that communicates a pressure drop caused by the drawn air to an isolated segment of the device that includes a portion of the pressure sensor. Such coupler can particularly be useful to reduce or prevent passage of liquid from an attached cartridge through the coupler and into the control body and thus reduce or prevent contamination of the sensor or other electronic elements present in the control body.

Reply at 20

103: Thorens in view of Weigensberg

27. A vaporizer device comprising:

a cartridge comprising a reservoir configured to hold a vaporizable material, a heater configured to heat the vaporizable material, and a mouthpiece in fluid communication with the heater; and

a device body comprising:

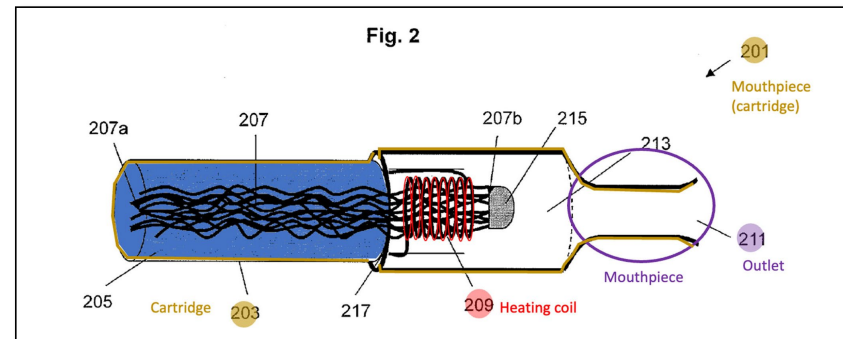
a cartridge receptacle configured to insertably receive the cartridge;

a pressure sensor configured to output sensor readings, wherein a first side of the pressure sensor is exposed to a sealed air flow path and a second side of the pressure sensor is exposed to a device air path open to ambient pressure,

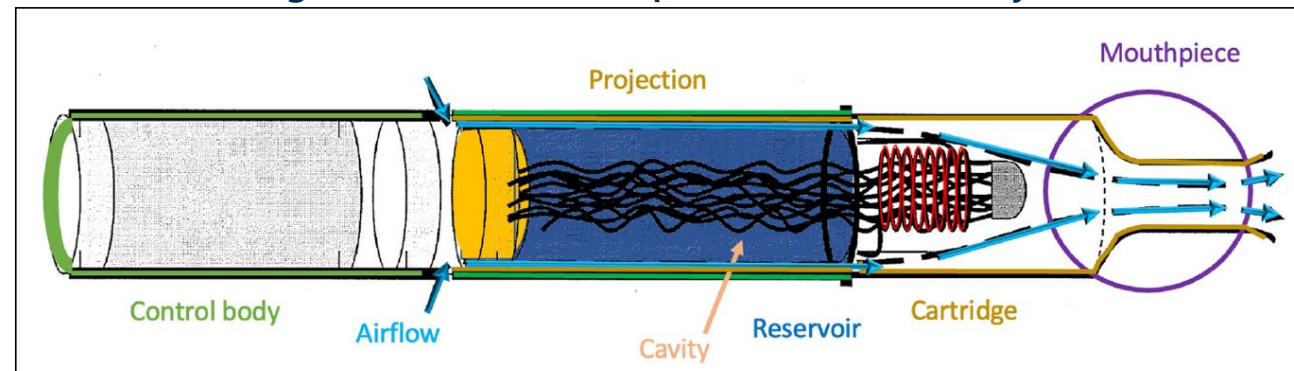
the sealed air flow path comprising a channel formed between an interior surface of the cartridge receptacle and an exterior surface of the cartridge, the sealed air flow path passing from an air inlet, through the channel and to the heater and an outlet in the mouthpiece of the cartridge; and

a gasket around the pressure sensor, the gasket configured to seal the device air path from the sealed air flow path.

Thorens cartridge



Thorens cartridge inserted into receptacle of device body



Petition at 22-23, 70-71, 78-80

103: Thorens in view of Weigensberg

27. A vaporizer device comprising:

a cartridge comprising a reservoir configured to hold a vaporizable material, a heater configured to heat the vaporizable material, and a mouthpiece in fluid communication with the heater; and

