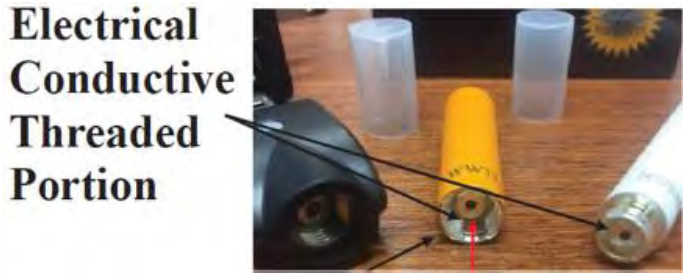
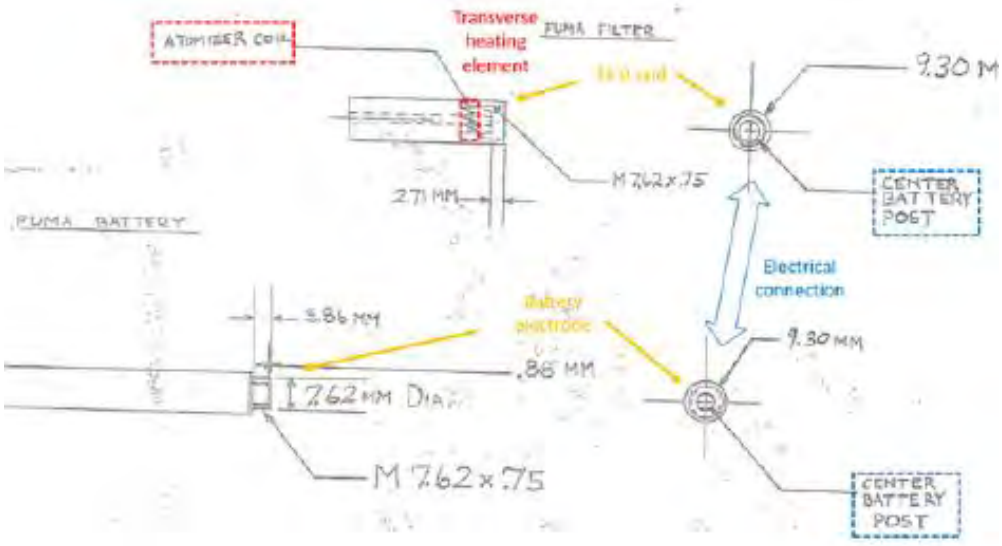
[redacted]



See '864 Priority Chart at 11 (citing CRTP Attachment D at Fig. 2).



See RX-1558C, '864 Priority Chart at 11 (citing CRTP Attachment E at FUMA-INSPECTION-0037).

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses claim element 1(h). *See* RX-1353, Conley '864 Declaration at ¶ 5 (Independent claim 41 – Recitation 2); *see also* RX-1356.

NJOY also admitted that the Fuma Prototype discloses claim element 1(h). *See* '864 Priority Chart at 11.

[redacted]

j. ’864 Patent, claim 1[i]: “an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing”

1. Xia ’610 in view of Wang ’554 and Fang ’044 and Smoke Fifty-One Duo– ’864 Patent, Claim 1[i]

The evidence will show that Xia ’610 discloses or renders obvious, alone or in combination with Wang ’554 and Fang ’044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 766-772; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia ‘610); JX-0595 (Fang ‘044); RX-0130C (Declaration of Yardimici). NJOY and its expert do not dispute that this limitation is met by Xia ’610. *See* CX-2110 (Complainant’s First Sup. Validity Contentions (03/12/2024)) at 793-805; CX-2726C (Vallee Reb. Rpt.) at Appx. A-1, ¶ 235. Complainant’s expert Dr. Vallee confirmed that Xia ’610 discloses an airflow passageway within the generator portion’s exterior housing. *See, e.g.,* RX-1015C (Vallee 4/12/24 Tr.) at 382:2-383:1. Dr. Vallee also confirmed that at least a portion of Xia 610’s airflow passageway is central and axial to the central longitudinal axis of the cartridge. *See, e.g.*, RX-1015C (Vallee 4/12/24 Tr.) at 383:24-384:3.

For example, the evidence will show that Xia ’610 discloses an airflow passageway within the generator portion, at least as NJOY interprets the claims and the airflow passageway (e.g., not requiring that the airflow passageway be separate from other claimed components[31]). For example, Xia ’610 explains that air flows through the device from left to right as illustrated in FIG. 2: “under the action of suction by the smoker, airflow enters the inside of the generator from the air inlets 702 on a side surface of the generator, under the action of the airflow, the vibrating diaphragm 7

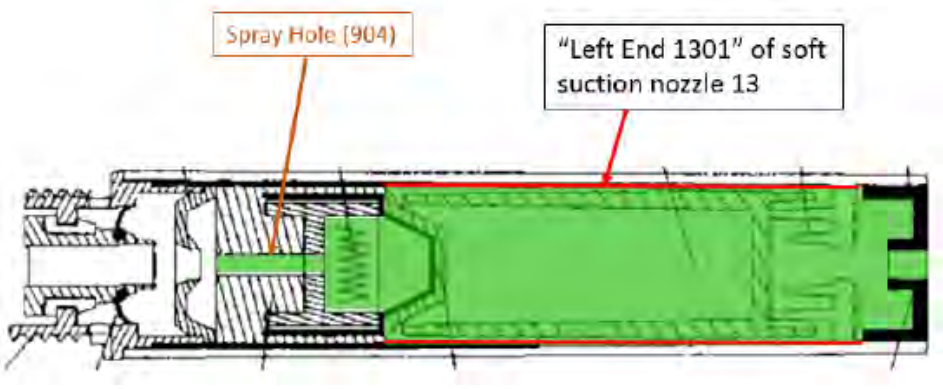
[31] For example, NJOY asserts that the [redacted].

NJOY Exhibit 2008.0702
Juul v. NJOY
IPR2024-00161

[redacted]

vibrates … the heater 9 starts working, the chemical liquid is instantly vaporized in an atomizing working room of the heater 9, and the vaporized chemical liquid is sucked out by the smoker from the soft suction nozzle 13." JX-0596 (Xia '610) at JX-0596.10*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 769.

Xia '610's Figure 5 illustrates where the left end 1301 is located within the generator portion, and Xia '610's Figure 2 illustrates the remainder of the generator portion. Taking these together, the region defined by the interior of the left end 1301 of the suction nozzle is illustrated in the following annotated figure:



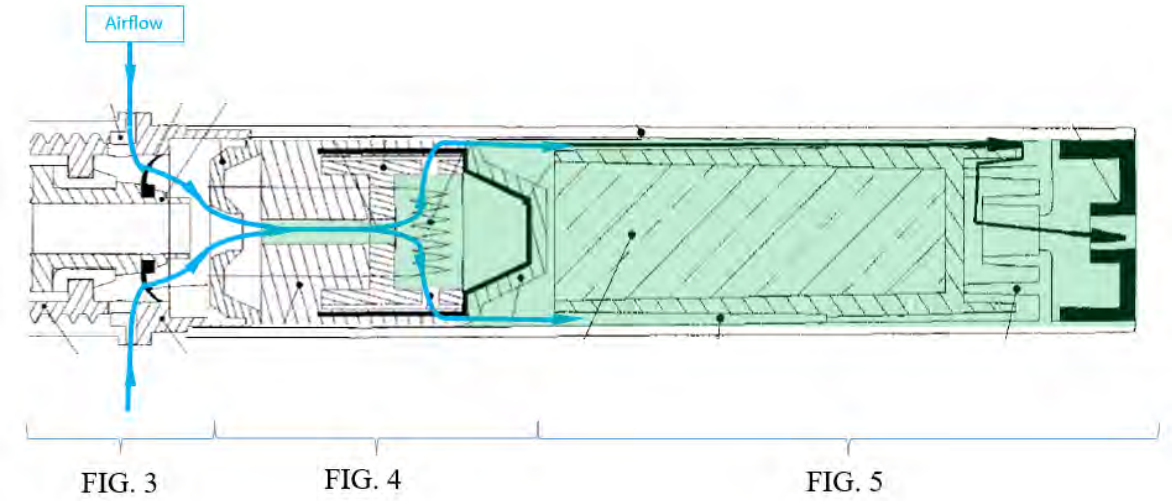
See JX-0596, Xia '610 Figs. 2, 5; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 770.

At least under NJOY's interpretation of airflow passageways (e.g., as defined by the flow of air rather than a separate structure), Xia '610's airflow occurs within an airflow passageway defined by the inner face of the left end of the suction nozzle 1301. For example, Xia '610 explains that "the soft suction nozzle 13 is arranged on a right end face of the generator," and "a left end 1301 of the soft suction nozzle 13 extends to the bottom of the liquid stopping sheet 8, and may be made of environmental-friendly materials such as polypropylene PP, which may effectively prevent internal heat from being transmitted out." JX-0596 (Xia '610) at JX-0596.13*; see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 244. These components are illustrated in figure 5.

NJOY Exhibit 2008.0703
Juul v. NJOY
IPR2024-00161

[redacted]

For example, the following annotated and combined version of Figures. 3-5 illustrates Xia '610's airflow passageway at least as NJOY interprets that term:



See JX-0596 (Xia '610) at FIGs 3-5*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 244-245.

The region defined by the interior of the left end 1301 of the suction nozzle is central and axial with respect to the shell of the generator portion (the claimed "housing" of the "cartridge"). *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 771. For example, Xia '610's disclosed generator portion has a longitudinal axis extending in the left-right direction as illustrated in figure 2. The region defined by the left edge 1301 of the suction nozzle is aligned along the same axis, the longitudinal axis of the cartridge housing, and therefore is "axial" as claimed. Similarly, the region defined by the left edge 1301 of the suction nozzle is centrally located with respect to the housing, and therefore is "central" as claimed.

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '864 Patent, Claim 1[i]

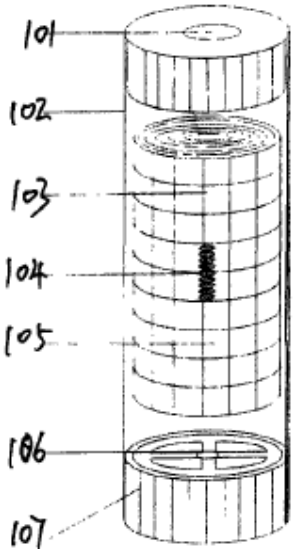
The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C

NJOY Exhibit 2008.0704
Juul v. NJOY
IPR2024-00161

[redacted]

(Leinsing Opening Rpt., Appx. A) at ¶¶ 773-778; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

For example, the evidence will show that Wang '554 discloses an airflow passageway within the cartridge, at least as NJOY interprets the claims and the airflow passageway (e.g., not requiring that the airflow passageway be separate from other claimed components, *see supra* n. 31). For example, Wang '554 states "the air inlet 106 of the cigarette holder, an internal gap of the cigarette holder and the air outlet 101 of the cigarette holder form the complete airflow channel." RX-0005 (Wang '554) at RX-0005.8; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 775. Wang '554 also explains that "The cigarette holder shell 102 is a hollow cylinder with one end being one end of the air inlet 106 … The other end is one end of the air outlet 101… The interior of the shell 102 provides a space for the electric heater 104 and the tobacco extract 103 and organic fiber 105 wound around it, and also provides a space for smoke produced when the tobacco extract 103 in the organic fiber 105 is heated by the electric heater 104." RX-0005 (Wang '554) at RX-0005.7; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 775.



NJOY Exhibit 2008.0705
Juul v. NJOY
IPR2024-00161

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See RX-0005 (Wang '554) at Fig. 3; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 775.

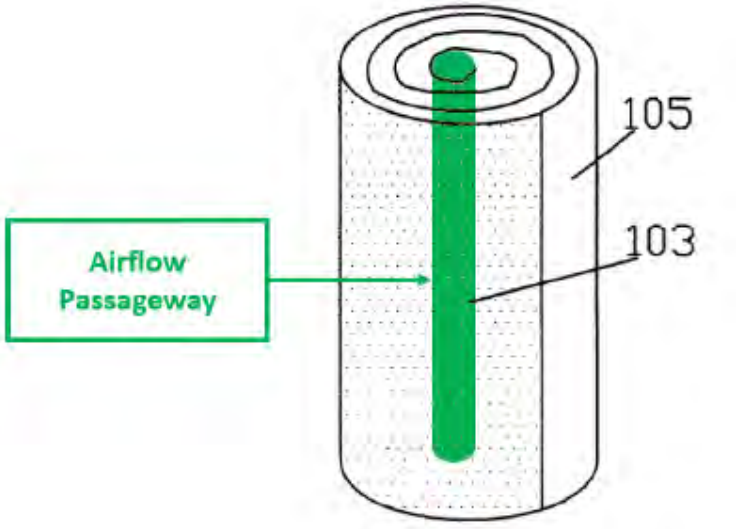


图 5

See RX-0005 (Wang '554) at Fig. 5 (annotated).

Wang '554 describes that, within the cigarette holder part, "[t]he organic fiber 105 of the cigarette holder is a natural wood fiber or natural absorbent paper, especially a fiber made of natural tobacco." RX-0005 (Wang '554) at RX-0005.7; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 776. A POSITA would understand that the description of the organic fiber as "wood fiber or natural absorbent paper," combined with its description as being "wound around" the heater, and "provid[ing] a space for electric heater" means that the organic fiber 105 is a roll of paper-like material that has a generally cylindrical passageway running centrally and axially through it. *Id.*

NJOY Exhibit 2008.0706
Juul v. NJOY
IPR2024-00161

[redacted]

Additionally, Wang ’554 illustrates the organic fiber 105 in figure 5 for example, which shows the same configuration, *i.e.,* a roll with a generally cylindrical hole running centrally and axially through it:

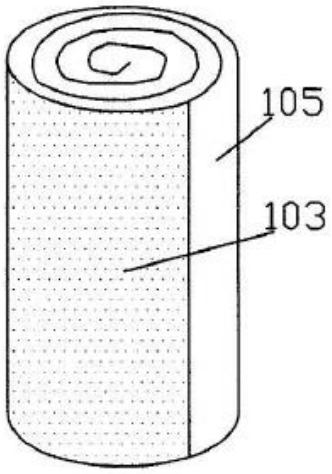


图 5

See RX-0005 (Wang ‘554) at FIG. 5; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 777.

To the extent solution holding medium 105 does not already have a separate passageway through the middle, Mr. Leinsing will opine it would be an obvious modification. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 778. Instead of requiring the air to flow through the fiber, a more defined central passageway would increase airflow through the cartridge, and decrease the likelihood that the air would acquire liquid drops when passing through the fiber material, which would be undesirable for a user to receive when sucking.

3. Fang ’044 in view of Xia ’610 and Wang ’554 and Smoke Fifty-One Duo – ’864 Patent, Claim 1[i]

The evidence will show that Fang ’044 discloses or renders obvious, alone or in combination with Xia ’610 and Wang ’554 and Smoke Fifty-One Duo this limitation. *See* JX-

NJOY Exhibit 2008.0707
Juul v. NJOY
IPR2024-00161

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0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 779-783; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici). NJOY and its expert do not dispute that this limitation is met by Fang '044. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 467-480; CX-2726C (Vallee Reb. Rpt.) at Appx. A-3, ¶ 151.

For example, the evidence will show that Fang '044 discloses a "smoking channel 10" which includes "gas pipe 8," as illustrated in figure 1 for example, which serves as the claimed airflow passageway, at least as NJOY interprets the claims and the airflow passageway (e.g., not requiring that the airflow passageway be separate from other claimed components, *see supra* n. 31). JX-0595 (Fang '044) at JX-0595.5; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 782. Fang '044 illustrates and explains that "gas pipe 8 is nested in the center of the evaporation oil storage sleeve 7, the gas pipe 8 is connected with a gas pipe support 9, the gas pipe 8 and the gas pipe support 9 form a smoking channel 10 with the center of the sucker 1 being separated and closed from the oil conservator 7, and the other end of the smoke sucking pipe 8 is communicated with the nicotine oil fuming device 5." JX-0595 (Fang '044) at JX-0595.5; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 782. The smoking channel does not have any obstacles that would divert airflow from the central axis of the housing, and extends centrally and axially between the first aperture on the first end and the second aperture on the second end.

4. Wang '927 in view of Wang '554 and NPRO Style – '864 Patent, Claim 1[i]

The evidence will show that Wang '927 discloses or renders obvious, alone or in combination with Wang '554 and NPRO Style this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 275-279; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang '927); RX-0005 (Wang '554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of

NJOY Exhibit 2008.0708
Juul v. NJOY
IPR2024-00161

NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style). NJOY and its expert do not dispute that this limitation is met by Wang '927. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 784-793; CX-2726C (Vallee Reb. Rpt.) at Appx. B, ¶ 192.

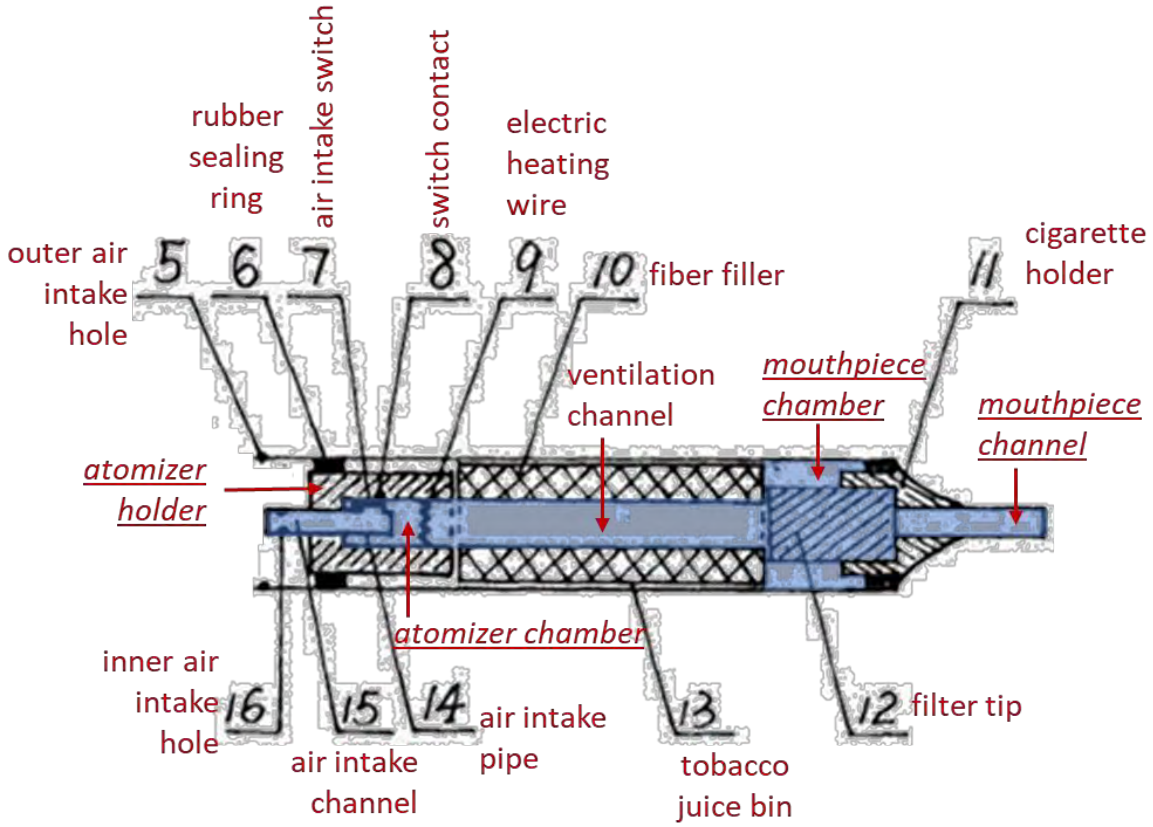
Wang '927 discloses an airflow passageway in the housing with at least a portion of the airflow passageway extending centrally and axially with respect to the housing, at least as NJOY interprets the claims and the airflow passageway (e.g., not requiring that the airflow passageway be separate from other claimed components, *see supra* n. 31). For example, Wang '927 discloses the air intake pipe 14 that includes air intake channel 15 for air to go through the air intake pipe and reach the electric heating wire 9. JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶345. The air intake pipe extends centrally and axially with respect to the housing. *Id.*

Wang '927 also discloses the "ventilation channel [] arranged in the middle of a [tobacco juice] bin body" where "the ventilation channel is made of a metal net with dense meshes." JX-0594 (Wang '927) at Fig. 1, JX-0594.3; *see also id.* at JX-0594.4("The tobacco juice bin 13 is a plastic round pipe. Fiber filler 10 is made into a ring shape and filled into a cigarette box 13. A circular-hole ventilation channel in the middle of the fiber filler 10 is made of a metal net to support fibers without deformation.") ; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 346; JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5. The ventilation channel extends centrally and axially with respect to the housing. *Id*. The C-shaped holder for the electric heating wire (*e.g.,* "atomizer holder") forms a chamber, (*e.g.,* "atomizer chamber") to connect the air coming out of the air intake channel 15 to the ventilation channel. *Id*. The atomizer chamber extends centrally and axially with respect to the housing. *Id.*

NJOY Exhibit 2008.0709
Juul v. NJOY
IPR2024-00161

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Wang '927 also discloses a chamber between the tobacco juice bin and the cigarette holder, (e.g., "mouthpiece chamber"), that allows the vaporized tobacco juice to reach to the user through the hollow center of the cigarette holder (*e.g.,* "mouthpiece channel"). JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5. The mouthpiece channel also extends centrally and axially with respect to the housing. *Id.* The air intake pipe extends centrally and axially with respect to the housing. *Id.* The image below highlights components in blue, including the air intake pipe, the air intake channel, atomizer chamber, ventilation channel, mouthpiece chamber, and mouthpiece channel. *Id.* These together comprise the airflow passageway that extends centrally and axially. *Id*.