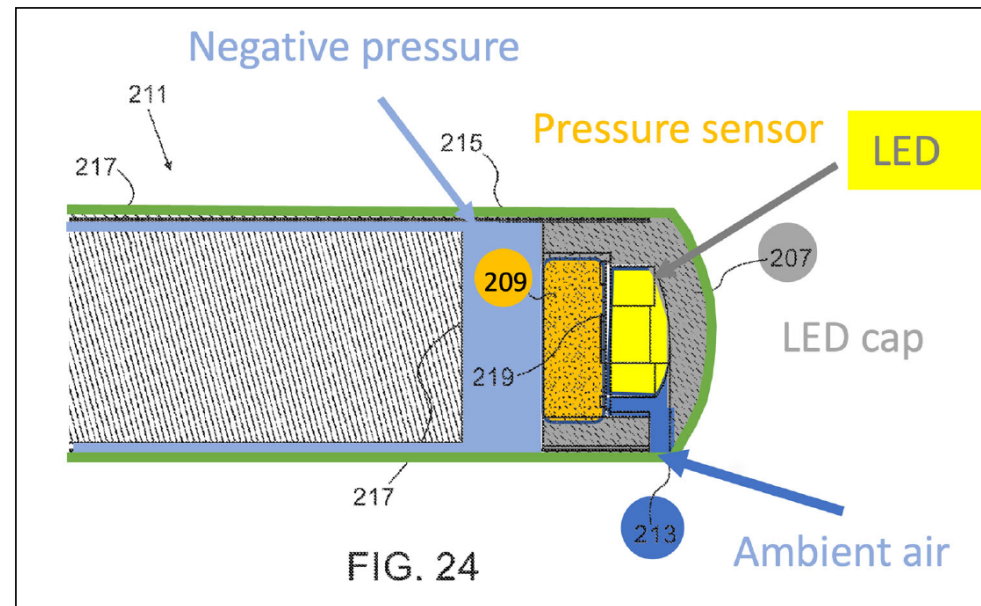
a device body comprising:

a cartridge receptacle configured to insertably receive the cartridge;

a pressure sensor configured to output sensor readings, wherein a first side of the pressure sensor is exposed to a sealed air flow path and a second side of the pressure sensor is exposed to a device air path open to ambient pressure,

the sealed air flow path comprising a channel formed between an interior surface of the cartridge receptacle and an exterior surface of the cartridge, the sealed air flow path passing from an air inlet, through the channel and to the heater and an outlet in the mouthpiece of the cartridge; and

a gasket around the pressure sensor, the gasket configured to seal the device air path from the sealed air flow path.



EX1006, Fig. 24

4

103: Thorens in view of Weigensberg

27. A vaporizer device comprising:

a cartridge comprising a reservoir configured to hold a vaporizable material, a heater configured to heat the vaporizable material, and a mouthpiece in fluid communication with the heater; and

a device body comprising:

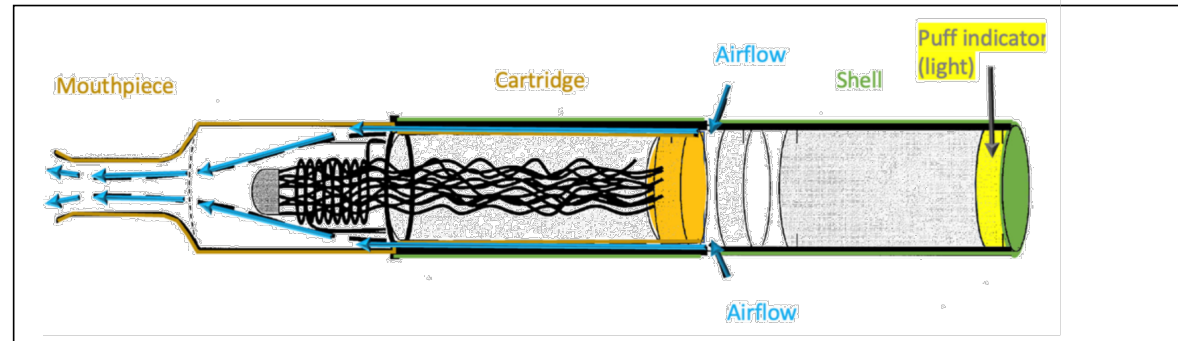
a cartridge receptacle configured to insertably receive the cartridge;

a pressure sensor configured to output sensor readings, wherein a first side of the pressure sensor is exposed to a sealed air flow path and a second side of the pressure sensor is exposed to a device air path open to ambient pressure,

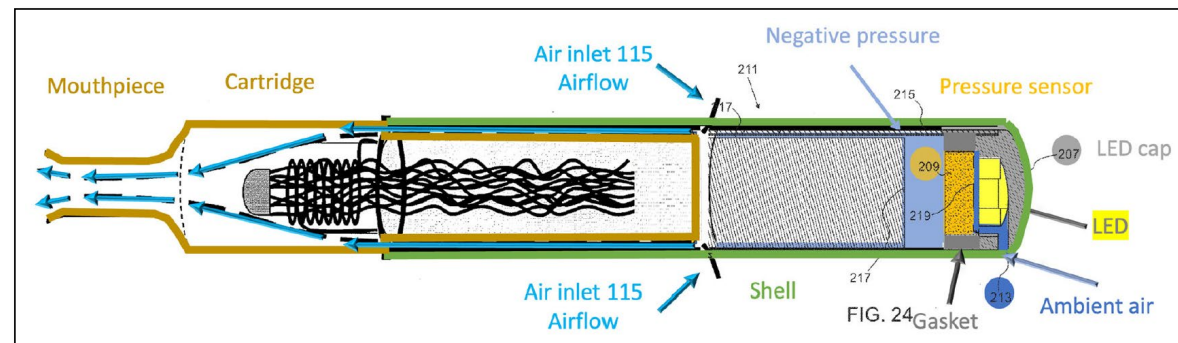
the sealed air flow path comprising a channel formed between an interior surface of the cartridge receptacle and an exterior surface of the cartridge, the sealed air flow path passing from an air inlet, through the channel and to the heater and an outlet in the mouthpiece of the cartridge; and