See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end) (annotated in red and blue); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶347.

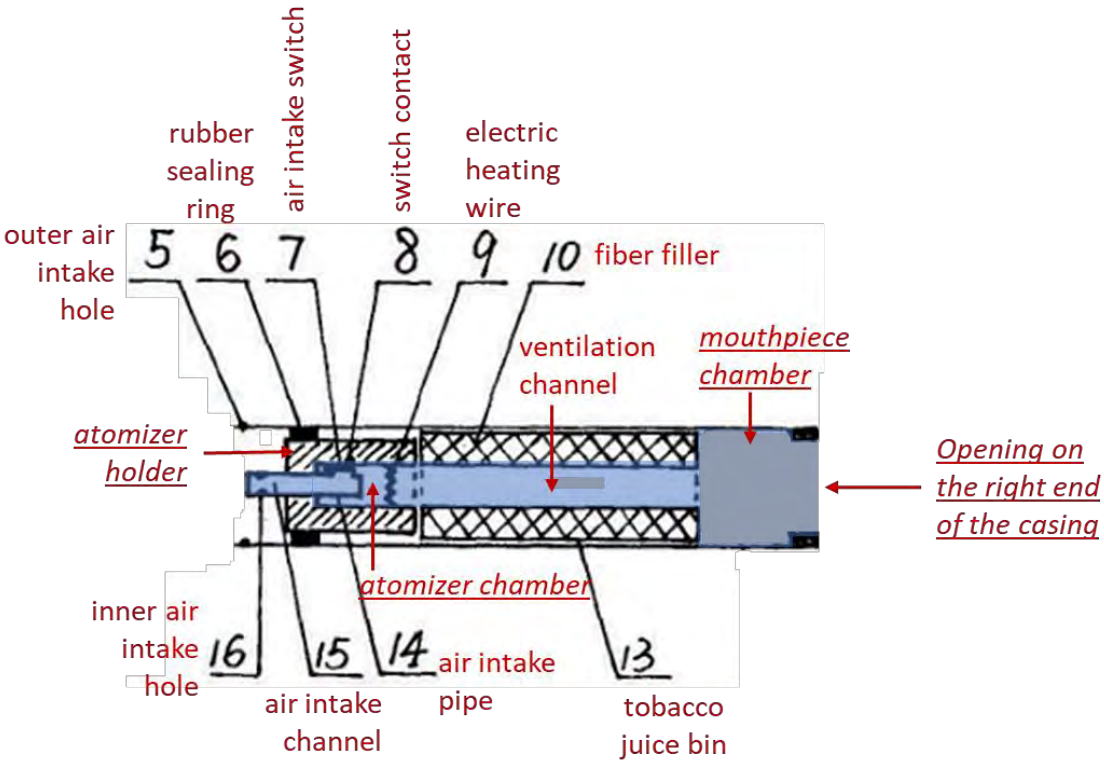
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Juul v. NJOY
IPR2024-00161

When a user draws from the cigarette holder 11, "negative pressure is produced in a smoke cavity of the casing." JX-0594 (Wang '927) at JX-0594.5 and Fig. 1; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶348. Air comes into the e-cigarette casing 18 through the outer air intake hole 5 and then to the inner air intake hole 16, travels around the electrical heating wire 9, carries heat generated by the electric heating wire 9, which causes tobacco juice in the fiber filler 10 in the tobacco juice bin 13 to vaporize. JX-0594 (Wang '927) at JX-0594.3 ("An air intake hole is opened at a position, where the air intake switch is installed, of the casing. The air intake switch consists of an air intake pipe and a switch. A small hole is arranged at a front end of the air intake pipe for air intake, and the switch is made of memory alloys."), JX-0594.5 ("Air carries heat generated by the electric heating wire 9, causing tobacco juice filled into the fiber filler in the tobacco juice bin 13 to vaporize to form smoke.") and Fig. 1. The vaporized tobacco juice passes through the ventilation channel, the filter tip, and eventually reaches the user's mouth via the cigarette holder. *Id.* at Fig. 1, JX-0594.3 ("The ventilation channel is arranged in the middle of a bin body, and the ventilation channel is made of a metal net with dense meshes."), JX-0594.3-4 ("The filter tip having a filtering function is installed on a front portion of the cigarette holder, and the filter tip can be replaced with a cigarette filter tip."), JX-0594.4("A circular-hole ventilation channel in the middle of the fiber filler 10 is made of a metal net to support fibers without deformation."); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 348.

To the extent NJOY argues that the cigarette holder cannot be part of the housing because it is detachable from the casing 18, Wang '927 discloses a central and axial airflow passageway including the air intake pipe, air intake channel, atomizer chamber, ventilation channel in the middle of the tobacco juice bin, and mouthpiece chamber as shown in the annotated figure below.

NJOY Exhibit 2008.0711
Juul v. NJOY
IPR2024-00161

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See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end and modified to remove the cigarette holder and the filter tip installed on it) (annotated in red and blue); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 349.

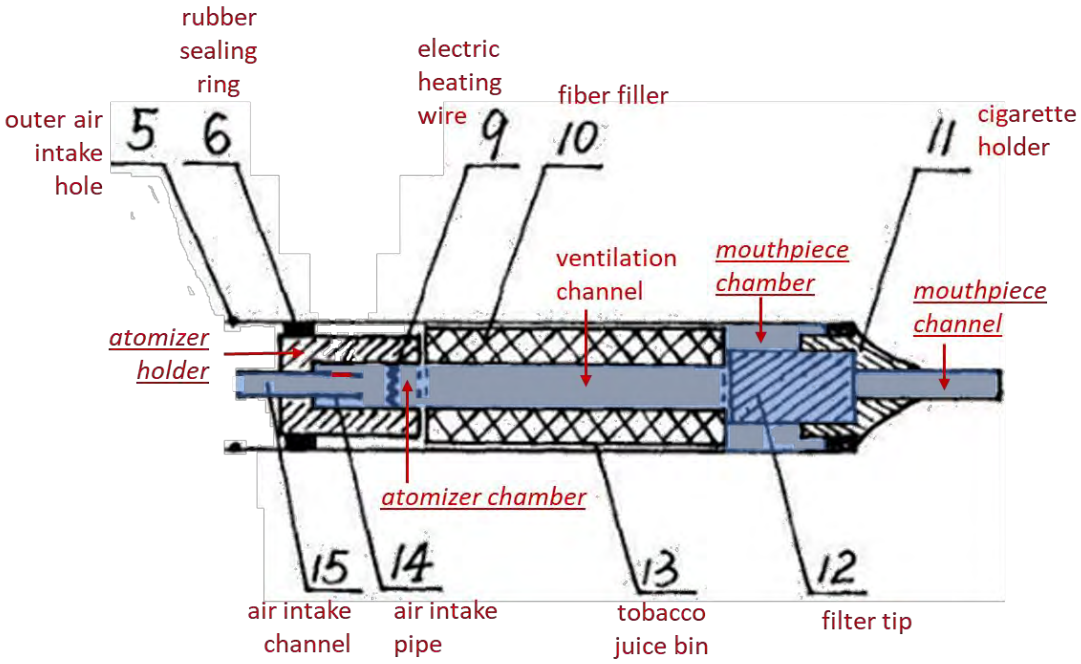
Further, as discussed above, Mr. Leinsing will opine that POSITA would be motivated to move the pressure switch to the battery portion. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶ 350; JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5; Section IV.G.1.xiii.b.4 *supra*. In that case, it would have been obvious for a POSITA to remove the air intake switch from the side surface of the air intake pipe and not to seal the right end of the air intake pipe. *Id.* It is beneficial to use existing opening on the end of the air intake pipe (which have two open ends) instead of welding on a plug at the end of the pipe to seal the end and because it is more expensive to weld screw machine parts. *Id.* It is beneficial to use existing side surface of the air intake pipe without creating a hole on the side surface to add the switch because it is more expensive to add side openings to

NJOY Exhibit 2008.0712
Juul v. NJOY
IPR2024-00161

[redacted]

screw machine parts. *Id.* Additionally, a POSITA would be motivated to use the opening of the air intake pipe instead of creating two holes on the side surface of the air intake pipe because it is more expensive to add side openings to screw machine parts. *Id.*

With such modifications, air coming in from the opening on the left end of the modified air intake pipe would flow in a central and straight line through the atomizer chamber, the ventilation channel, the mouthpiece chamber, the mouthpiece channel, and eventually to a user. *Id.* The airflow passageway accordingly includes the modified air intake pipe, including the air intake channel, the atomizer chamber, the ventilation channel in the middle of the tobacco juice bin, the mouthpiece chamber, and the mouthpiece channel, each of which individually and collectively extends centrally and axially with respect to the housing. *Id.*

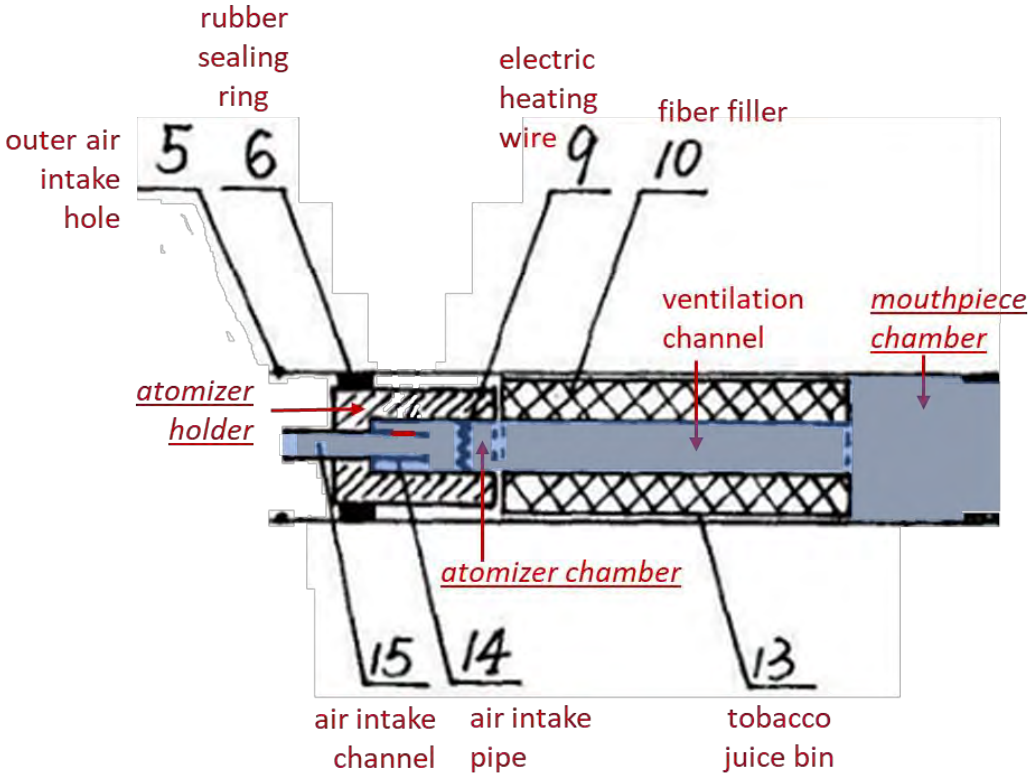


See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end with switch swapped to the battery portion) (annotated in red and blue) ; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶351.

NJOY Exhibit 2008.0713
Juul v. NJOY
IPR2024-00161

[redacted]

Under NJOY's interpretation where the mouthpiece does not need to be part of the cartridge, Wang '927 with modifications discussed above discloses a central and axial airflow passageway including the modified air intake pipe, including the air intake channel, the atomizer chamber, the ventilation channel in the middle of the tobacco juice bin, and the mouthpiece chamber as shown below, each of which individually and collectively extends centrally and axially with respect to the housing. JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5.



See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end with modified air intake pipe; modified to remove the cigarette holder and the filter tip installed on it) (annotated in red and blue); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 352.

NJOY Exhibit 2008.0714
Juul v. NJOY
IPR2024-00161

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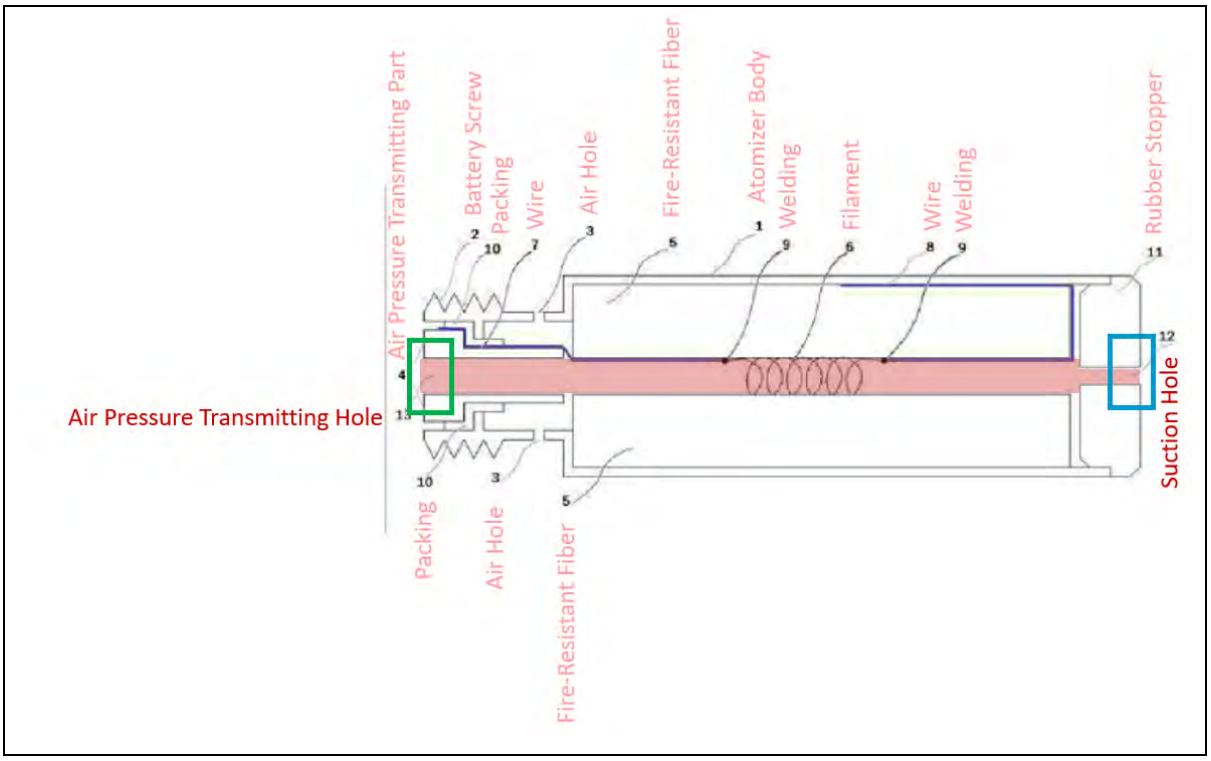
5. Han ’364 in view of Fang ’044 and NPRO Style – ’864 Patent, Claim 1[i]

The evidence will show that Han ’364 in view of Fang ’044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 282-286; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han ’364 certified English Translation) ; JX-0595 (Fang ‘044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit). NJOY and its expert do not dispute that Han ’364 discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant’s First Sup. Validity Contentions (03/12/2024)) at 893-897. CX-2726C (Vallee Reb. Rpt.) at Appx. C, ¶ 231.

For example, at least as NJOY interprets the claims and the airflow passageway (e.g., not requiring that the airflow passageway be separate from other claimed components, *see supra* n. 31), Han ’364 discloses a cartridge with holes that allow air to flow through the cartridge. *See* JX-0631 (Han ’364 certified English Translation) at [0013]; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶¶ 362-376. For example, Han ’364 discloses that if a user draws air through suction hole 12, air can flow through the cartridge (e.g., from air pressure transmitting hole 13 to suction hole 12). *See id.*, at [0013]. Air flows through the cartridge by way of an airflow passageway (annotated in red below) between portions of the fire-resistant fiber 5.

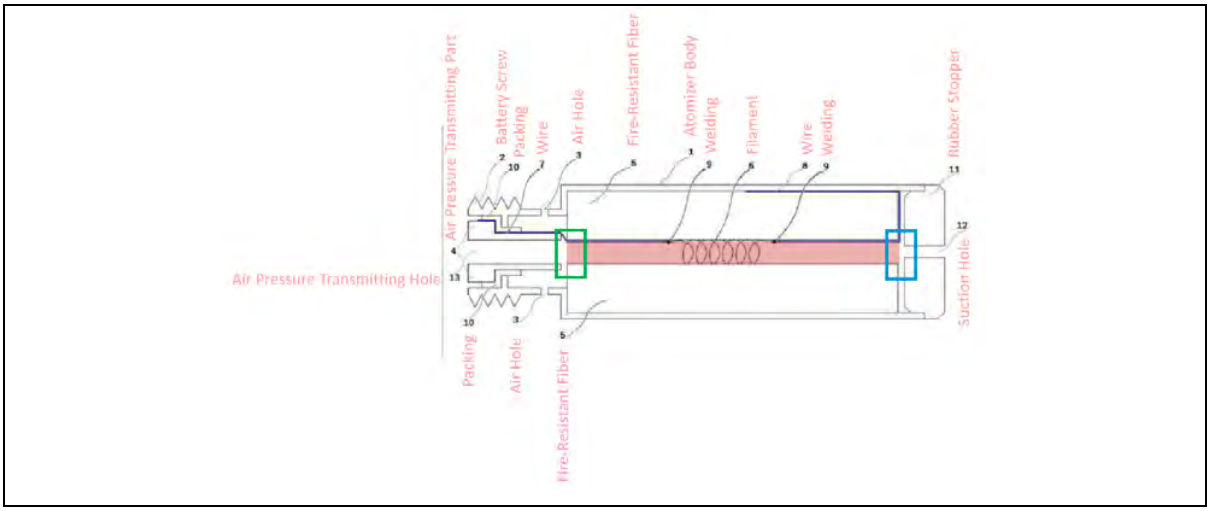
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Juul v. NJOY
IPR2024-00161

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See JX-0631 (Han '364 certified English Translation) at Fig. 1 (annotated); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 370-371.

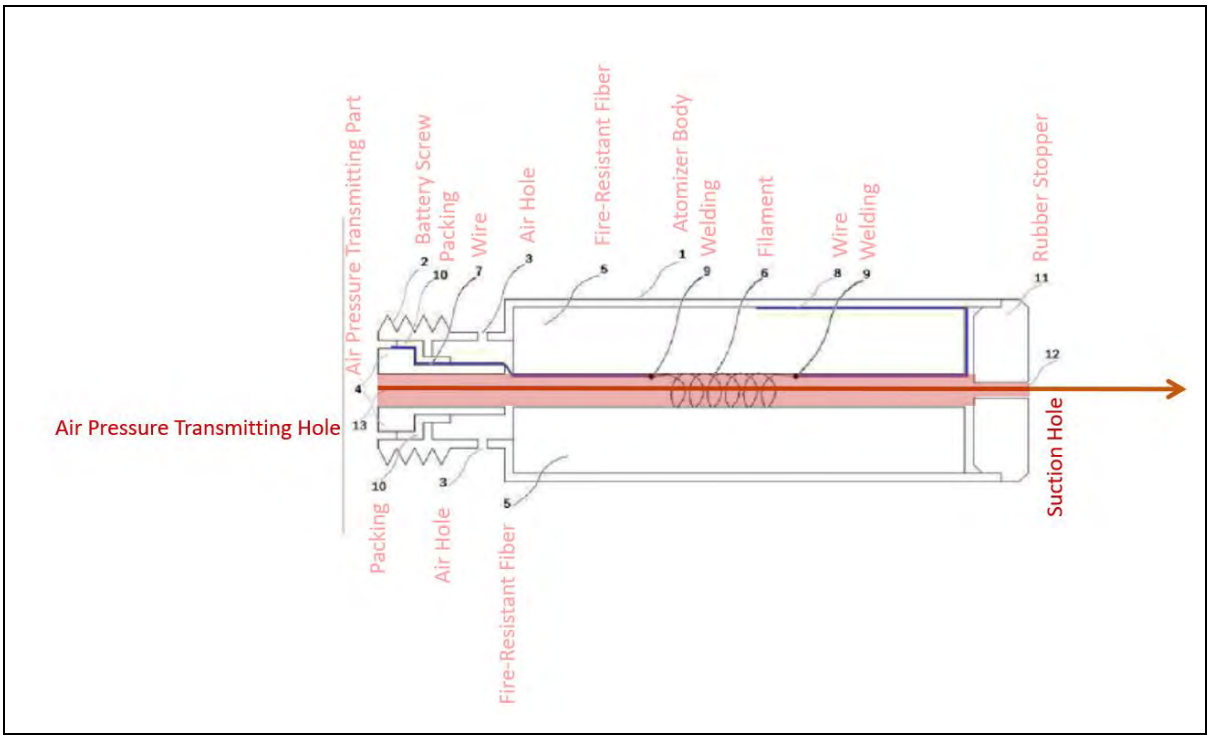
The evidence will show the airflow passageway can also span the area annotated below in red:



Id., at FIG. 1 (annotated); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 372.

[redacted]

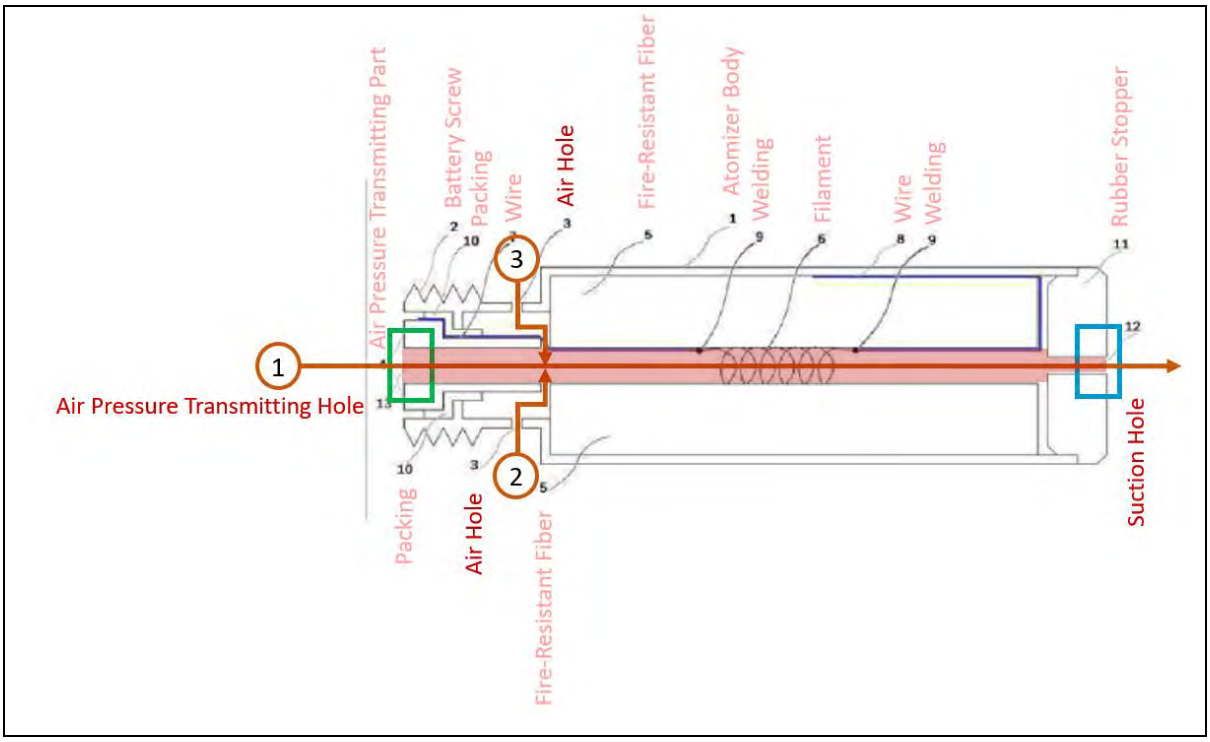
Han ’364 discloses, for example, that air can enter air pressure transmitting hole 13, and flow through the *passageway* annotated above (which lies between fire-resistant fiber 5 and across heating wire 6), out of suction hole 12. *See id.*, at [0013]. *See also id.*, at FIG. 1 (annotated below with an orange arrow):



As annotate below with additional orange arrows, while air can flow through air pressure transmitting hole 13 (see e.g., arrow #1), air can also flow into the cartridge via air holes 3 (e.g., arrows #2 and 3):

NJOY Exhibit 2008.0717
Juul v. NJOY
IPR2024-00161

[redacted]



See id. at FIG. 1 (annotated; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 375.

In many of the embodiments disclosed in Han '364, the airflow passageway is largely cylindrical in shape, e.g., to accommodate coiled filament 6/49. *See id.* at FIGs. 1, 3, 9; *see also id.* at [0013], [0015]. As is readily apparent from the figures shown above, Han '364 discloses airflow passageways where most if not all of the airflow passageway has a uniform diameter, allowing for uniform cross-sections across most of, or the entire, airflow passageway. *See id.* at FIGs. 1, 8-9.

6. Red Dragon in view of Fang '044 and Wang '927 – '864 Patent, Claim 1[i]

The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 282-287; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-

NJOY Exhibit 2008.0718
Juul v. NJOY
IPR2024-00161

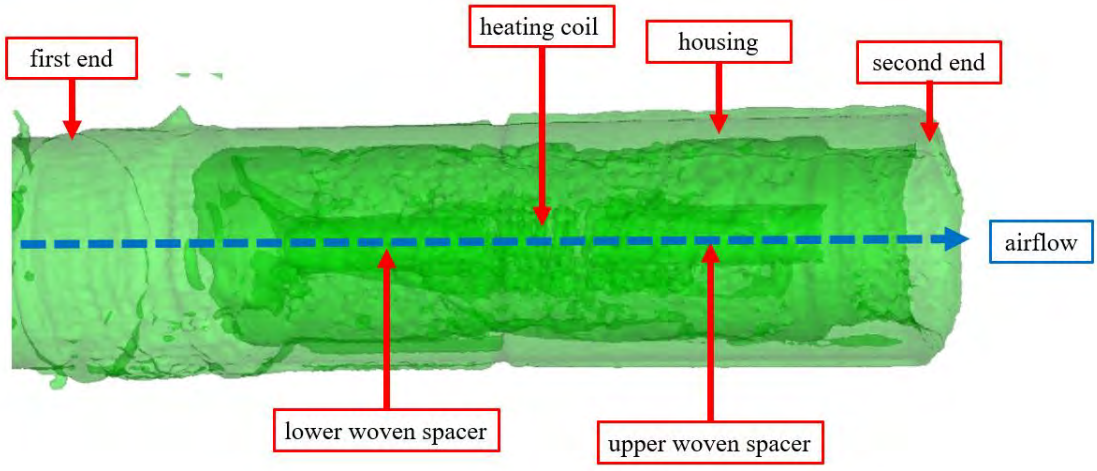
[redacted]

0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927). NJOY and its expert do not dispute that the Red Dragon discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 916-937; CX-2726C (Vallee Reb. Rpt.) at Appx. E, ¶ 114.

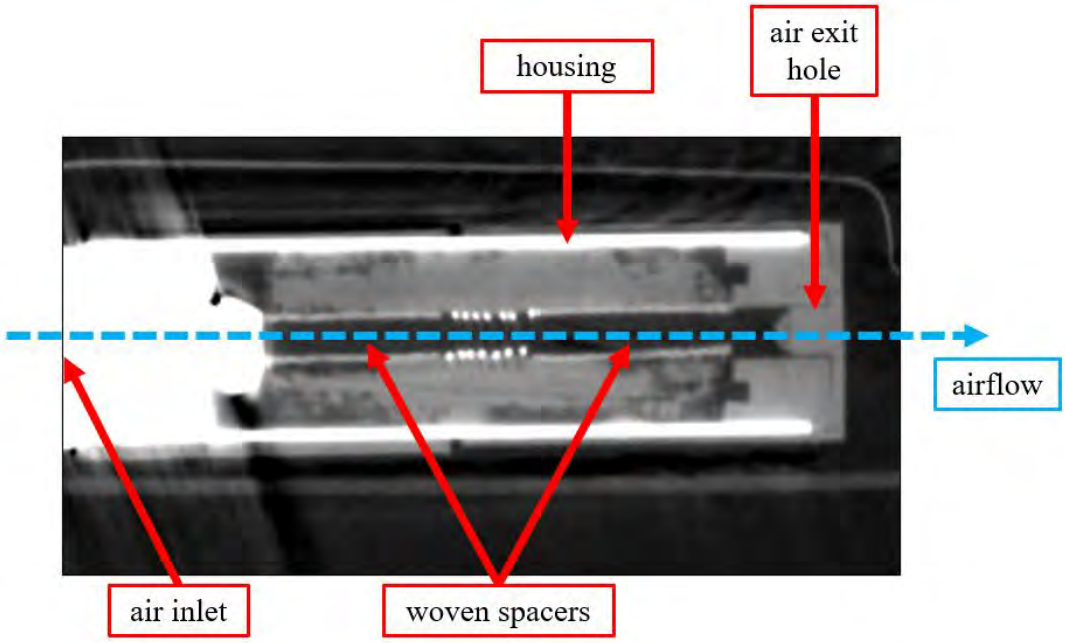
The evidence will show that the housing includes the Red Dragon Airflow Passageway which allows air coming in from the air inlet to flow through the center of the housing in a straight line to the air exit hole, at least as NJOY interprets the claims and the airflow passageway (e.g., not requiring that the airflow passageway be separate from other claimed components, *see supra* n. 31). *See, e.g.,* RX-0077 (CT Scans of Red Dragon Kit #2) at RX-0077.36; RX-0077 at RX-0077.22 ; RX-0074 (Photos of Red Dragon Kit #1) at RX-0074.51; *see also* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶¶ 282-287. The Red Dragon Airflow Passageway includes the two woven spacers and wicking material inside the batting material and which collectively surround the heating element and an area through which air can flow from the first aperture to the second aperture. *Id.; see also* RX-1126C (Evans 03/11/24 Tr.) at 88:3-7; 91:14-92:6. Further, the evidence will show the first aperture is located centrally and axially on the first end of the housing, that the second aperture is located centrally and axially on the second end of the housing, and that an airflow passageway extends from the first aperture to the second aperture. *Id*

NJOY Exhibit 2008.0719
Juul v. NJOY
IPR2024-00161

[redacted]



See RX-0077 (Photos of Red Dragon Kit #2) at RX-0077.36 (annotated in red); *see also* JX-0638C (Leinsing Invalidity Rpt., Appx. E) at ¶ 283.



See RX-0077 (Photos of Red Dragon Kit #2) at RX-0077.22 (annotated in red and blue); *see also* JX-0638C (Leinsing Invalidity Rpt., Appx. E) at ¶ 283.

NJOY Exhibit 2008.0720
Juul v. NJOY
IPR2024-00161

[redacted]

Dr. Vallee has admitted that Red Dragon included an airflow passageway and heating element. *See* RX-1015C (Vallee 4/12/24 Tr.) at 297:24-298:9.

7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '864 Patent, Claim 1[i]

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 273-277; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927). NJOY and its expert do not dispute that Smoke Fifty-One Duo discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 897-916; CX-2726C (Vallee Reb. Rpt.) at Appx. D, ¶ 71.

The evidence will show that the housing includes the Airflow Passageway which allows air coming in from the air inlet to flow through the center of the housing in a straight line to the air exit hole, at least as NJOY interprets the claims and the airflow passageway (e.g., not requiring that the airflow passageway be separate from other claimed components, *see supra* n. 31). *See, e.g.,* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 273-277.

Further, the evidence will show the first aperture is located centrally and axially on the first end of the housing, that the second aperture is located centrally and axially on the second end of the housing, and that an airflow passageway extends from the first aperture to the second aperture. *See, e.g.,* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 274-275.

Dr. Vallee has admitted that Smoke Fifty-One Duo included an airflow passageway and heating element. *See* RX-1015C (Vallee 4/12/24 Tr.) at 297:24-298:9.

NJOY Exhibit 2008.0721
Juul v. NJOY
IPR2024-00161

[redacted]

8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 1[i]

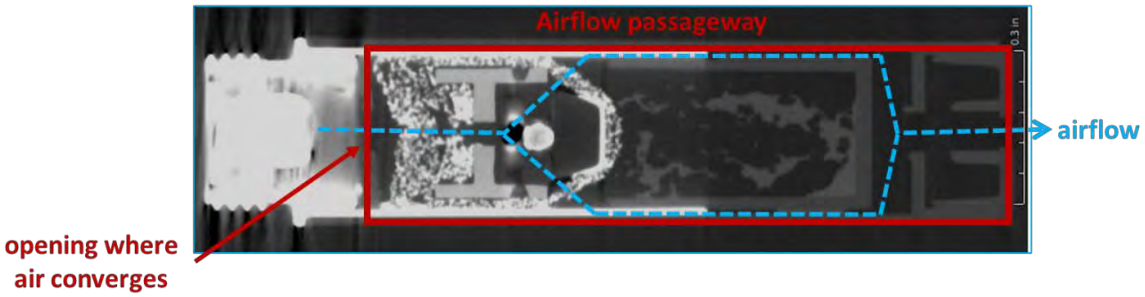
The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 276-281; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 548-612; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044). NJOY and its expert do not dispute that the NJOY NPRO discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 963-980; CX-2726C (Vallee Reb. Rpt.) at Appx. G, ¶ 208.

The evidence will show that the NJOY NPRO discloses an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing, wherein the airflow passageway extends centrally and axially from the first aperture to the second aperture, at least as NJOY interprets the claims and the airflow passageway (e.g., not requiring that the airflow passageway be separate from other claimed components, *see supra* n. 31). RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO).

The CT scan below shows the airflow passageway, annotated in red and defined by the circular wall of the housing, that extends centrally and axially with respect to the housing from the identified first aperture of the housing to the identified second aperture of the housing. *Id.*

NJOY Exhibit 2008.0722
Juul v. NJOY
IPR2024-00161

[redacted]



See JX-0404 (CT Scans of NJOY NPRO) at JX-0404.11 (annotated in red and blue)*see also* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 276-281.

The below photo of a portion of the cartridge section of the NPRO, taken from directly above the portion of the cartridge section, shows the space within the interior of the cartridge section, which forms the airflow passageway when the atomizer is attached. JX-0632C (Leinsing Invalidity Rpt.) at ¶ 569.



See RX-0082 (Photos of NJOY NPRO) at RX-0082.83 (annotated in red).

Additionally, a POSITA would be motivated to move to a central and axial through-hole by the NPRO E-Cig alone, the NPRO E-Cig in view of Wang '554, Wang '927, and/or Fang '044. JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 570. For example, as Mr. Leinsing will explain, this modification simplifies the airflow passageway, and to do so would simply require that the batting

NJOY Exhibit 2008.0723
Juul v. NJOY
IPR2024-00161

material have a cutout or tube through the middle, and would have several benefits. *Id.* This modification greatly simplifies the device, and allows for a larger liquid storage. *Id.*

Mr. Leinsing will also explain that this modification would improve the manufacturing of the device. JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 571. For example, having a central through-hole for an airflow passageway like the proposed modification makes assembly of the solution holding medium easier, as for example, batting or absorbent material can be stuffed into the device around a tube, without needing to worry about leaving the gap between the batting material and the housing. This requires less precision in manufacturing and eliminates the need to have parts suspending the batting material within the housing for example.

This modification would allow the batting material to be larger within the same size housing, as it could more extend further in both the radial and longitudinal directions. JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 572. For example, with the airflow proceeding through a through-hole in the middle of the batting material, there would no longer be a need to leave a gap between the batting material and the sidewall. This means that the liquid storage could occupy more radial space, and extend all the way to the inner edge of the housing, rather than stopping short to leave a gap. Though there would be a new gap in the middle of the liquid storage chamber, a POSITA would expect that the total volume of the new gap could be smaller than the total volume of the eliminated gap. For example, the airflow would be less turbulent and need to make fewer directional changes, so would flow more easily through a smaller total cross-sectional area. This modification also allows the batting material to extend further longitudinally, as it removes the need to have space for the airflow to return to the middle to exit the second aperture. *Id.; see also* JX-0646 (Leinsing Opening Rpt., Appx. S).

NJOY Exhibit 2008.0724
Juul v. NJOY
IPR2024-00161

[redacted]

This modification also improves the airflow through the device, because there are fewer directional changes and obstacles for the air and vapor to pass on its way to the second aperture. JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 573. For example, having the airflow passageway extend through a through-hole in the middle of the device eliminates the need for the air to change directions around obstacles such as the batting material. Having fewer directional changes and obstacles results in less suction being required by the user to draw air and vapor through the device, making it a more enjoyable experience. Having fewer directional changes and corners in the trajectory of the airflow also reduces the likelihood of condensation or only partially vaporized e-liquid collecting in corners within the device. The collection of liquid in corners of an airflow passageway could result in a sticky residue that could clog the airflow through the device.

This modification would also improve thermal insulation to the exterior of the device, something the prior art as a whole, and a POSITA in general would be concerned with. JX-0632C (Leinsing Invalidity Rpt.) at ¶ 574. For example, without thermal insulation between the vapor and the shell of the housing, the housing could heat up. This could for example cause the housing of the device to burn a user after repeated use. Additionally, adding thermal insulation between the shell and the vapor can better control the temperature of the vapor. This is important so that, no matter external conditions, the vapor has more consistent characteristics. If, for example, the device was used in cold weather, without insulation between the shell and the vapor, there could be increased condensation of the vapor within the pathway. Vapor condensation is undesirable because it reduces the vapor content of the air that the user receives, and also because it increases the risk of what is commonly referred to as "leakage" of liquid or undesirable ingestion of condensation droplets. For example, with increased condensation, the vapor condensate could be sucked by the user into their mouth, or following use of the device, could leak out of the

NJOY Exhibit 2008.0725
Juul v. NJOY
IPR2024-00161

[redacted]

mouthpiece and into a user's pocket for example. A POSITA would have understood that modifying the NPRO E-Cig to have the air flow through a central through-hole in the batting material would increase the thermal insulation between the shell and the vapor because the batting material itself would function as a thermal insulation barrier. *Id.*

Wang '554, Fang '044 and Wang '927 disclose a central and axial channel through which airflow passes, and a POSITA modifying the NPRO E-Cig in view of Wang '554, Fang '044 and/or Wang '927 would have been motivated to incorporate that design from either of those references for the reasons explained, including improved manufacturing, storage capacity, airflow, and insulation. JX-0632C (Leinsing Invalidity Rpt.) at ¶ 575.