a gasket around the pressure sensor, the gasket configured to seal the device air path from the sealed air flow path.

Unmodified Thorens



Modified Thorens in view of Weigensberg



Petition at 65-66, 70-87

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

39

NJOY Exhibit 1053.039
NJOY v. Juul
IPR2024-00231

4 103: Thorens in view of Weigensberg

Motivation to Combine: Incorporating pressure sensor into LED cap saves space

Weigensberg (EX1006)

[0107] . . . A sensor unit 209 occupies the interior of the LED cap 207, and is an embodiment of the sensor 24 (FIG. 1), but instead of being inside a plastic housing of its own, the sensor unit 209 is now disposed inside the LED cap 207 in order to save space.

Petitioner's Expert

"Moreover, a POSA would have understood that Weigensberg's design reduces the space by combining the puff detector (pressure sensor) and the puff indicator (LED). EX1006, [0107] ("[T]he sensor unit 209 is now disposed inside the LED cap 207 in order to save space."). Combining the pressure sensor and LED into the same enclosure frees up the space previously dedicated to two different enclosures in Thorens. Additionally, relocating the pressure sensor provides additional space. This would allow for a larger battery in the space freed-up by combining these components into a single enclosure at the tip of the device."

EX1003, ¶190

Petition at 65; EX1003 at ¶¶184-185, 190; Reply at 22

4 103: Thorens in view of Weigensberg

Motivation to Combine: Differential pressure sensor has known benefits

Weigensberg (EX1006)

[0059] In one mode of operation the device 10 is capped by a tip 20. When smoke enters the device 10, an internal aperture (not shown) typically constricts the flow, thereby creating a pressure differential, which is sensed by a vacuum sensor 24 of known type. The electronic power control circuitry 14 linked to the sensor 24 activates the aerosol generating device in the section 16, which is powered, typically by a lithium ion battery 26 that is housed in a barrel 28 of the battery section 12.

Petitioner's Expert

"Additionally, selecting a differential pressure sensor that uses ambient air as a reference was also frequently selected for electronic cigarettes. *Id.* One reason is that it better accommodates external pressure changes. For example, high altitudes would not trigger a false activation due to the decrease in pressure. Further, when a variable output pressure sensor like Weigensberg is used, additional features, like real-time changes in the operation of the device, can be added."

EX1003, ¶190

Petition at 64-65; EX1003 at ¶¶ 182, 190; Reply at 22

103: Thorens in view of Weigensberg

PO's Argument: "There is no disclosure in Weigensberg that the plastic LED cap provides such a seal, and a POSITA would understand that plastic is not a suitable material for a gasket because it does not provide an airtight seal that a gasket provides." (POR at 84)

Petitioner's Expert

"Newton766 discloses the use of a gasket (resilient polymeric surround 30) surrounding the pressure sensor at the tip of the electronic cigarette.... Plastics are polymers, and a POSA would have recognized that resilient plastic materials can form seals sufficient to be used as a gasket...."

EX1043 at ¶72

Table 1. Thermoplastics—Properties and Uses

Item	Polypropylene	Polytetrafluoroethylene (Teflon)
Key properties	Toughness, gloss, light weight, heat resistance	Thermal stability, low coefficient of friction, chemical resistance
Major uses	Housewares, appliance parts, tank liners	Gaskets, non-stick surfaces, insulation, electrical applications
Density, g per cc	0.90–0.92	2.13–2.22
Tensile strength, psi	3,500–6,000	2,000–4,500
Tensile modulus, psi × 10 ⁻⁸	1–2	0.58
Maximum continuous-use temp, deg F	200–320	550
Molding temp, deg F	350–600	430
Dielectric strength, volts per mil	450–650	
Dielectric constant, 1,000 cps	2.3	
Dissipation factor, 1,000 cps	0.0002–0.0008	
Water absorption, 24 hr, percent	Less than 0.02	
Item	Plasticized vinyl	
Key properties	Compounding flexibility, low cost, pliability	
Major uses	Tubing, gaskets, upholstery, footwear	

EX1041 at 22

Petition at 66; EX1003 at ¶185; Reply at 25–26; EX1043 at ¶¶71–72

4 103: Thorens in view of Weigensberg

PO's Argument: Differential pressure sensor could activate the heater if the air inlet is clogged or blocked, and the device may overheat (POR at 77)

Petitioner's Expert

"These concerns are unfounded. Patent Owner and Dr. Collins ignore that Thorens discloses temperatures controls that would prevent overheating (e.g., EX1016, [0052]). Additionally, differential pressure sensors were typically used in e-cigarettes at the time and there is no indication or evidence that they were known to cause overheating. See, e.g., EX1022, [0101]."

EX1043, ¶ 61

Thorens (EX1016)

[0052] The operating temperature should be controlled to ensure that, as far as possible, no undesirable degradations of the aerosol former or formers and the flavouring material occur. This can be achieved, for example, by controlling the temperature of the heater if the heater is made from a suitable metal or alloy, using the variation in conductivity, or by controlling the amount of energy delivered to the heater.

Reply at 23

103: Thorens in view of Weigensberg

PO's Argument: The modification results in exposed wiring where the cartridge is inserted, as shown in Petitioner's own images of the proposed combination (POR at 78-79)

Petitioner's Expert

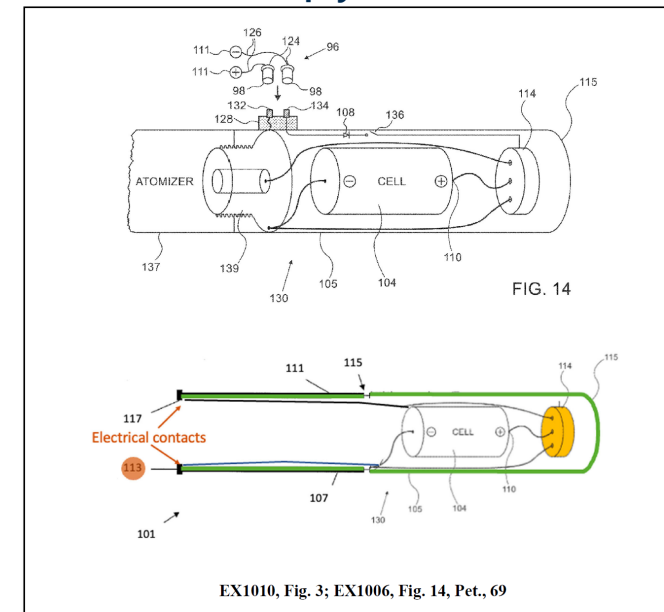
"The inclusion of Weigensberg's electrical schematic was solely to illustrate the electrical connections with the existing Thorens electrical system and was not an implementation of the combination. The portion of Weigensberg's "schematic diagram" incorporated into the above schematic is from Figure 14, which is described as "a schematic diagram of electrical circuitry in an electronic cigarette...."

EX1043, ¶63

Weigensberg (EX1006)

[0080] Reference is now made to FIG. 14, which is a schematic diagram of electrical circuitry in an electronic cigarette 130 adapted to a battery charger in accordance with an alternate embodiment of the invention.

Reply at 24



103: Thorens in view of Weigensberg

PO's Argument: "Petitioners' proposed modification also removes Thorens's programmable circuitry 105, which is "used to manage the device operation," such as the control of the heating coil upon detecting a puff." (POR at 25)

Petitioner's Expert

"Patent Owner and Dr. Collins contend that 'a POSITA would understand that removing [Thorens' electrical circuitry 105] would leave the device inoperable for its intended purpose—that is, detecting a puff and activating the heating coil to form vapor.'... This contention is incorrect and ignores that Weigensberg's pressure sensor assembly includes integrated circuitry that controls the device."

EX1043, ¶167

Weigensberg (EX1006)

[0107] . . . A sensor unit 209 occupies the interior of the LED cap 207, and is an embodiment of the sensor 24 (FIG. 1), but instead of being inside a plastic housing of its own, the sensor unit 209 is now disposed inside the LED cap 207 in order to save space. Electrical circuitry associated with or incorporated in the sensor unit 209 may enable the aerosol generating device and perform various additional functions as may be required for the operation of the electronic cigarette 211.

Reply at 25

103: Thorens in view of Weigensberg

32. The vaporizer device of claim 27, wherein the cartridge comprises the vaporizable material, and wherein the vaporizable material comprises a nicotine formulation.

EP0277519 (referenced by Thorens)

The aerosol generating substance also can include one or more volatile flavoring agents, such as menthol, vanillin, artificial coffee, tobacco extracts, tobacco particles (eg., a charge of tobacco), nicotine, caffeine, liquors, and other agents which impart flavor to the aerosol. The aerosol generating substance can be any other desirable volatile solid or liquid materials. Alternatively, these optional agents can be placed between the aerosol generating means and the mouthend, such as in a separate substrate or chamber in the passage which leads from the aerosol generating means to the mouthend of the article.