This modification would have had predictable results, and a POSITA making it would have had a reasonable expectation of success. JX-0632C (Leinsing Invalidity Rpt.) at ¶ 576. For example, this modification is the result of a slight difference in the physical location of a gap for air to flow through that does not introduce any uncertainties as to the functionality of the overall device. For example, it was known in the art to use tubes or gaps located centrally and axially without any obstacles therein within cartridges, such as disclosed in numerous references including Wang '554, Wang '927 and Fang '044, so a POSITA would have understood that this was a viable and predictable way to design the device.

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 1[i]

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 276-281; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG);

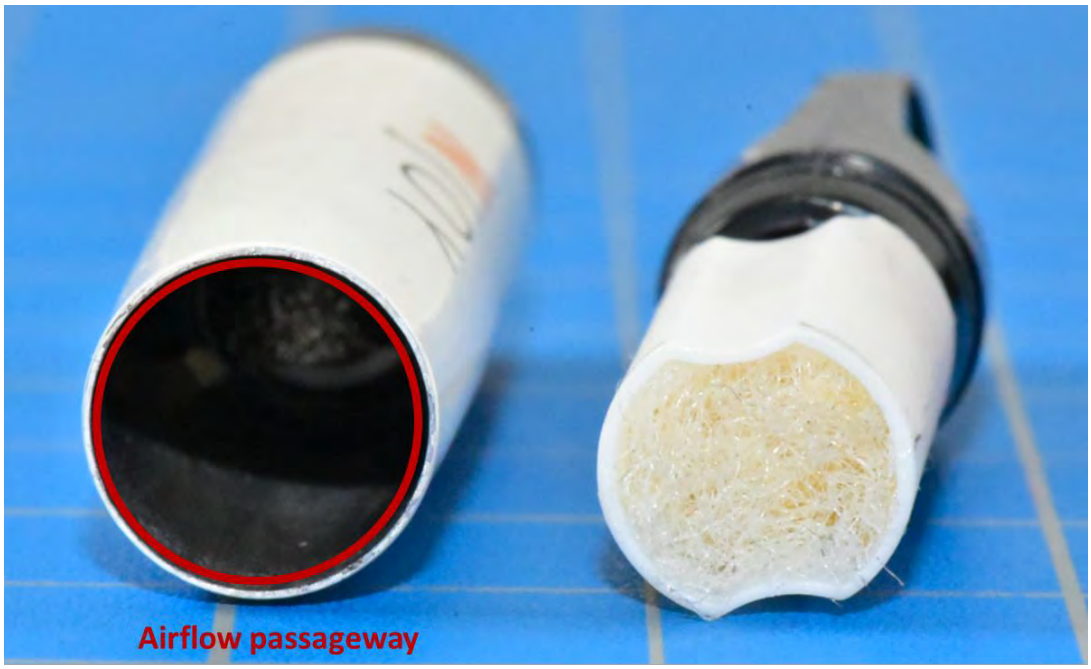
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Juul v. NJOY
IPR2024-00161

[redacted]

RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.



See JX-0402 (CT Scans of NJOY NCIG) at JX-0402.16 (annotated in red and blue).



See RX-0084 (Photos of NJOY NCIG) at RX-0084.86 (annotated in red).

10. Cigarette Electronique – '864 Patent, Claim 1[i]

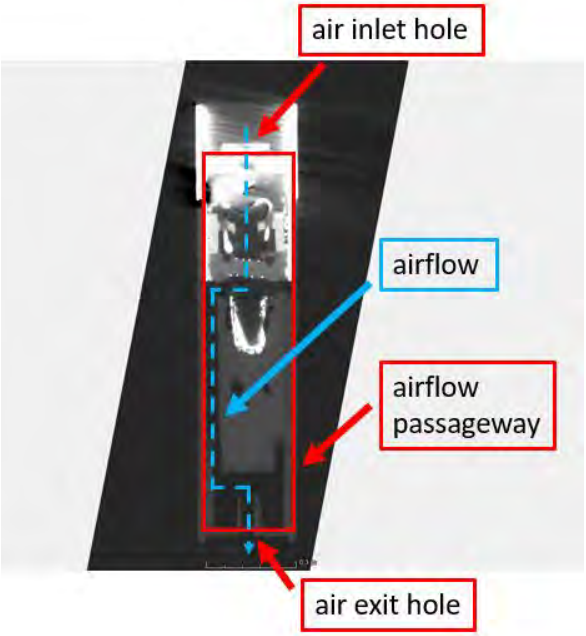
The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 335-340; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette

NJOY Exhibit 2008.0727
Juul v. NJOY
IPR2024-00161

[redacted]

Electronique Kit).. NJOY and its expert do not dispute that this limitation is met by the Cigarette Electronique. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 937-963; CX-2726C (Vallee Reb. Rpt.) at Appx. F, ¶ 167.

For example, the evidence will show the interior of the cartridge section of the Cigarette Electronique device, wherein the airflow passageway is a space within the interior of the cartridge, at least as NJOY interprets the claims and the airflow passageway (e.g., not requiring that the airflow passageway be separate from other claimed components, *see supra* n. 31).



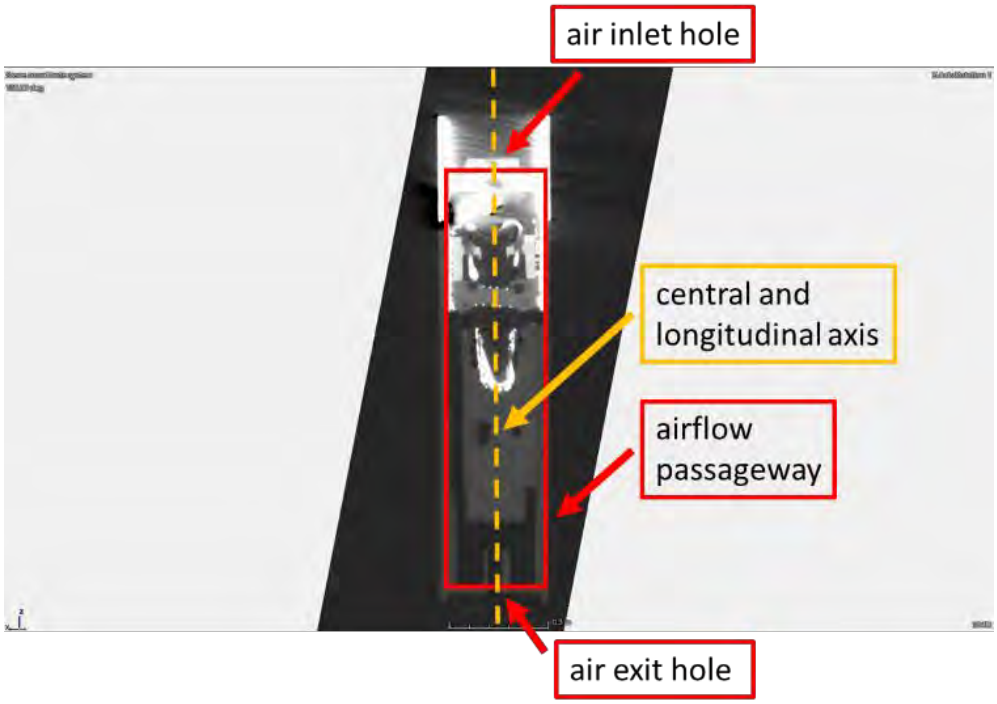
See JX-0401 (Photos of Cigarette Electronique) at JX-0401.5 (annotated in blue and red); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶¶ 525-535.

Further, Mr, Leinsing will opine that a POSITA would understand that the interior of the housing discussed would contain air. The CT scan below shows that the housing extends from the first aperture of the housing to the second aperture of the housing; therefore, a POSITA would understand that the housing includes an airflow passageway from the first aperture of the housing

NJOY Exhibit 2008.0728
Juul v. NJOY
IPR2024-00161

[redacted]

to the second aperture of the housing. Because the airflow passageway is defined by the circular wall of the housing, the airflow passageway extends centrally and axially with respect to the housing from the first aperture of the housing to the second aperture of the housing.



See JX-0401 (Photos of Cigarette Electronique) at JX-0401.5 (annotated in red and yellow); *see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 335-340.

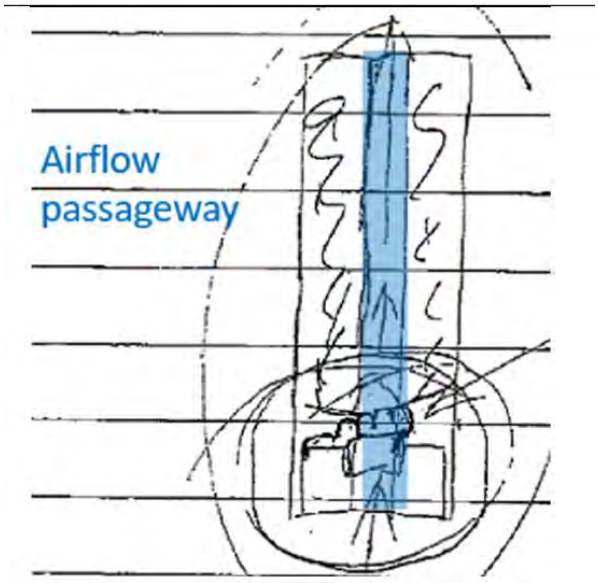
11. Fuma Prototype – '864 Patent, Claim 1[i]

The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 247-250; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

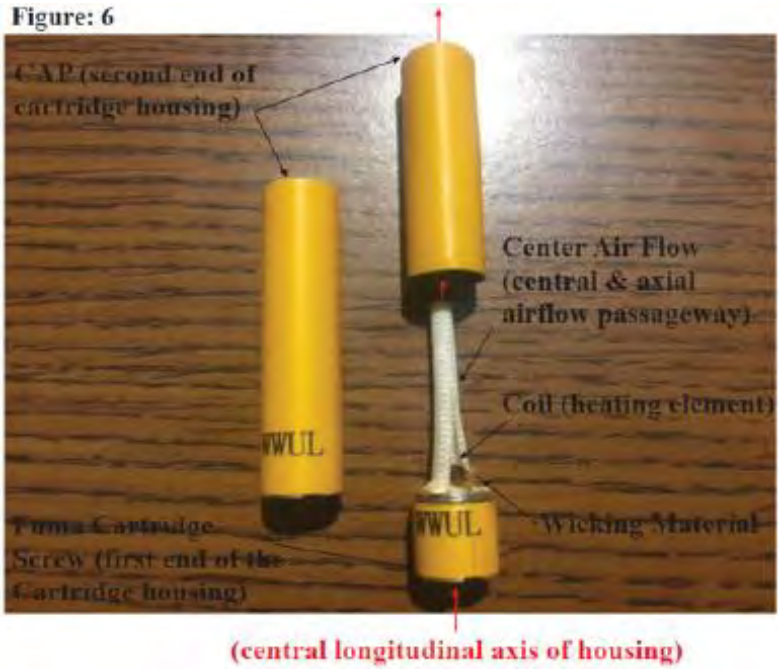
For example, the housing of the Fuma Prototype includes the woven spacer that extends in a straight path through the center of the housing and serves as the claimed airflow passageway at least as NJOY interprets the claims and the airflow passageway (e.g., not requiring that the airflow passageway be separate from other claimed components, *see supra* n. 31).

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Juul v. NJOY
IPR2024-00161

[redacted]



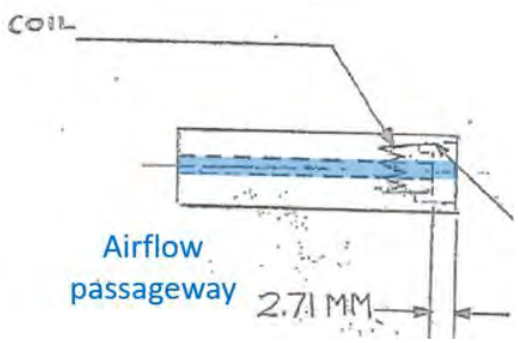
See '864 Priority Chart at 12 (citing CRTP Attachment C).



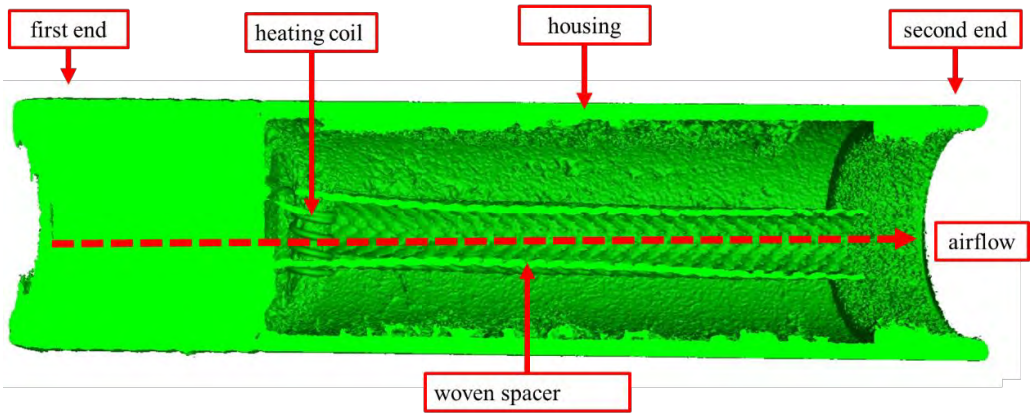
See '864 Priority Chart at 12 (citing CRTP Attachment D at Fig. 6).

NJOY Exhibit 2008.0730
Juul v. NJOY
IPR2024-00161

[redacted]

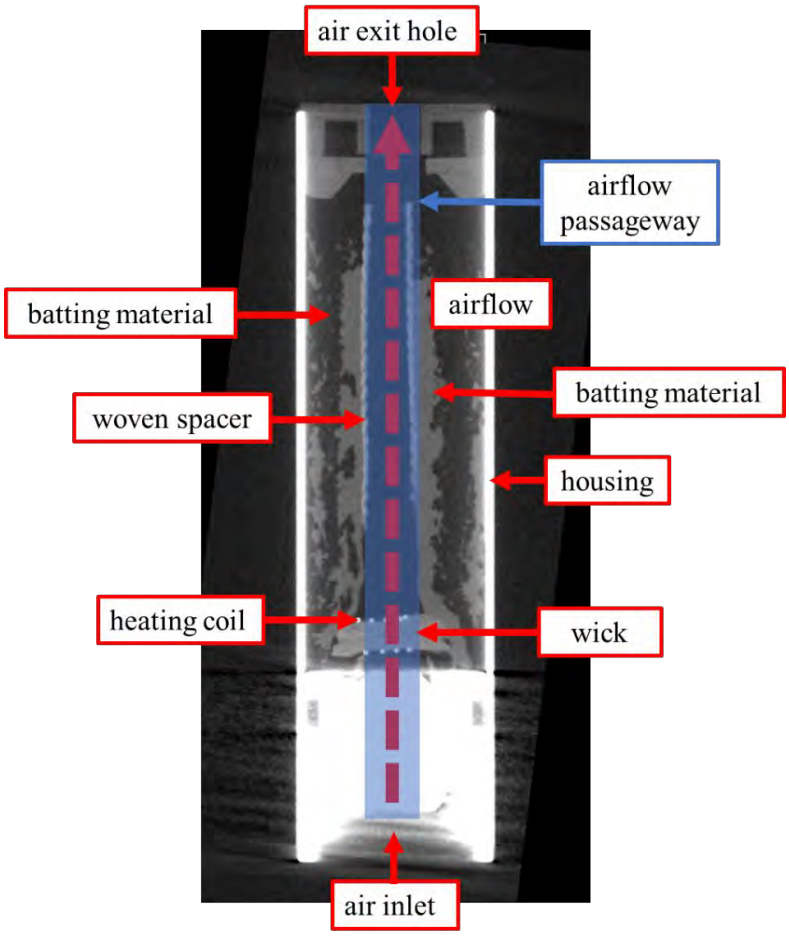


See '864 Priority Chart at 13 (citing CRTP Attachment E at FUMA-INSPECTION-0037).



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.1 (annotated in red).

[redacted]



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.17 (annotated in red).

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses claim element 1(i). *See* Conley '864 Declaration at ¶5 (Dependent claim 47).

NJOY also admitted that the Fuma Prototype discloses claim element 1(i). *See* '864 Priority Chart at 12-13.

NJOY Exhibit 2008.0732
Juul v. NJOY
IPR2024-00161

[redacted]

k. ’864 Patent, claim 1[j]: “wherein the airflow passageway extends centrally and axially from the first aperture to the second aperture”

1. Xia ’610 in view of Wang ’554 and Fang ’044 and Smoke Fifty-One Duo– ’864 Patent, Claim 1[j]

The evidence will show that Xia ’610 discloses or renders obvious, alone or in combination with Wang ’554 and Fang ’044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 784-789; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia ‘610); JX-0595 (Fang ‘044); RX-0130C (Declaration of Yardimici).

The evidence will show that the airflow passageway disclosed in Xia ’610 extends centrally and axially from the first aperture to the second aperture at least as NJOY interprets the claims and the central and axial requirement (including that the airflow can enter through non-central and non-axial apertures, that the airflow passageway need not be central and axial the entire length from the first aperture to the second aperture, and that the airflow passageway need not have central and axial airflow within it[32]). For example, the airflow passageway is defined by the spray hole 904

[32] For example, Complainant’s expert Dr. Vallee has testified that even an airflow passageway extending from a non-central first aperture can satisfy the claims. For example, with respect to the [redacted]. *See, e.g.,* RX-1014C (Vallee 4/11/24 Tr.) at 125:21-127:12; 136:15-138:8; Ex. 8.

Dr. Vallee has also testified that even where air flow must follow a circuitous route before approaching the heating element, the airflow passageway is still central and axial. *See, e.g.,* RX-1014C (Vallee 4/11/24 Tr.) at Ex. 4; 121:13-124:14 (describing drawing air flow as illustrated in Ex. 4). Dr. Vallee has also testified that where air flow must divert from being central to go on two sides of an obstacle, such as with the [redacted], the airflow passageway is still central and axial. *See, e.g.,* RX-1014C (Vallee 4/11/24 Tr.) at 140:11-143:17; Ex. 6; 144:24-147:22.

For example, Complainant’s expert Dr. Vallee has testified that an airflow passageway in which air flow is diverted by an obstacle, such as a wick is still central and axial. *See, e.g.,* RX-1014C (Vallee 4/11/24 Tr.) at 101:16-102:12 ([redacted]); 115:2-116:2 (testifying that the wick is an obstacle in the airflow passageway that makes the airflow not straight). Dr. Vallee also testified that where airflow is diverted by other components, such as part of the [redacted], the airflow passageway is still

NJOY Exhibit 2008.0733
Juul v. NJOY
IPR2024-00161

between the first aperture and the heating chamber, and by the heating chamber and interior of the suction nozzle from there, making it central and axial for the entire length between the first aperture and the second aperture. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 786-787.

At least at least as NJOY interprets the claims with respect to infringement (i.e., that the airflow can go around obstacles and still be "central and axial"), Xia '610's airflow occurs within an airflow passageway defined by the inner face of the left end of the suction nozzle 1301. For example, Xia '610 explains that "the soft suction nozzle 13 is arranged on a right end face of the generator," and "a left end 1301 of the soft suction nozzle 13 extends to the bottom of the liquid stopping sheet 8, and may be made of environmental-friendly materials such as polypropylene PP, which may effectively prevent internal heat from being transmitted out." JX-0596 (Xia '610) at JX-0596.13*; see also* JX-0632C (Leinsing Opening Rpt.) at ¶244. These components are illustrated in figure 5.

central and axial. See, e.g., RX-1014C (Vallee 4/11/24 Tr.) at 239:14-243:14; Ex. 15; 252:1-253:8. Dr. Vallee testified that where air "flow diverges into two and goes around [an obstruction], the average of the flow is central and axial," and therefore the airflow passageway in which it travels is central and axial. *See, e.g.,* RX-1014C (Vallee 4/11/24 Tr.) at 244:3-245:3. Even where the air flow "is not a completely straight path from the first aperture to the second," and "has to go around the obstacles," the air flow "is substantially straight" and satisfies the claims. *See, e.g.,* RX-1014C (Vallee 4/11/24 Tr.) at 246:15-247:23.