EX1017 at 25:31-43

EP1736065 (incorporated by reference in Weigensberg)

[0017] When a smoker smokes, the mouthpiece 15 is under negative pressure, the air pressure difference or high speed stream between the normal pressure cavity 5 and the negative pressure cavity 8 will cause the sensor 6 to output an actuating signal, the electronic circuit board 3 connected therewith goes into operation. Now the ripple
* * *
flows into the atomization cavity 10 in the atomizer 9. The high speed stream passing through the ejection hole drives the nicotine solution in the porous body 27 to eject into the atomization cavity 10 in the form of droplet, where the nicotine solution is subjected to the ultrasonic atomization by the first piezoelectric element 23 and is further atomized by the heating element 26. After the atomiza-

EX1024, [0017]

Petition at 86-87

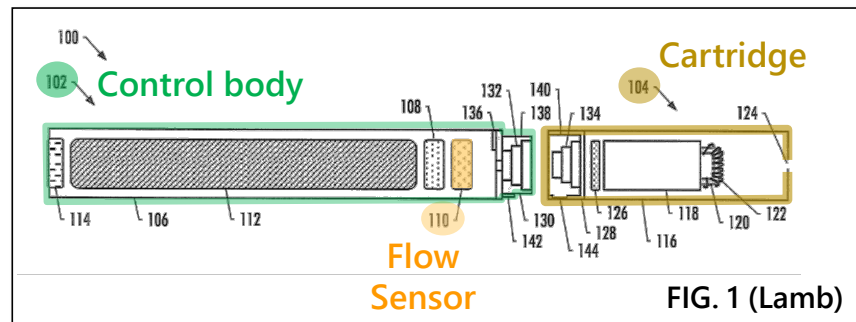
5-8 103: Further in view of Lamb

15. The vaporizer device body of claim 14, wherein the pressure sensor comprises a capacitive membrane.

16. The vaporizer device body of claim 14, wherein the pressure sensor comprises a MEMS pressure sensor.

28. The vaporizer device of claim 27, wherein the pressure sensor comprises a capacitive membrane.

29. The vaporizer device of claim 27, wherein the pressure sensor comprises a MEMS pressure sensor.



[0043] Briefly returning to FIG. 1, in some examples, the flow sensor 110 may be implemented by a microelectromechanical systems-based (MEMS-based) sensor such as a MEMS microphone or MEMS pressure sensor within a housing of the aerosol delivery device 100, such as the housing of the control body 102 or cartridge 104

[0047] . . . As shown, the micromachined sensor of the MEMS microphone may include a micromachined, pressure-sensitive diaphragm 306 a and a backplate 306 b that form a variable capacitor 306.

Petition at 27-28, 94, 97-98

5-8 103: Further in view of Lamb

18. The vaporizer device body of claim 14, wherein the sensor readings output by the pressure sensor comprise pressure values.

31. The vaporizer device of claim 27, wherein the sensor readings output by the pressure sensor comprise pressure values.

[0043] Briefly returning to FIG. 1, in some examples, the flow sensor 110 may be implemented by a microelectromechanical systems-based (MEMS-based) sensor such as a MEMS microphone or MEMS pressure sensor within a housing of the aerosol delivery device 100, such as the housing of the control body 102 or cartridge 104

[0045] In other examples, the MEMS-based sensor may be configured to convert the pressure to the electrical signal that varies with a corresponding variation in the pressure relative to an ambient pressure on the MEMS-based sensor. In these examples, the corresponding variation may be caused by variation in the airflow such as a variation in the rate of airflow.

Petition at 94

5-8 103: Further in view of Lamb

32. The vaporizer device of claim 27, wherein the cartridge comprises the vaporizable material, and wherein the vaporizable material comprises a nicotine formulation.

[0040] The aerosol precursor composition, also referred to as a vapor precursor composition, may comprise a variety of components including, by way of example, a polyhydric alcohol (e.g., glycerin, propylene glycol or a mixture thereof), nicotine, tobacco, tobacco extract and/or flavorants. Various components that may be included in the aerosol precursor composition are described in U.S. Pat. No. 7,726,320 to Robinson et al., which is incorporated herein by reference in its entirety

Petition at 99

Secondary Considerations

27. A vaporizer device comprising:

a cartridge comprising a reservoir configured to hold a vaporizable material, a heater configured to heat the vaporizable material, and a mouthpiece in fluid communication with the heater; and

a device body comprising:

a cartridge receptacle configured to insertably receive the cartridge;

a pressure sensor configured to output sensor readings, wherein **a first side of the pressure sensor** is exposed to a sealed air flow path and **a second side of the pressure sensor** is exposed to a device air path open to ambient pressure,

the sealed air flow path comprising a channel formed between an interior surface of the cartridge receptacle and an exterior surface of the cartridge, the sealed air flow path passing from an air inlet, through the channel and to the heater and an outlet in the mouthpiece of the cartridge; and

a gasket around the pressure sensor, the gasket configured to seal the device air path from the sealed air flow path.

14. A vaporizer device body comprising:

a cartridge receptacle configured to insertably receive a cartridge containing a vaporizable material;

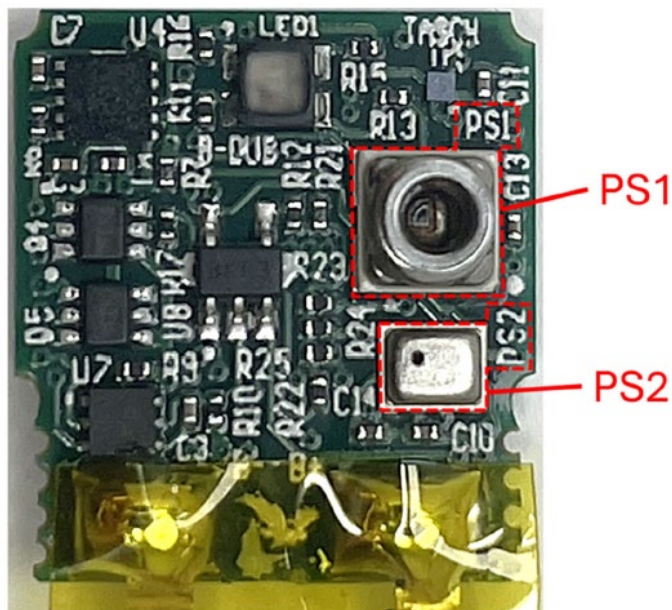
a pressure sensor configured to output sensor readings, wherein **a first side of the pressure sensor** is exposed to a sealed air flow path and **a second side of the pressure sensor** is exposed to a device air path open to ambient pressure,

the sealed air flow path comprising a channel formed between an interior surface of the cartridge receptacle and an exterior surface of the cartridge, the sealed air flow path passing from an air inlet, through the channel and to a heater and an outlet of a mouthpiece within the cartridge; and

a gasket around the pressure sensor, the gasket configured to seal the device air path from the sealed air flow path.

Secondary Considerations: JUUL System Does Not Practice

JUUL System PCB



EX1043 at ¶ 79

Petitioner's Expert

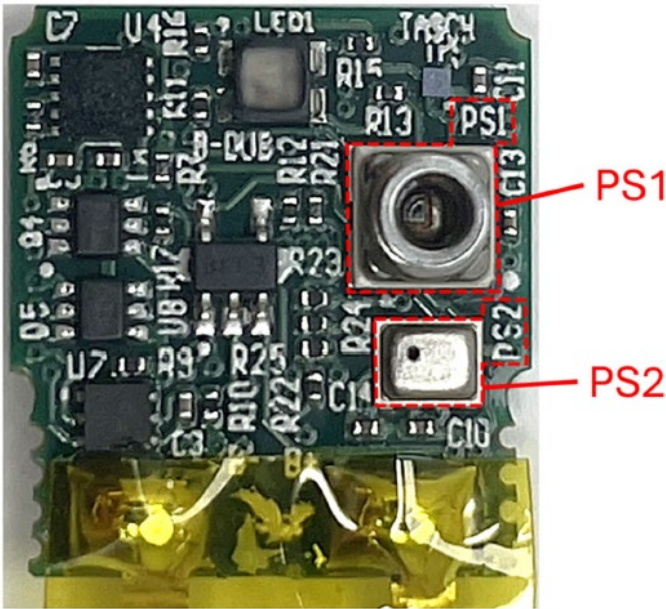
[C]laims 14 and 27 require a **single** pressure sensor having one side exposed to the sealed air flow path, and another side of the same pressure sensor exposed to ambient pressure. No such pressure sensor exists in the JUUL System. Instead, as shown in the picture of the JUUL System's printed circuit board, it uses two absolute pressure sensors—labeled PS1 and PS2.... Specifically, absolute pressure sensor PS1 has only one side exposed, that being to the air path pressure (i.e., the sealed airflow path), while absolute pressure sensor PS2 has only one side exposed, that being to ambient pressure.