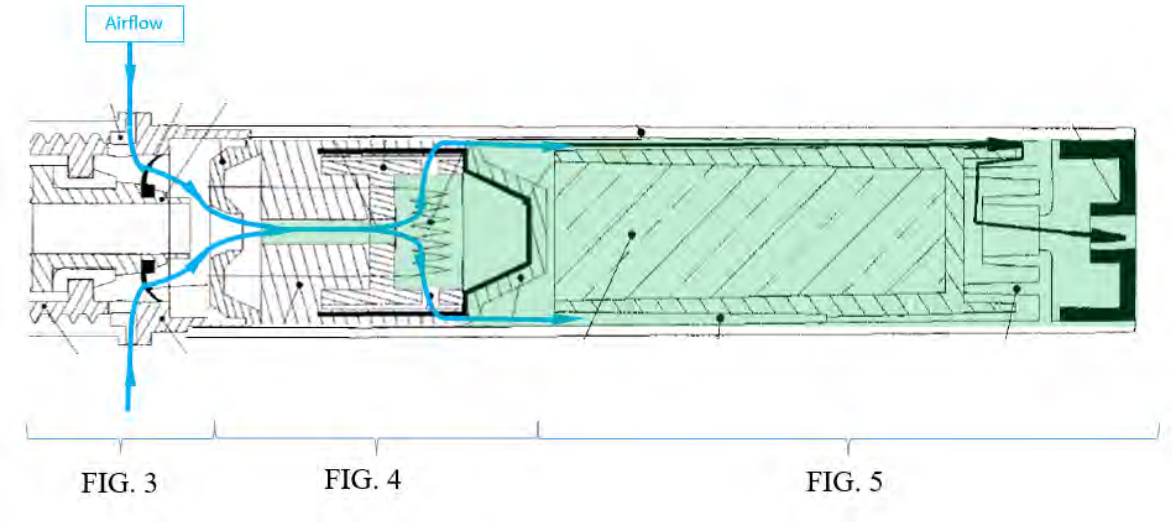
Dr. Vallee has testified that to satisfy claim 1 of the '881 patent, the airflow passageway does not need to be central and axial along the entire length of the cartridge between the first aperture and the second aperture. See, e.g., RX-1015C (Vallee 4/12/24 Tr.) at 390:20

Dr. Vallee has also testified that airflow passageways that contain non-central and axial walls, indeed walls that are perpendicular to the central longitudinal axis, can still satisfy the claims because they are "essentially central and axial." See, e.g., RX-1015C (Vallee 4/12/24 Tr.) at 426:21-427:5; see also id. at 422:25-428:1. Dr. Vallee has testified that the fact that an e-cigarette cartridge's airflow passageway has horizontal portions (i.e., portions perpendicular to the central longitudinal axis) does not preclude it from satisfying the claims' requirements for a central and axial airflow passageway. See, e.g., RX-1015C (Vallee 4/12/24 Tr.) at 429:18-430:2

NJOY Exhibit 2008.0734
Juul v. NJOY
IPR2024-00161

[redacted]

For example, the following annotated and combined version of Figures. 3-5 illustrates Xia '610's airflow passageway at least as NJOY interprets that term:



See JX-0596 (Xia '610) at FIGs 3-5*; see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 245.

To the extent that Xia '610 does not disclose this limitation under NJOY's interpretation, Xia '610 alone, Xia '610 in view of Wang '554, and Xia '610 in view of Fang '044, Xia '610 in view of Smoke Fifty-One Duo and Xia '610 in view of Wang '554 and Fang '044 and Smoke Fifty-One Duoand Smoke Fifty-One Duo render it obvious for the reasons discussed below.

Xia '610 discloses an airflow passageway within the generator portion at least as NJOY interprets the claims. For example, Xia '610 explains that air flows through the device from left to right as illustrated in FIG. 2: "under the action of suction by the smoker, airflow enters the inside of the generator from the air inlets 702 on a side surface of the generator, under the action of the airflow, the vibrating diaphragm 7 vibrates … the heater 9 starts working, the chemical liquid is instantly vaporized in an atomizing working room of the heater 9, and the vaporized chemical liquid is sucked out by the smoker from the soft suction nozzle 13." JX-0596 (Xia '610) at JX-0596.10*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 786.

NJOY Exhibit 2008.0735
Juul v. NJOY
IPR2024-00161

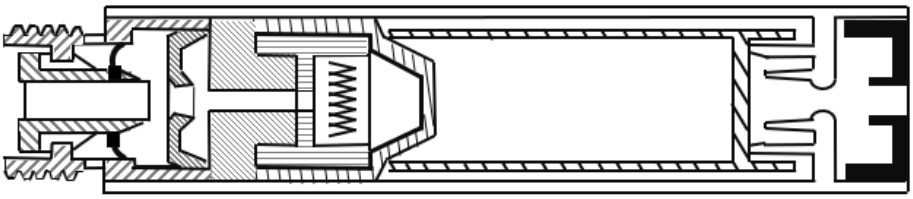
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For example, as described above, Xia ’610 discloses that air flows through the generator portion from the left end of the generator as illustrated in FIG. 2 to the right end. Xia ’610 further explains that the airflow travels through the generator portion from the left end to the right end, past the liquid storage chamber 12: “the connecting conductor A5 is provided with air inlets 702 (see Fig. 3), a gap which is used as an airflow channel is left between the soft suction nozzle 13 and the liquid storage chamber 12 (see Fig. 5).” JX-0596 (Xia ‘610) at JX-0596.10*; see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 246.

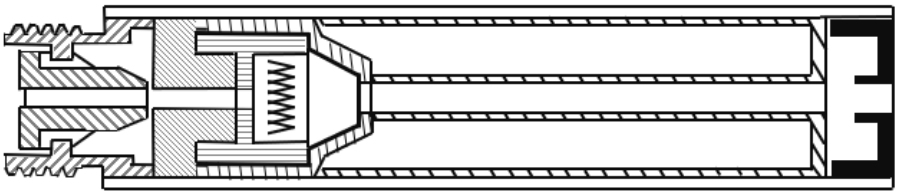
Further, to the extent the claims require “only the heating element obstructing a portion of the airflow through the airflow passageway along the central longitudinal axis of the housing,” (claims 5, 25, and 45 of the ’864 Patent), a POSITA would be motivated to move to a central and axial through-hole by Xia ’610 alone, Xia ’610 in view of Wang ’554, and Xia ’610 in view of Fang ’044, Xia ’610 in view of Smoke Fifty-One Duo, and Xia ’610 in view of Wang ’554 and Fang ’044 and Smoke Fifty-One Duoand Smoke Fifty-One Duo. *See* JX-0632C (Leinsing Opening Rpt.) at ¶¶ 246-247. For example, this modification simplifies the airflow passageway, and to do so would simply require that the liquid storage 12 have a cutout through the middle, and would have several benefits. Along with moving the air intake to the controller portion, this modification greatly simplifies the device, and allows for a larger liquid storage chamber 12 (e.g., by moving the heating chamber leftward). For example, the following images illustrate the difference between Xia ’610’s original design and an example obvious modification of it:

NJOY Exhibit 2008.0736
Juul v. NJOY
IPR2024-00161

[redacted]



Original



Modified

See JX-0632C (Leinsing Opening Rpt.) at ¶ 247.

Mr. Leinsing will opine that this modification would improve the manufacturing of the device. For example, having a central through-hole for an airflow passageway like the proposed modification makes assembly of the solution holding medium easier, as for example, batting or absorbent material can be stuffed into the device around a tube, without needing to worry about leaving the "gap which is used as an airflow channel [] left between the soft suction nozzle 13 and the liquid storage chamber 12" described by Xia '610. JX-0596 (Xia '610) at JX-0596.10*; see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 248. This requires less precision in manufacturing and eliminates the need to have parts suspending the liquid storage chamber within the housing for example.

This modification would allow the liquid storage 12 to be larger within the same size housing, as it could more extend further in both the radial and longitudinal directions. *See* JX-0632C (Leinsing Opening Rpt.) at ¶249. For example, with the airflow proceeding through a

NJOY Exhibit 2008.0737
Juul v. NJOY
IPR2024-00161

through-hole in the middle of the liquid storage 12, there would no longer be a need to leave "a gap which is used as an airflow channel [] between the soft suction nozzle 13 and the liquid storage chamber 12" as in Xia '610's illustrated design. This means that the liquid storage could occupy more radial space, and extend all the way to the inner edge of the housing, rather than stopping short to leave a gap. Though there would be a new gap in the middle of the liquid storage chamber, a POSITA would expect that the total volume of the new gap could be smaller than the total volume of the eliminated gap. For example, the airflow would be less turbulent and need to make fewer directional changes, so would flow more easily through a smaller total cross-sectional area. This modification also allows the liquid storage 12 to extend further longitudinally, as it removes the need to have space for the airflow to return to the middle to exit the second aperture (such as illustrated by the directional changes in Xia '610's figure 5). Example calculations based on Xia's figures demonstrate that the total volume of the solution holding medium could be larger with a through-hole airflow passageways as proposed:

	Xia '610		
	Figure 5	**Modified Figure 5**	**% Increase**
Airflow Path Cross-Sectional Area	0.043	0.028	-34
Batting Volume	0.107	0.227	113
	With the same airflow passageway area:		
	Figure 5	**Modified Figure 5**	**% Increase**
Airflow Path Cross-Sectional Area	0.043	0.043	0
Batting Volume	0.107	0.207	93

See JX-0632C (Leinsing Opening Rpt.) at ¶249.

This modification also improves the airflow through the device, because there are fewer directional changes and obstacles for the air and vapor to pass on its way to the second aperture. For example, having the airflow passageway extend through a through-hole in the middle of the

NJOY Exhibit 2008.0738
Juul v. NJOY
IPR2024-00161

device eliminates the need for the air to change directions around obstacles such as the liquid storage chamber 12 as described in Xia '610. *See* JX-0632C (Leinsing Opening Rpt.) at ¶ 250. Having fewer directional changes and obstacles results in less suction being required by the user to draw air and vapor through the device, making it a more enjoyable experience. Having fewer directional changes and corners in the trajectory of the airflow also reduces the likelihood of condensation or only partially vaporized e-liquid collecting in corners within the device. The collection of liquid in corners of an airflow passageway could result in a sticky residue that could clog the airflow through the device.

This modification would also improve thermal insulation to the exterior of the device, something Xia '610 is specifically concerned with. For example, Xia '610 claims an electronic cigarette "characterized in that a heat insulation layer is further arranged in the stainless steel shell of the generator." JX-0596 (Xia '610) at JX-0596.3 (claim 4)*; see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 251. Xia '610 describes an example heat insulation layer: "a left end 1301 of the soft suction nozzle 13 extends to the bottom of the liquid stopping sheet 8, and may be made of environmental-friendly materials such as polypropylene PP, which may effectively prevent internal heat from being transmitted out." JX-0596 (Xia '610) at JX-0596.13*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 251. A POSITA would agree with Xia '610's attention to thermal insulation for multiple reasons. For example, as explained by Xia '610, without thermal insulation between the vapor and the shell of the housing, the housing could heat up. This could for example cause the housing of the device to burn a user after repeated use: "[t]he purpose of the heat insulation layer is to avoid potential safety hazards caused by a high temperature of the heater 9." JX-0596 (Xia '610) at JX-0596.11*; see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 251. Additionally, adding thermal insulation between the shell and the vapor can better control the

NJOY Exhibit 2008.0739
Juul v. NJOY
IPR2024-00161

temperature of the vapor. This is important so that, no matter external conditions, the vapor has more consistent characteristics. If, for example, the device was used in cold weather, without insulation between the shell and the vapor, there could be increased condensation of the vapor within the pathway. Vapor condensation is undesirable because it reduces the vapor content of the air that the user receives, and also because it increases the risk of what is commonly referred to as "leakage" of liquid or undesirable ingestion of condensation droplets. For example, with increased condensation, the vapor condensate could be sucked by the user into their mouth, or following use of the device, could leak out of the mouthpiece and into a user's pocket for example. A POSITA would have understood that modifying Xia '610 to have the air flow through a central through-hole in the liquid storage chamber 12 would increase the thermal insulation between the shell and the vapor because the liquid storage chamber 12 itself would function as a thermal insulation barrier. Additionally, the "left end 1301" could still be included, and be used as part of the barrier between the liquid storage chamber 12 and the new airflow passageway. *See* JX-0632C (Leinsing Opening Rpt.) at ¶ 251.

Wang '554 and Fang '044 and Smoke Fifty-One Duo each disclose a central and axial channel through which airflow passes, and a POSITA modifying Xia '610 in view of Wang '554 and/or in view of Fang '044 and/or in view of Smoke Fifty-One Duo would have been motivated to incorporate that design from either of those references for the reasons explained, including improved manufacturing, storage capacity, airflow, and insulation.

This modification would have had predictable results, and Mr. Leinsing will opine that a POSITA making it would have had a reasonable expectation of success. *See* JX-0632C (Leinsing Opening Rpt.) at ¶ 253. For example, this modification is the result of a slight difference in the physical location of a gap for air to flow through that does not introduce any uncertainties as to the

NJOY Exhibit 2008.0740
Juul v. NJOY
IPR2024-00161

functionality of the overall device. For example, it was known in the art to use tubes or gaps located centrally and axially without any obstacles therein within cartridges, such as disclosed in numerous references including Wang '554 and Fang '044 and Smoke Fifty-One Duo, so a POSITA would have understood that this was a viable and predictable way to design the device.

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '864 Patent, Claim 1[j]

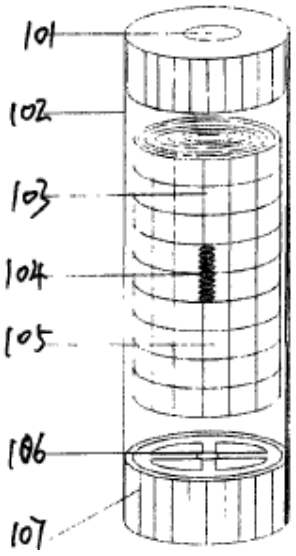
The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 790-795; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

Wang '554 discloses a central and axial airflow passageway at least as NJOY interprets the claims and the central and axial requirement (including that the airflow can enter through non-central and non-axial apertures, that the airflow passageway need not be central and axial the entire length from the first aperture to the second aperture, and that the airflow passageway need not have central and axial airflow within it, *see* n. 3). For example, the evidence will show that Wang '554 discloses an airflow passageway within the cartridge: "the air inlet 106 of the cigarette holder, an internal gap of the cigarette holder and the air outlet 101 of the cigarette holder form the complete airflow channel." RX-0005 (Wang '554) at RX-0005.8; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 775. Wang '554 also explains that "The cigarette holder shell 102 is a hollow cylinder with one end being one end of the air inlet 106 … The other end is one end of the air outlet 101… The interior of the shell 102 provides a space for the electric heater 104 and the tobacco extract 103 and organic fiber 105 wound around it, and also provides a space for smoke produced when the tobacco extract 103 in the organic fiber 105 is heated by the electric heater

NJOY Exhibit 2008.0741
Juul v. NJOY
IPR2024-00161

[redacted]

104." RX-0005 (Wang '554) at RX-0005.7; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 775.



See RX-0005 (Wang '554) at Fig. 3; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 775.

Wang '554 describes that, within the cigarette holder part, "[t]he organic fiber 105 of the cigarette holder is a natural wood fiber or natural absorbent paper, especially a fiber made of natural tobacco." RX-0005 (Wang '554) at RX-0005.7; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 776. Mr. Leinsing will opine that a POSITA would understand that the description of the organic fiber as "wood fiber or natural absorbent paper," combined with its description as being "wound around" the heater, and "provid[ing] a space for electric heater" means that the organic fiber 105 is a roll of paper-like material that has a generally cylindrical passageway running centrally and axially through it.

Additionally, Wang '554 illustrates the organic fiber 105 in figure 5 for example, which shows the same configuration, *i.e.,* a roll with a generally cylindrical hole running centrally and axially through it:

NJOY Exhibit 2008.0742
Juul v. NJOY
IPR2024-00161

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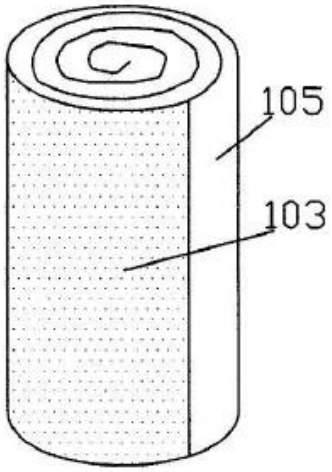


图 5

See RX-0005 (Wang '554) at FIG. 5; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 777.

To the extent solution holding medium 105 does not already have a separate passageway through the middle, Mr. Leinsing will opine that it would be an obvious modification. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 778. Instead of requiring the air to flow through the fiber, a more defined central passageway would increase airflow through the cartridge, and decrease the likelihood that the air would acquire liquid drops when passing through the fiber material, which would be undesirable for a user to receive when sucking.

Wang '554 discloses an airflow passageway at least as NJOY interprets the claims. Within the cigarette holder part, Wang '554 describes that "the air inlet 106 of the cigarette holder, an internal gap of the cigarette holder and the air outlet 101 of the cigarette holder form the complete airflow channel." RX-0005 (Wang '554) at RX-0005.8; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 277. Wang '554 also explains that "The cigarette holder shell 102 is a hollow cylinder with one end being one end of the air inlet 106 … The other end is one end of the air outlet 101…

NJOY Exhibit 2008.0743
Juul v. NJOY
IPR2024-00161

The interior of the shell 102 provides a space for the electric heater 104 and the tobacco extract 103 and organic fiber 105 wound around it, and also provides a space for smoke produced when the tobacco extract 103 in the organic fiber 105 is heated by the electric heater 104." RX-0005 (Wang '554) at RX-0005.7; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 277.

Wang '554 discloses that the e-cigarette's working sequence is "a smoking motion causes airflow to enter the interior of the cigarette rod through the air inlet 115 of the cigarette rod, the sensor 112 is driven to transmit a switching signal to the control circuit board 113, the control circuit board 113 drives the heater 104 connected together through terminals to work, at the same time, the airflow reaches the internal gap of the cigarette holder through the air outlet 108 of the cigarette rod and the air inlet 106 of the cigarette holder, and the smoke generated by the tobacco extract 103 instantly heated by the heater 103 is partially sucked out from the air outlet 101 of the cigarette holder." RX-0005 (Wang '554) at RX-0005.8; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 278.

Wang '554 describes the organic fiber 105 in its figures as "wound around" the heater, and illustrates it as a wrapped sheet in figure 5. This demonstrates that the organic fiber is a wrapped sheet, which has a central cylindrical gap, in which the heating coil resides.

To the extent that it is determined that a separate structure defining the airflow passageway is needed to meet the claim limitations, Mr. Leinsing will opine that a POSITA would also have been motivated to add a tube to the center of Wang '554's batting material. *See* JX-0632C (Leinsing Opening Rpt.) at ¶ 282. For example, adding a central tube can improve the leak resistance of the device, preventing leakage through the mouthpiece, and reducing the likelihood of delivery of un-vaporized droplets reaching the user in the airflow. This is because the liquid storage is more

NJOY Exhibit 2008.0744
Juul v. NJOY
IPR2024-00161

separated from the airflow with the addition of a tube. For example, a POSITA would have been motivated to add the gas pipe 8 from Fang ’044 into Wang ’554 when combining the references.