EX1043 at ¶ 79

Reply at 29-30

Secondary Considerations: JUUL System Does Not Practice

JUUL System PCB



EX1043 at ¶ 79

JUUL System PMTA

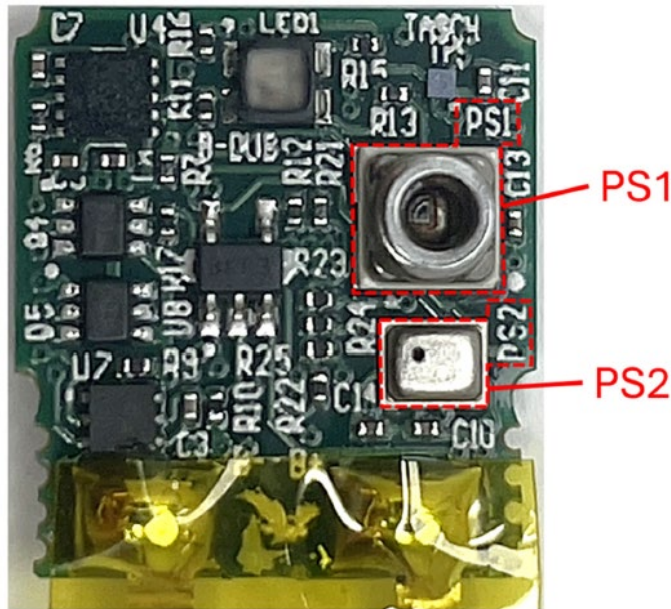
Table 16 Functionality in Relation to Use Step	
User Step	Functionality
	* * *
Air enters via the device and pod interface and is drawn through the device in communication with the pressure sensors and then through the JUULpod. There are two pressure sensors, one which measures ambient and the other which measures airpath pressure. When the microcontroller interprets readings from the two sensors as a	

EX2003 at 45

Reply at 29-30

Secondary Considerations: JUUL System Does Not Practice

JUUL System PCB



EX1043, ¶ 79

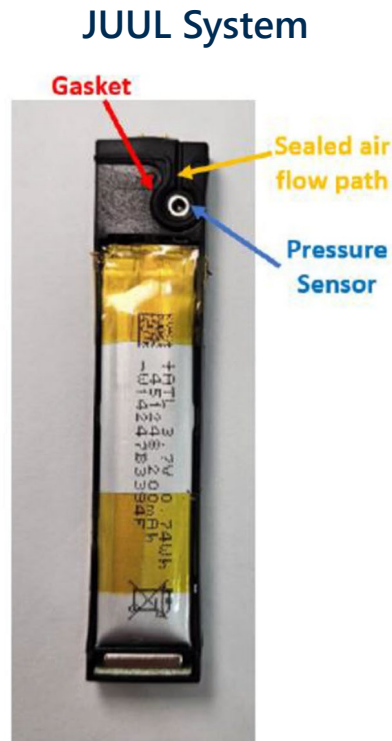
Patent Owner's Expert

14 Q. Okay. Now, the JUUL system also has a
15 second pressure sensor, correct?
16 A. I don't recall one.
17 Q. So sitting here today, you don't know if
18 the JUUL system has a second pressure sensor in the
19 device?
20 A. I don't recall one.

EX1040 at 56:14-20

Reply at 29-32

Secondary Considerations: JUUL System Does Not Practice



POR at 33

Petitioner's Expert

POSA would have understood that the plain meaning of the term "around" in the context of the '123 Patent is "surround." For example, the '123 Patent describes that the gasket forms a seal around the pressure sensor case. EX1001, 42:25-32. Thus, even if the claimed "pressure sensor" could be the combination of the two absolute pressure sensors and associated circuitry, which in my opinion it cannot, the JUUL System still cannot practice the '123 Patent challenged claims because there is no gasket around this combination of components identified by Patent Owner. Instead, the identified gasket in the JUUL System is around only one of the absolute pressure sensors (PS1). There is no gasket present around the first and second absolute pressure sensors (PS1 and PS2) or the unidentified associated circuitry.

EX1043, ¶183

Reply at 32

Secondary Considerations: No Presumption of Nexus

Patent Owner's Argument

As shown below, there is strong and indisputable objective evidence of non-obviousness based on JUUL's highly successful JUUL System. Ex. 2053, ¶¶103-04. In the parallel ITC investigation, after a full trial with live direct and cross-examination of many witnesses, **the ALJ has issued an initial determination concluding that the below evidence supports long-felt need, industry praise, and commercial success.**

POR at 19

Parallel ITC Investigation

NJOY disagrees. NJOY Br. at 144–150 (disputing secondary considerations for the '173, '722 and '981 patents); NJOY Reply at 86–87 (disputing industry praise for the '173 patent). The Staff did not address secondary considerations for the '173 patent. See Staff Br. at 218–25 and Staff Reply at 28–32 and 35–36. **For the reasons discussed with respect to the '722 and '981 patents, the evidence supports a presumption of nexus and demonstrates commercial success, longfelt need, industry praise, and failure of others tied to the features of claims 1 and 4 of the '173 patent, supporting non-obviousness.**

EX2055 at 18

Reply at 33

Secondary Considerations: JUUL is Not Co-Extensive with '123 Patent

Patent Owner's Founder (EX1034)

From: Adam Bowen <adam@juul.com>
Sent: Sunday, June 3, 2018 11:20 PM
To: Kevin Burns; Kirk Phelps; Bryan White; James Monsees
Subject: Drivers of JUUL's success



I think it's very important to get some clarity on this, for product strategy and to assess competitive threats. Not knowing is paralyzing (don't change anything!), and misweighting is also perilous. I very firmly believe that the cigarette-like nicotine delivery is by far the biggest driver. We have a body of evidence: lab, clinical, consumer,... that supports this assertion.

There is also competitor activity, such as:

1. As NJOY headed into bankruptcy, the one product showing promise (per IRI) was the Daily, a round cigalike but this time with salts chemistry. They've emerged from bankruptcy and I expect we'll see a resurgence based solely on salts products.
2. Proliferation of salts liquids in open systems. For example.
3. Von Erl launched a pod me-too (though uglier than JUUL), no salts, and saw little repeat.
4. myBlu is a rebrand of Von Erl. No salts at launch and poor repeat. They'll launch salts version soon and we'll see...
5. PHIX launched a pod me-too (a little better looking than Von Erl) with salts and saw high repeat, to the point of hitting supply constraints.
6. MarkTen Elite is a rebrand of PHIX, without salts, and has done poorly so far.

It's implausible that with conventional chemistry, we would have seen such virality, fanaticism, OOS, etc, and despite all the quality issues. "Yes it's an e-cig, but square!" I think we would be lucky to have 5% share in that case.

Reply at 34

Secondary Considerations: JUUL is Not Co-Extensive with '123 Patent

Patent Owner's Investor Memo (EX1035)

B. Value Proposition

JUUL is quickly penetrating the traditional smoking market due to the strong value proposition that its product offers smokers.

Intensely Satisfying

At the heart of value proposition is JUUL's unique nicotine delivery profile, enabled by patented chemistry and innovative design. JUUL pods use nicotine salts, derived from tobacco leaves, as opposed to the free-base nicotine that is used by legacy e-cigarettes. Furthermore, JUUL's highly-engineered design and atomization technology optimizes vapor production.

The combination allows for a nicotine absorption rate that closely matches that of a traditional cigarette, as evidenced by the pharmacokinetic curve in Figure 6. JUUL's chemical profile creates an experience essentially identical to the sensation of smoking a traditional cigarette. It is this experience that has allowed JUUL to quickly capture over 50% of the e-cigarette category.¹³

EX1035.014

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Secondary Considerations: JUUL is Not Co-Extensive with '123 Patent

Patent Owner's Argument

On the other hand, JLI took a different approach with its JUUL System, abandoning traditional cigarette iconography altogether, in particular the cylindrical shape, outward-facing, flame-simulating LED, and a screw-in cartridge. Ex. 2053, ¶133. The JUUL System's inventive design provided the user with a fundamentally different user experience, including with respect to vapor production and nicotine delivery that satisfied smokers' cravings and that were enabled through practice of the '123 patent. Ex. 2025, 39:8-41:5

POR at 44

Patent Owner's Expert

10 Q. Okay. And now, looking at claim 14, there
11 is no limitation explicitly set forth in the claim
12 regarding the shape of the device body or cartridge,
13 correct?

14 A. I don't see it, no.

15 Q. Okay. And so the claims would encompass a
16 device body and a cartridge that are cylindrical,
17 right?

18 A. They could, if they met all the other
19 claim limitations.

EX1040 at 44:10-19

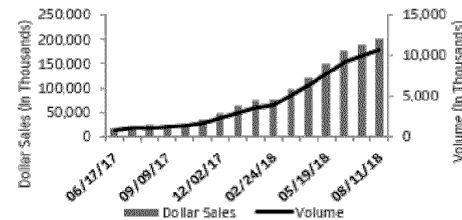
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Secondary Considerations: JUUL is Not Co-Extensive with '123 Patent

Patent Owner's Secondary Considerations Evidence

Implications for e-cigarettes

The growing popularity of JUUL has reinvigorated growth in the overall e-cigarette category. In the most recent Nielsen data, JUUL achieved a 72% dollar share of the category, and accounted for ~100% of category growth. The growing popularity of JUUL seems to be driven by flavored offerings (in particular Cool Cucumber and Mango). For a deep dive on JUUL consumer survey work (18+), see our note here.



Source: The Nielsen Company and Cowen and Company

Implications for Big Tobacco

Among tobacco investors there has been growing concern that the widespread popularity of JUUL is having a negative impact on the cigarette industry, which headwind would seemingly only grow as JUUL continues to gain traction with consumers. Given that big tobacco has yet to find a productive way to meaningfully compete against JUUL, an FDA decision to pull flavors from the market would be a notable positive for MO, BATS, IMB, and JT as it would reset the competitive landscape in vapor. Maintain Outperform ratings on MO, BATS and IMB.

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