Dr. Vallee asserts that this modification would make it so the fiber was no longer in close contact with the heating element, resulting in less efficient heating of the nicotine soaked in the organic fiber and less structural integrity for the heating element, but does not explain how or why this is the case. For example, the heating element could still be in direct contact with the fiber, even with a more defined airflow passageway therein. This prevents both of the alleged issues that Dr. Vallee incorrectly assumes the modification would have. Dr. Vallee also argues that the fiber would swell to close an airflow channel, but ignores that the proposed modification further includes the possible addition of a tube, similar to gas pipe 8 disclosed in Fang ’044, to maintain the structure of the airflow passageway.

Dr. Vallee asserts that in the original design of Wang ’554, air permeates the organic fiber, and that the organic fiber acts as the first barrier for any accumulating liquid, but ignores that as the air allegedly permeates the soaked fiber, it would pick up additional liquid. For example, even a dry air that “permeates” a soaked fiber would be likely to pick up droplets, and this would occur immediately before going to a user’s mouth. For example, the evidence will show that this is how many non-heating evaporative humidifiers work. *See, e.g.,* U.S. 4,064,203A, U.S. 5,034,162, U.S. 5,143,655 and U.S. 5,143,656. The introduction of a tube or other structure defining the airflow passageway prevents this evaporative humidifying effect. Indeed, with the fiber being soaked, there is no reason to believe that air would “permeate” it sufficiently for there to be enough airflow to a user, or that the fiber would have the capacity to accept any more liquid such that any droplets would be absorbed into it as the air passes through. For example, a more saturated material generally has a lower affinity for liquid than the same material when less saturated.

NJOY Exhibit 2008.0745
Juul v. NJOY
IPR2024-00161

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Dr. Vallee asserts that JLI fails to provide any explanation for how the various components inside the gas pipe of Fang '044 such as the wick and heating filament would be supported and operational. First, the proposed modification is the incorporation of the tube labeled "gas pipe 8" in Fang '044, which does not appear to include the heating chamber in which the wick and heating filament are located. Additionally, to the extent those components would need to be included while including the gas pipe, they would be included as disclosed in Fang '044. Moreover, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. The combined teachings suggest to a POSITA that a tube could be used to define an airflow passageway within a solution holding medium.

3. Fang '044 in view of Xia '610 and Wang '554 and Smoke Fifty-One Duo – '864 Patent, Claim 1[j]

The evidence will show that Fang '044 discloses or renders obvious, alone or in combination with Xia '610 and Wang '554 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 796-800; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici).

Fang '044 discloses a central and axial airflow passageway at least as NJOY interprets the claims and the central and axial requirement (including that the airflow can enter through non-central and non-axial apertures, that the airflow passageway need not be central and axial the entire length from the first aperture to the second aperture, and that the airflow passageway need not have central and axial airflow within it, *see* n. 3). For example, the evidence will show that Fang '044 discloses a "smoking channel 10" which includes "gas pipe 8," as illustrated in figure 1 for

NJOY Exhibit 2008.0746
Juul v. NJOY
IPR2024-00161

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example. JX-0595 (Fang ‘044) at JX-0595.5; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 799. Fang ’044 illustrates and explains that “gas pipe 8 is nested in the center of the evaporation oil storage sleeve 7, the gas pipe 8 is connected with a gas pipe support 9, the gas pipe 8 and the gas pipe support 9 form a smoking channel 10 with the center of the sucker 1 being separated and closed from the oil conservator 7, and the other end of the smoke sucking pipe 8 is communicated with the nicotine oil fuming device 5.” JX-0595 (Fang ‘044) at JX-0595.5; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 799. The smoking channel does not have any obstacles that would divert airflow from the central axis of the housing, and extends centrally and axially between the first aperture on the first end and the second aperture on the second end.

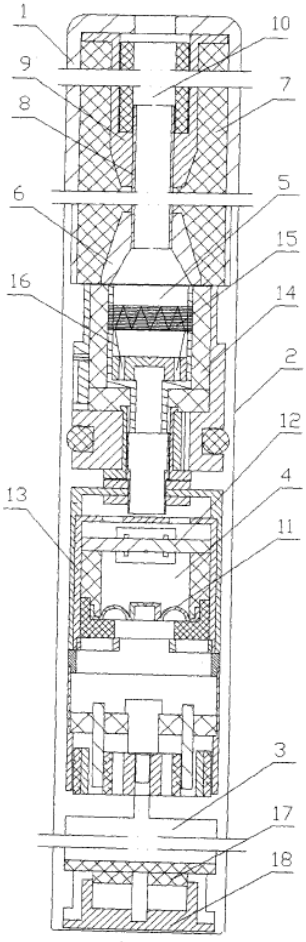


图 1

NJOY Exhibit 2008.0747
Juul v. NJOY
IPR2024-00161

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See JX-0595 (Fang '044) at FIG. 1.

Fang '044 discloses a smoking channel 10, which serves as an airflow passageway as NJOY interprets the claims: "a gas pipe 8 is nested in the center of the evaporation oil storage sleeve 7, the gas pipe 8 is connected with a gas pipe support 9, the gas pipe 8 and the gas pipe support 9 form a smoking channel 10 with the center of the sucker 1 being separated and closed from the oil conservator 7, and the other end of the smoke sucking pipe 8 is communicated with the nicotine oil fuming device 5." JX-0595 (Fang '044) at JX-0595.5; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 314. Fang '044 explains that the airflow from the smoking channel extends all the way to the sensor 11: "When the utility model is in use, the smoking channel 10 generates a negative pressure in the atomizer control switch 4 by a suction force of a user, the silicon film-coated tablet 11 bulges in the support 13 towards the direction of the switch circuit board 12." JX-0595 (Fang '044) at JX-0595.5-6; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 314. The "smoking channel" airflow passageway includes (and extends through) the chamber of the nicotine fuming device 5, including because (1) negative pressure propagates through the chamber to the control switch 4, and (2) air and vaporized nicotine oil flow from the chamber through the smoking channel during use: "smoking channel 10 generates a negative pressure in the atomizer control switch 4 by a suction force of a user… [and] nicotine oil on the temporary oil storage device 15 is fumed to produce nicotine oil smoke, and the nicotine oil smoke is smoked by the user through the gas pipe 8 and the smoking channel 10." JX-0595 (Fang '044) at JX-0595.5-6; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 314.

4. Wang '927 in view of Wang '554 and NPRO Style – '864 Patent, Claim 1[j]

The evidence will show that Wang '927 discloses or renders obvious, alone or in combination with Wang '554 and NPRO Style this limitation. *See* JX-0634 (Leinsing Opening

NJOY Exhibit 2008.0748
Juul v. NJOY
IPR2024-00161

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Rpt., Appx. B) at ¶¶ 280-284; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang '927); RX-0005 (Wang '554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style).

Wang '927 discloses a central and axial airflow passageway at least as NJOY interprets the claims and the central and axial requirement (including that the airflow can enter through non-central and non-axial apertures, that the airflow passageway need not be central and axial the entire length from the first aperture to the second aperture, and that the airflow passageway need not have central and axial airflow within it. JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5; Section IV.G.1.xiii.j.4 *supra.* For example, Wang '927 discloses the air intake pipe 14 that includes air intake channel 15 for air to go through the air intake pipe and reach the electric heating wire 9. JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶345.

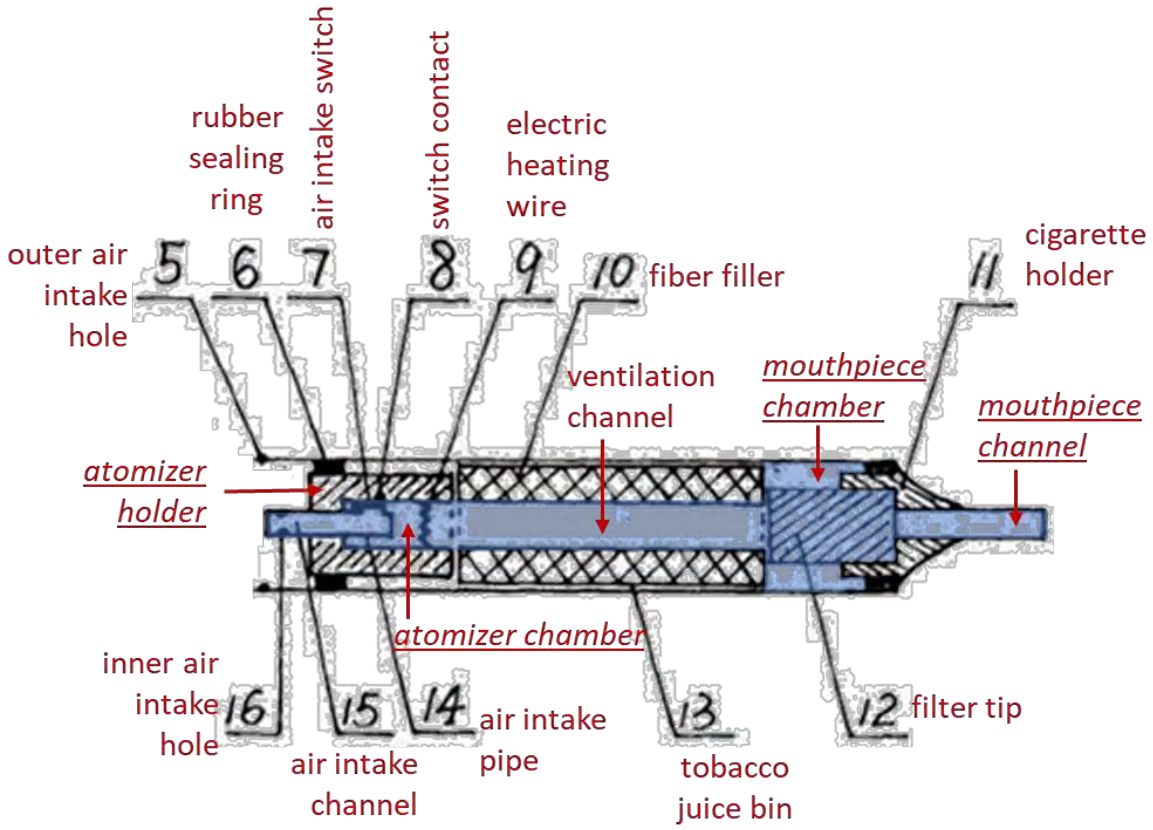
Wang '927 also discloses the "ventilation channel [] arranged in the middle of a [tobacco juice] bin body" where "the ventilation channel is made of a metal net with dense meshes." JX-0594 (Wang '927) at Fig. 1, JX-0594.3; *see also id.* at JX-0594.4("The tobacco juice bin 13 is a plastic round pipe. Fiber filler 10 is made into a ring shape and filled into a cigarette box 13. A circular-hole ventilation channel in the middle of the fiber filler 10 is made of a metal net to support fibers without deformation."); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 346. The C-shaped holder for the electric heating wire (the atomizer holder) forms a chamber to connect the air coming out of the air intake channel 15 to the ventilation channel. JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5.

Wang '927 also discloses a chamber between the tobacco juice bin and the cigarette holder, a mouthpiece chamber, that allows the vaporized tobacco juice to reach to the user through the hollow center of the cigarette holder (the mouthpiece channel). *Id.*; Section IV.G.1.xiii.j.4 *supra*.

NJOY Exhibit 2008.0749
Juul v. NJOY
IPR2024-00161

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The components discussed above are highlighted in blue, including the air intake pipe, the air intake channel, atomizer chamber, ventilation channel, mouthpiece chamber, and mouthpiece channel. *Id*. The airflow passageway highlighted in blue below extends in a straight path through the center of the casing 18 and the cigarette holder 11 from the first aperture on the left end of the air intake pipe 14 to the second end on the right end of the cigarette holder 11. *Id*.

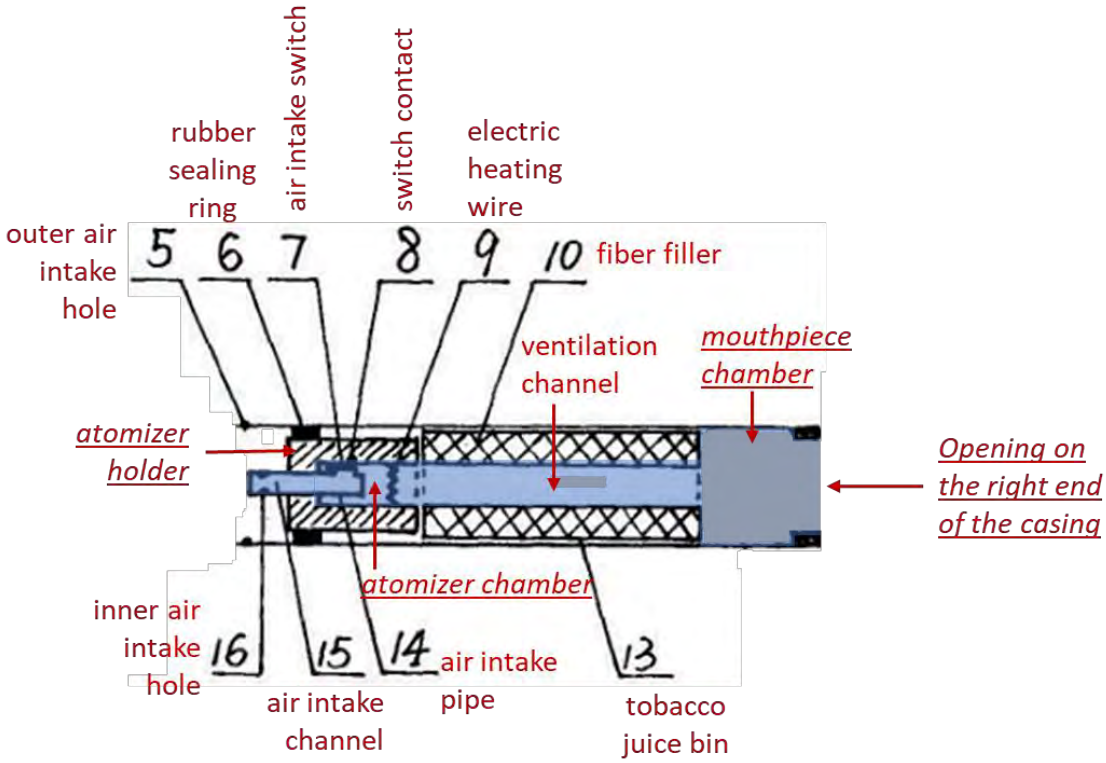


See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end) (annotated in red and blue) ; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 347.

To the extent NJOY argues that the cigarette holder cannot be part of the housing because it is detachable from the casing 18, Wang '927 discloses a central and axial airflow passageway including the air intake pipe, air intake channel, atomizer chamber, ventilation channel in the middle of the tobacco juice bin, and mouthpiece chamber as shown in the annotated figure below.

[redacted]

JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5. The airflow passageway highlighted in blue below extends in a straight path through the center of the casing 18 and from the first aperture on the left end of the air intake pipe 14 to the second aperture on the right end of the casing 18. *Id.*



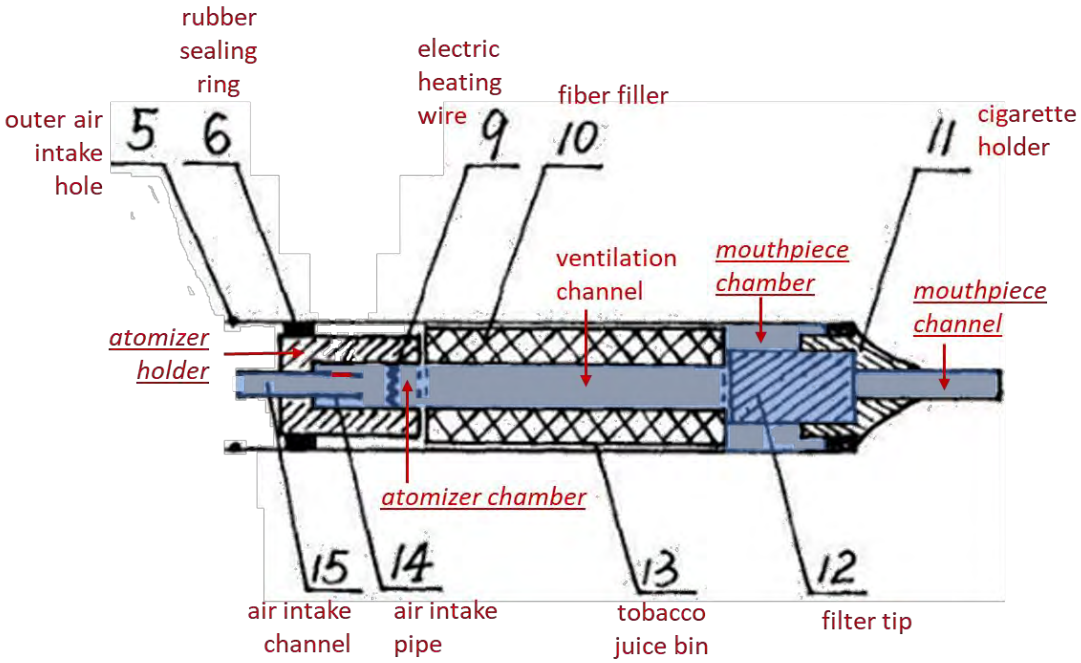
See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end and modified to remove the cigarette holder and the filter tip installed on it) (annotated in red and blue); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 349.

With the modified air intake channel, air coming in from the opening on the left end of the modified air intake pipe would flow in a central and straight line through the atomizer chamber, the ventilation channel, the mouthpiece chamber, the mouthpiece channel, and eventually to a user. JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5; Section IV.G.1.xiii.j.4 *supra*. The airflow passageway accordingly includes the modified air intake pipe, including the air intake channel, the atomizer chamber, the ventilation channel in the middle of the tobacco juice bin, the mouthpiece

NJOY Exhibit 2008.0751
Juul v. NJOY
IPR2024-00161

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chamber, and the mouthpiece channel. *Id.* The airflow passageway highlighted in blue below extends in a straight path through the center of the casing 18 and the cigarette holder 11 from the first aperture on the left end of the modified air intake pipe 14 to the second end on the right end of the cigarette holder 11. *Id.*



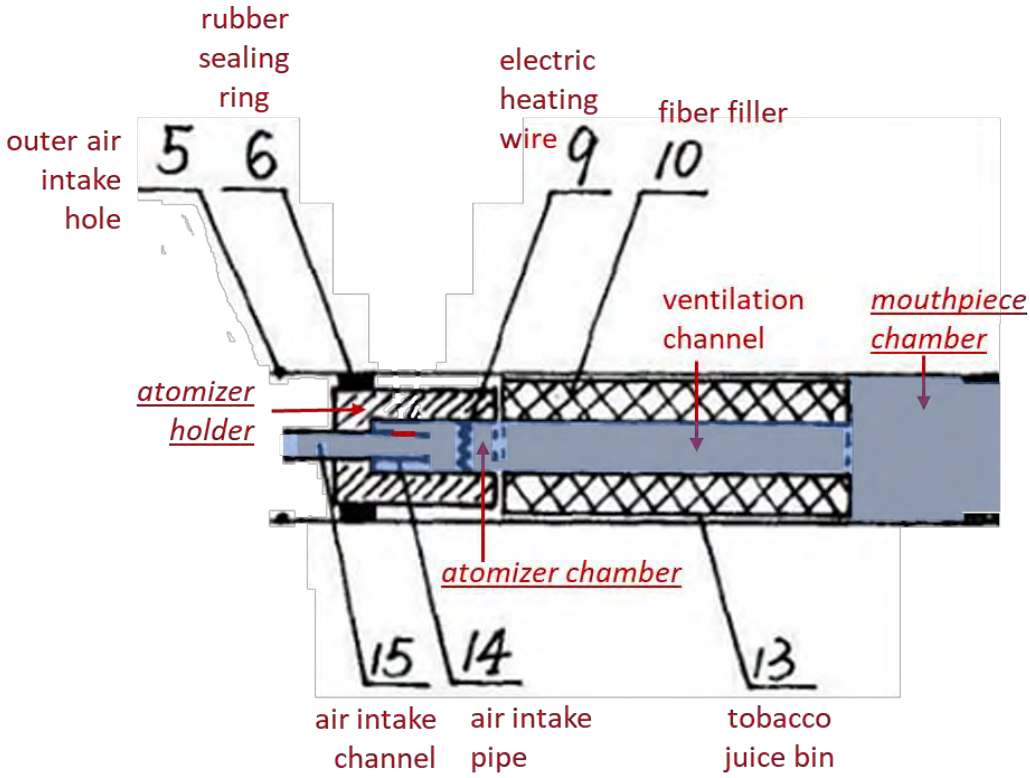
See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end with switch swapped to the battery portion) (annotated in red and blue); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶351.

Under NJOY's interpretation where the mouthpiece does not need to be part of the cartridge, Wang '927 with modifications discussed above discloses a central and axial airflow passageway including the modified air intake pipe, including the air intake channel, the atomizer chamber, the ventilation channel in the middle of the tobacco juice bin, and the mouthpiece chamber as shown below. JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5; Section IV.G.1.xiii.j.4 *supra.* The airflow passageway highlighted in blue below extends in a straight path through the

NJOY Exhibit 2008.0752
Juul v. NJOY
IPR2024-00161

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center of the casing 18 and from the first aperture on the left end of the modified air intake pipe 14 to the second aperture on the right end of the casing 18. *Id.*



See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end with modified air intake pipe; modified to remove the cigarette holder and the filter tip installed on it) (annotated in red and blue); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶352.

5. Han '364 in view of Fang '044 and NPRO Style – '864 Patent, Claim 1[j]

The evidence will show that Han '364 in view of Fang '044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 287-289; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han '364 certified English Translation) ; JX-0595 (Fang '044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit).

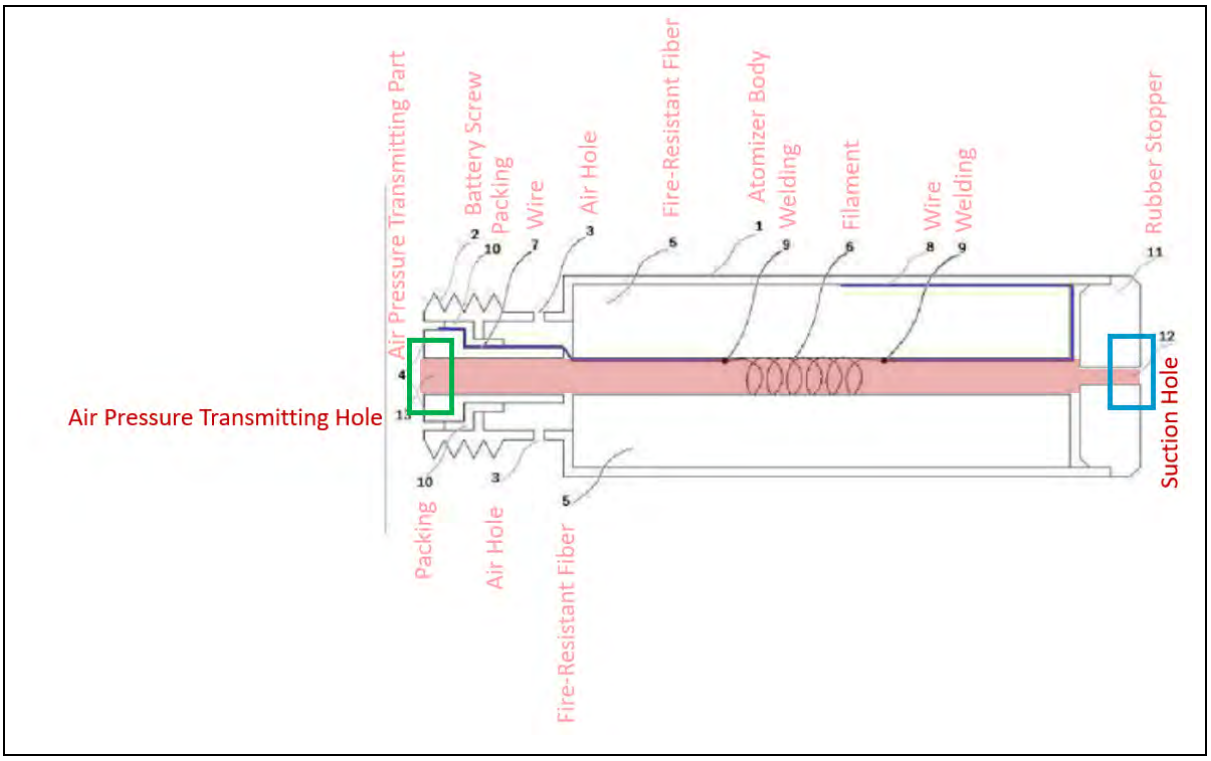
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Juul v. NJOY
IPR2024-00161

[redacted]

Han ’364 discloses a central and axial airflow passageway at least as NJOY interprets the claims and the central and axial requirement (including that the airflow can enter through non-central and non-axial apertures, that the airflow passageway need not be central and axial the entire length from the first aperture to the second aperture, and that the airflow passageway need not have central and axial airflow within it, *see* n. 3). For example, an airflow passageway exists in the housing disclosed in Han ’364. The airflow passageway extends, in a straight path centrally and axially with respect to the housing, intermediate of the first aperture and the second aperture. *See* JX-0631 (Han ’364 certified English Translation) at [0013], Fig.1; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶¶ 362-376; Section IV.G.1.xiii.j (claim 1(i)) *supra*. For example, Han ’364 discloses that if a user draws air through suction hole 12, air can flow through the cartridge (e.g., from air pressure transmitting hole 13 to suction hole 12). *See id.*, at [0013]. Air flows through the cartridge by way of an airflow passageway (annotated in red below) between portions of the fire-resistant fiber 5.

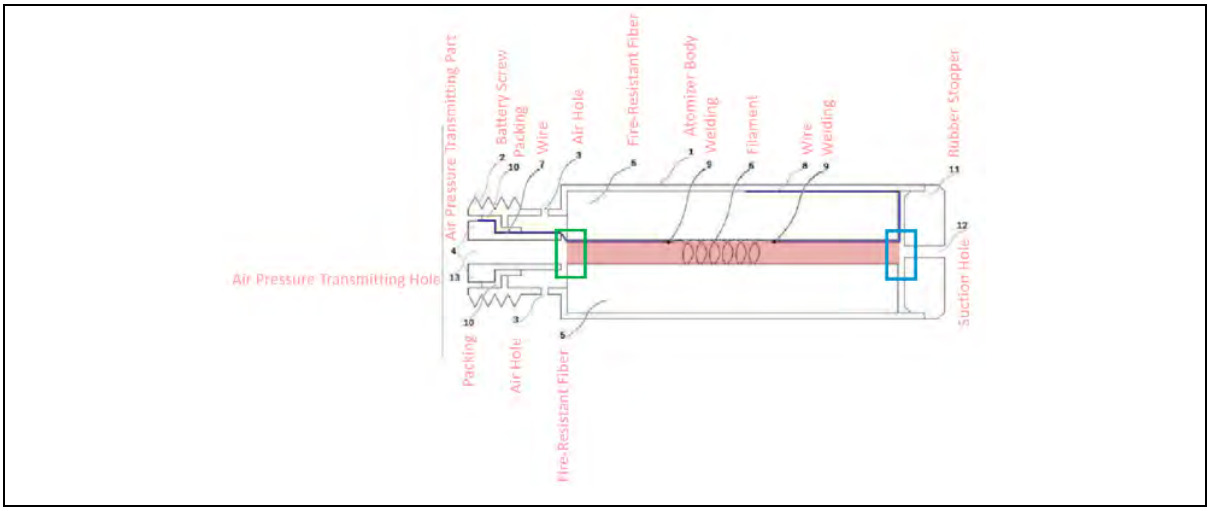
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Juul v. NJOY
IPR2024-00161

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See JX-0631 (Han '364 certified English Translation) at Fig. 1 (annotated); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 370-371.

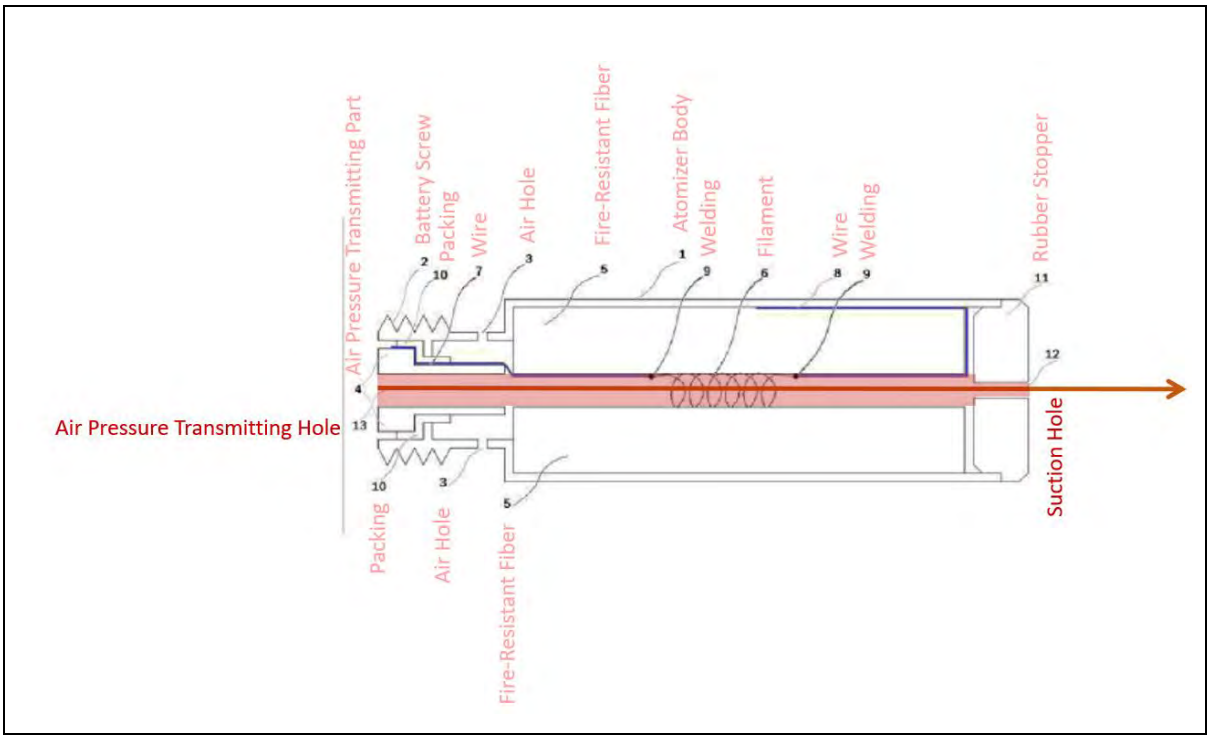
The evidence will show the airflow passageway can also span the area annotated below in red:



Id., at FIG. 1 (annotated) ; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 372.

[redacted]

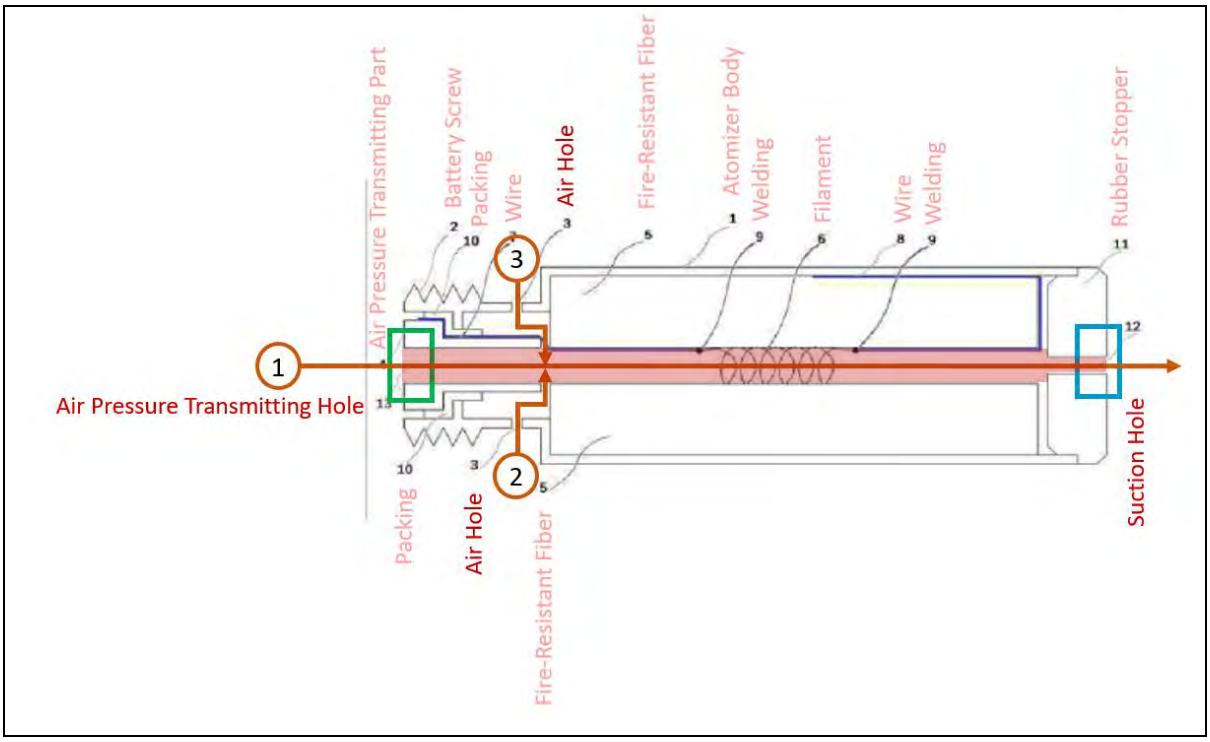
Han ’364 discloses, for example, that air can enter air pressure transmitting hole 13, and flow through the *passageway* annotated above (which lies between fire-resistant fiber 5 and across heating wire 6), out of suction hole 12. *See id.*, at [0013]. *See also id.*, at FIG. 1 (annotated below with an orange arrow):



As annotate below with additional orange arrows, while air can flow through air pressure transmitting hole 13 (see e.g., arrow #1), air can also flow into the cartridge via air holes 3 (e.g., arrows #2 and 3):

NJOY Exhibit 2008.0756
Juul v. NJOY
IPR2024-00161

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See id. at FIG. 1 (annotated; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 375.

In many of the embodiments disclosed in Han '364, the airflow passageway is largely cylindrical in shape, e.g., to accommodate coiled filament 6/49. *See id.* at FIGs. 1, 3, 9; *see also id.* at [0013], [0015]. As is readily apparent from the figures shown above, Han '364 discloses airflow passageways where most if not all of the airflow passageway has a uniform diameter, allowing for uniform cross-sections across most of, or the entire, airflow passageway. *See id.* at FIGs. 1, 8-9.

6. Red Dragon in view of Fang '044 and Wang '927 – '864 Patent, Claim 1[j]

The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 288-289; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-

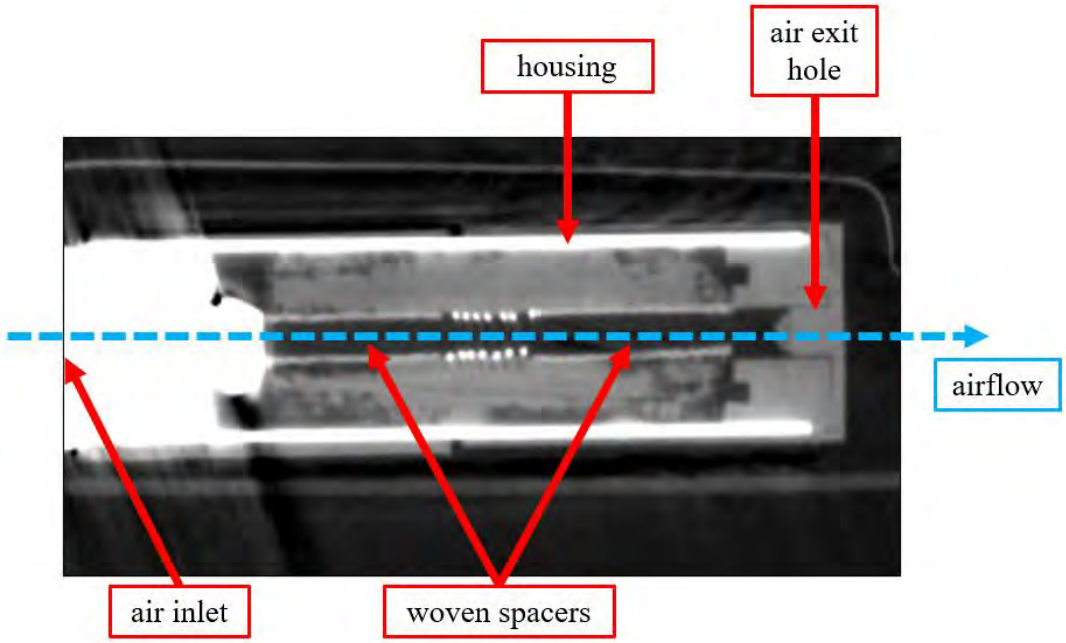
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0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927).

Red Dragon discloses a central and axial airflow passageway at least as NJOY interprets the claims and the central and axial requirement (including that the airflow can enter through non-central and non-axial apertures, that the airflow passageway need not be central and axial the entire length from the first aperture to the second aperture, and that the airflow passageway need not have central and axial airflow within it, *see* n. 3). NJOY contends that "the airflow passageway is neither central nor axial with respect to the first aperture to the second aperture [ ] [n]or does it extend in a straight path through the center of the housing from the air inlet hole to the air exit hole[.]" However, the evidence will show the housing of the Red Dragon includes the Red Dragon Airflow Passageway that extends in a substantially straight path through the center of the housing from the air inlet on the first end to the air exit hole on the second end of the housing. *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 492; JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶¶ 288-289.

NJOY Exhibit 2008.0758
Juul v. NJOY
IPR2024-00161

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See RX-0077 at RX-0077.22; *see also* RX-0077 (CT Scans of Red Dragon Kit #2) at RX-0077.36; *see also* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶¶ 288-289.

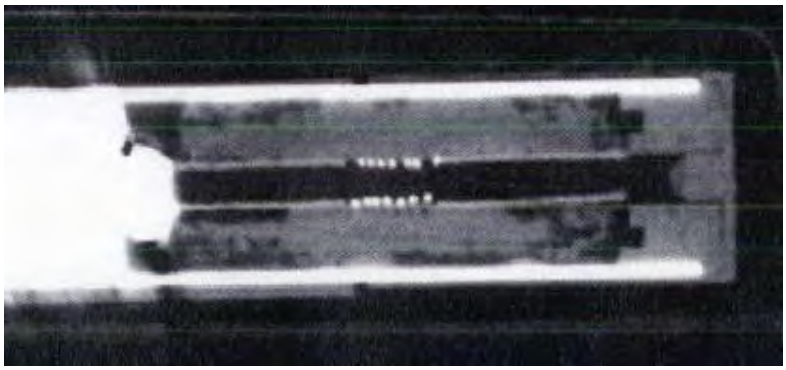
To the extent NJOY and Dr. Vallee contend that the Red Dragon Airflow Passageway does not extend centrally and axially from the first aperture to the second aperture, Mr. Leinsing will opine, over the course of over 15 years (from November 2008 to February 2024), the wire loop that connects the heating coil to the threaded female conductor pushed the upper woven spacer to the side away from the center (where it was supposed to be) because the wire is made of a soft metal and does not hold its shape well over time. *See, e.g.,* RX-1017C (Leinsing 04/07/2024 Tr.) at 143:9-144:1 ("…the packaging was…[i]t was more preserved, hadn't been bounced around and thrown around in a box like I think the other one was…it looked like over time, the wire had—had bent that central axial flow path in Dragon kit number 1."); *see also* RX-1015C (Vallee 04/12/2024 Tr.) at 512:22-513:2 (confirming the device could deform over time). Mr. Leinsing will further opine that, when designed and manufactured, the upper woven spacer should mirror the lower

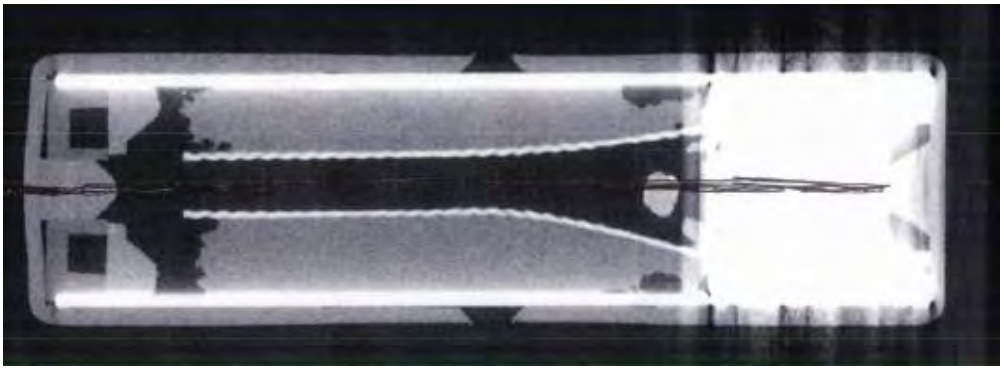
NJOY Exhibit 2008.0759
Juul v. NJOY
IPR2024-00161

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woven spacer to be straight and co-axial with the housing to allow the air flowing straight from the air inlet to the air exit hole. *See, e.g.,* RX-1017C (Leinsing 04/07/2024 Tr.) at 143:9-144:1 ("…I think the original intent of the design preserved with the axial – central and axial flow path in a straight line or along that central axis[.]")

Additionally, the evidence will show that the Red Dragon has an equally central and axial airflow passageway as the Fuma prototype, which NJOY asserts practices all the claims. *See, e.g.,* RX-1109; RX-1110; RX-0077; RX-0079.





RX-1109; RX-1110.

For example, Dr. Vallee confirmed that both use a similar woven spacer to define the airflow passageway. RX-1015C (Vallee 04/12/2024 Tr.) at 519:2-14. Indeed, Dr. Vallee confirmed that an e-cigarette's airflow passageway could be shifted off center and still be considered central and axial. RX-1015C (Vallee 04/12/2024 Tr.) at 514:21-516:9.

NJOY Exhibit 2008.0760
Juul v. NJOY
IPR2024-00161

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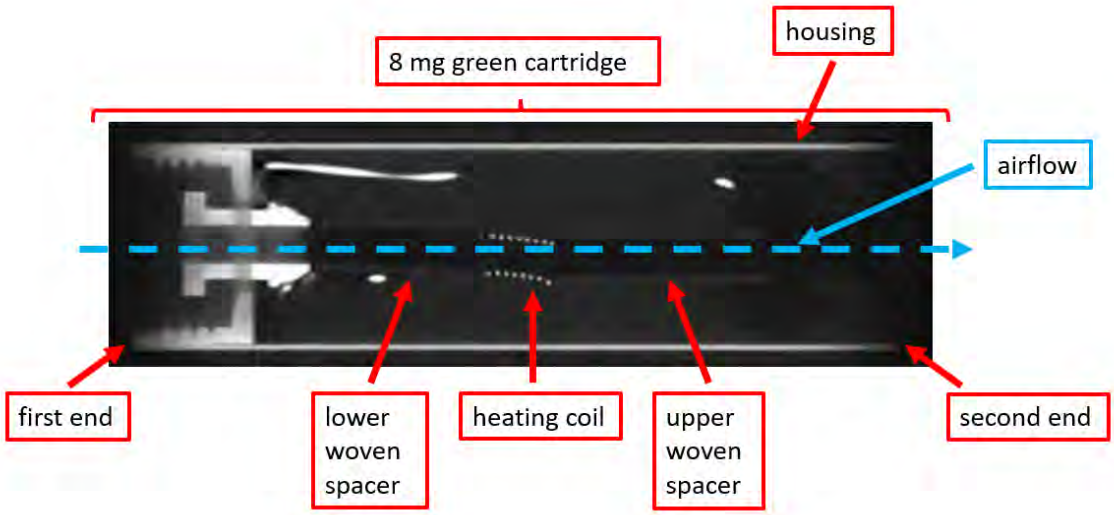
7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '864 Patent, Claim 1[j]

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 278-279; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927).

Smoke Fifty-One Duo discloses a central and axial airflow passageway at least as NJOY interprets the claims and the central and axial requirement (including that the airflow can enter through non-central and non-axial apertures, that the airflow passageway need not be central and axial the entire length from the first aperture to the second aperture, and that the airflow passageway need not have central and axial airflow within it, *see* n. 3). NJOY contends that "the airflow passageway does not extend centrally and axially from the first aperture to the second aperture." *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶ 168. However, Dr. Vallee does not provide any explanation, but rather a conclusory statement, why the airflow passageway does not extend centrally and axially from the first aperture to the second aperture. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 168-170. The evidence will show the housing of the Smoke Fifty-One Duo includes the Smoke Fifty-One Duo Airflow Passageway that extends in a substantially straight path through the center of the housing from the air inlet to the air exit hole.

NJOY Exhibit 2008.0761
Juul v. NJOY
IPR2024-00161

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See RX-0130C (Declaration of Yardimici) at RX-0130C.38; *see also* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 278-279.

8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 1[j]

The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 276-281; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 548-612; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044).

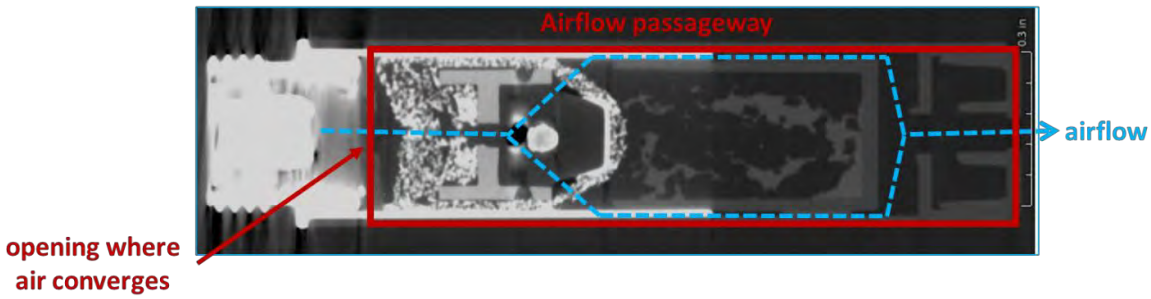
The NJOY NPRO discloses a central and axial airflow passageway at least as NJOY interprets the claims and the central and axial requirement (including that the airflow can enter through non-central and non-axial apertures, that the airflow passageway need not be central and axial the entire length from the first aperture to the second aperture, and that the airflow passageway need not have central and axial airflow within it, *see* n. 3). As described in Section IV.G.1.xiii.j (Claim 1[i]), the entire airflow passageway of the NJOY NPRO extends centrally and

NJOY Exhibit 2008.0762
Juul v. NJOY
IPR2024-00161

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axially with respect to the housing from the first aperture to the second aperture. *See* Section IV.G.1.xiii.j supra.

NJOY contends that airflow passageway does not extend centrally and axially from the first aperture to the second aperture, but rather begins at two separate air inlets and splits and snakes near the mouth end. *See* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶ 246. However, as Mr. Leinsing will opine, because the airflow passageway is defined by the circular wall of the housing, the airflow passageway extends centrally and axially with respect to the housing from the first aperture of the housing to the second aperture of the housing at least as NJOY interprets the claims with respect to infringement (i.e., that the airflow can go around obstacles and still be "central and axial").



See JX-0404 (CT Scans of NJOY NPRO) at JX-0404.11 (annotated in red and blue);*see also* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 276-281.

Additionally, a POSITA would be motivated to move to a central and axial through-hole by the NPRO alone, the NPRO in view of Wang '554, Wang '927, and/or Fang '044. JX-0632C (Leinsing Invalidity Rpt.) at ¶ 570; JX-0595 (Fang '044); RX-0005 (Wang '554); JX-0594 (Wang '927). In the modified NPRO, only the heating element would obstruct the airflow through the airflow passageway along the central axis of the housing. *Id.* For example, as Mr. Leinsing will

NJOY Exhibit 2008.0763
Juul v. NJOY
IPR2024-00161

explain, this modification simplifies the airflow passageway, and to do so would simply require that the batting material have a cutout or tube through the middle, and would have several benefits. *Id.* This modification greatly simplifies the device, and allows for a larger liquid storage. *Id.*

Mr. Leinsing will also explain that this modification would improve the manufacturing of the device. JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 571. For example, having a central through-hole for an airflow passageway like the proposed modification makes assembly of the solution holding medium easier, as for example, batting or absorbent material can be stuffed into the device around a tube, without needing to worry about leaving the gap between the batting material and the housing. *Id.* This requires less precision in manufacturing and eliminates the need to have parts suspending the batting material within the housing for example. *Id.*

This modification would allow the batting material to be larger within the same size housing, as it could more extend further in both the radial and longitudinal directions. JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 572. For example, with the airflow proceeding through a through-hole in the middle of the batting material, there would no longer be a need to leave a gap between the batting material and the sidewall. *Id.* This means that the liquid storage could occupy more radial space, and extend all the way to the inner edge of the housing, rather than stopping short to leave a gap. *Id.* Though there would be a new gap in the middle of the liquid storage chamber, a POSITA would expect that the total volume of the new gap could be smaller than the total volume of the eliminated gap. *Id.* For example, the airflow would be less turbulent and need to make fewer directional changes, so would flow more easily through a smaller total cross-sectional area. *Id.* This modification also allows the batting material to extend further longitudinally, as it removes the need to have space for the airflow to return to the middle to exit the second aperture. *Id.; see also* JX-0646C (Leinsing Opening Rpt., Appx. S).

NJOY Exhibit 2008.0764
Juul v. NJOY
IPR2024-00161

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This modification also improves the airflow through the device, because there are fewer directional changes and obstacles for the air and vapor to pass on its way to the second aperture. JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 573. For example, having the airflow passageway extend through a through-hole in the middle of the device eliminates the need for the air to change directions around obstacles such as the batting material. *Id.* Having fewer directional changes and obstacles results in less suction being required by the user to draw air and vapor through the device, making it a more enjoyable experience. *Id.* Having fewer directional changes and corners in the trajectory of the airflow also reduces the likelihood of condensation or only partially vaporized e-liquid collecting in corners within the device. *Id.* The collection of liquid in corners of an airflow passageway could result in a sticky residue that could clog the airflow through the device. *Id.*

This modification would also improve thermal insulation to the exterior of the device, something the prior art as a whole, and a POSITA in general would be concerned with. JX-0632C (Leinsing Invalidity Rpt.) at ¶ 574. For example, without thermal insulation between the vapor and the shell of the housing, the housing could heat up. *Id.* This could for example cause the housing of the device to burn a user after repeated use. *Id.* Additionally, adding thermal insulation between the shell and the vapor can better control the temperature of the vapor. *Id.* This is important so that, no matter external conditions, the vapor has more consistent characteristics. *Id.* If, for example, the device was used in cold weather, without insulation between the shell and the vapor, there could be increased condensation of the vapor within the pathway. *Id.* Vapor condensation is undesirable because it reduces the vapor content of the air that the user receives, and also because it increases the risk of what is commonly referred to as "leakage" of liquid or undesirable ingestion of condensation droplets. *Id.* For example, with increased condensation, the vapor condensate could be sucked by the user into their mouth, or following use of the device, could leak out of the

NJOY Exhibit 2008.0765
Juul v. NJOY
IPR2024-00161

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mouthpiece and into a user's pocket for example. *Id.* A POSITA would have understood that modifying the NPRO E-Cig to have the air flow through a central through-hole in the batting material would increase the thermal insulation between the shell and the vapor because the batting material itself would function as a thermal insulation barrier. *Id.*

Wang '554, Fang '044 and Wang '927 disclose a central and axial channel through which airflow passes, and a POSITA modifying the NPRO E-Cig in view of Wang '554, Fang '044 and/or Wang '927 would have been motivated to incorporate that design from either of those references for the reasons explained, including improved manufacturing, storage capacity, airflow, and insulation. JX-0632C (Leinsing Invalidity Rpt.) at ¶ 575.

This modification would have had predictable results, and a POSITA making it would have had a reasonable expectation of success. JX-0632C (Leinsing Invalidity Rpt.) at ¶ 576. For example, this modification is the result of a slight difference in the physical location of a gap for air to flow through that does not introduce any uncertainties as to the functionality of the overall device. *Id.* For example, it was known in the art to use tubes or gaps located centrally and axially without any obstacles therein within cartridges, such as disclosed in numerous references including Wang '554, Wang '927 and Fang '044, so a POSITA would have understood that this was a viable and predictable way to design the device. *Id.*

Complainant disagrees that the NJOY NPRO discloses this limitation for two reasons. First, Complainant asserts there are several elements that obstruct the airflow along the central longitudinal axis of the housing. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. G, ¶ 271. However, this is the same thing that occurs in at least the [redacted], yet NJOY asserts that satisfies the claims.

NJOY Exhibit 2008.0766
Juul v. NJOY
IPR2024-00161

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Second, Complainant argues that the airflow passageway is not straight because there are several elements that obstruct the airflow along the central longitudinal axis of the housing. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. G, ¶¶ 272. However, as described in claim 1[j] *supra*, because the airflow passageway is defined by the circular wall of the housing, the airflow passageway extends centrally and axially with respect to the housing from the first aperture of the housing to the second aperture of the housing at least as NJOY interprets the claims with respect to infringement (i.e., that the airflow can go around obstacles and still be "central and axial").

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 1[j]

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 276-281; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.

10. Cigarette Electronique – '864 Patent, Claim 1[j]

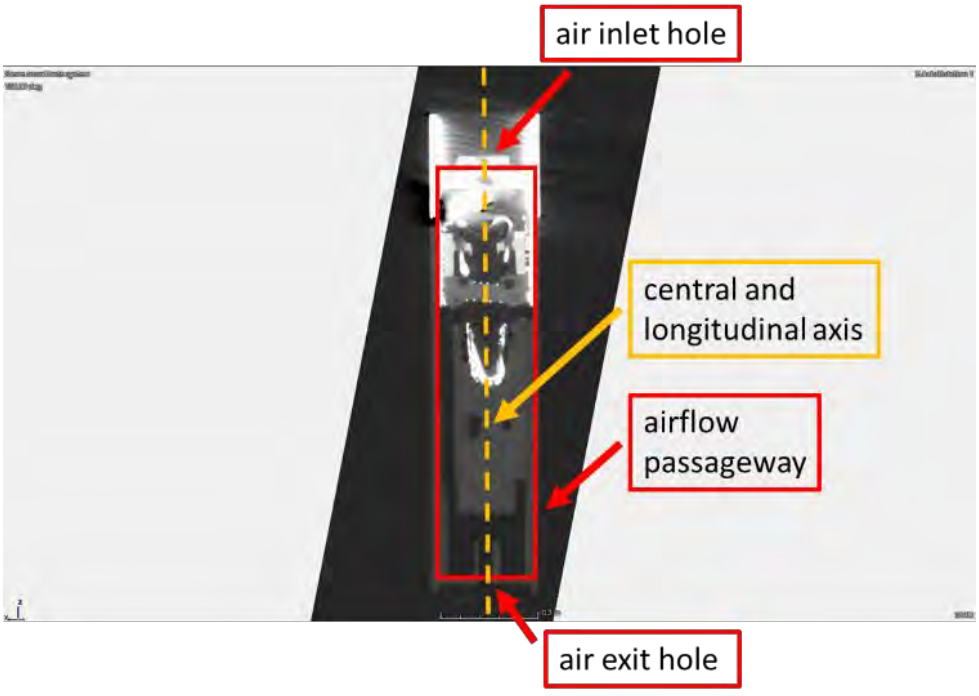
The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 341-345; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit)..

The Cigarette Electronique discloses a central and axial airflow passageway at least as NJOY interprets the claims and the central and axial requirement (including that the airflow can enter through non-central and non-axial apertures, that the airflow passageway need not be central

NJOY Exhibit 2008.0767
Juul v. NJOY
IPR2024-00161

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and axial the entire length from the first aperture to the second aperture, and that the airflow passageway need not have central and axial airflow within it, *see* n. 3). For example, as described in Section IV.G.1.xiii.j (Claim 1[i]) *supra*, a POSITA would understand that the interior of the housing would contain air. The CT scan below shows that the housing extends from the first aperture of the housing to the second aperture of the housing; therefore, Mr. Leinsing will opine that a POSITA would understand that the housing includes an airflow passageway from the first aperture of the housing to the second aperture of the housing at least as NJOY interprets the claims with respect to infringement (i.e., that the airflow can go around obstacles and still define an airflow passageway that is "central and axial"). Because the airflow passageway is defined by the circular wall of the housing, the airflow passageway extends centrally and axially with respect to the housing from the first aperture of the housing to the second aperture of the housing.



See JX-0401 (Photos of Cigarette Electronique) at JX-0401.5 (annotated in red and yellow); *see also* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 341-345.

NJOY Exhibit 2008.0768
Juul v. NJOY
IPR2024-00161

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Additionally, in combining the Cigarette Electronique device with Wang 554 or Fang 044, this feature would have been obvious for the same reasons those references disclose or suggest this feature.

Complainant disagrees that the airflow passageway in the Cigarette Electronique extends centrally and axially from the first to the second aperture. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. F, ¶¶187-188. Specifically, Complainant arbitrarily asserts that airflow passageway is a "circuitous pathway" through a majority of the device. *Id.* at ¶192. However, as Mr. Leinsing will opine, the airflow passageway merely contains obstacles like those that NJOY asserts do not render the airflow passageway not central or axial in e.g., the accused products.

11. Fuma Prototype – '864 Patent, Claim 1[j]

The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 252-254; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

At least at least as NJOY interprets the claims with respect to infringement (i.e., that the airflow can go around obstacles and still be "central and axial"), Xia '610's airflow occurs within an airflow passageway, the Fuma's airflow passageway is central and axial. For example, the airflow passageway of the Fuma Cartridge (annotated in blue in the figures in '864 Patent claim 1[i] above) extends in a straight path through the center of the housing from the air inlet to the air exit hole under NJOY's interpretation.

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses claim element 1(j). *See* Conley '864 Declaration at ¶5 (Dependent claim 47).

NJOY also admitted that the Fuma Prototype discloses claim element 1(j). *See* '864 Priority Chart at 14-15.

NJOY Exhibit 2008.0769
Juul v. NJOY
IPR2024-00161

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l. ’864 Patent, claim 2: “[t]he cartridge of claim 1, further in combination with a power source adapted to be electrically coupled to the first end of the housing, the power source including a battery”

1. Xia ’610 in view of Wang ’554 and Fang ’044 and Smoke Fifty-One Duo– ’864 Patent, Claim 2

The evidence will show that Xia ’610 discloses or renders obvious, alone or in combination with Wang ’554 and Fang ’044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 801-810; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia ‘610); JX-0595 (Fang ‘044); RX-0130C (Declaration of Yardimici). NJOY and its expert do not dispute that this limitation is met by Xia ’610. *See* CX-2110 (Complainant’s First Sup. Validity Contentions (03/12/2024)) at 793-805; CX-2726C (Vallee Reb. Rpt.) at Appx. A-1, p. 8 (going directly from claim 1 to claim 3).

For example, Xia ’610 discloses a “controller” within its design for an e-cigarette that includes two main sections: “a detachable controller and a generator.” JX-0596 (Xia ‘610) at JX-0596.3*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 803. Xia ’610 discloses that the “controller” includes multiple components therein: “an indicating lamp cover (14), a signal indicating lamp (1), a rechargeable lithium battery (2), an integrated circuit board (3), an electret microphone (4) and a hollow connecting conductor B (6) are sequentially arranged inside the controller from left to right.” JX-0596 (Xia ‘610) at JX-0596.3 (claim 1) *; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 803. Xia ’610’s “controller” section serves as a detachable power source, containing a battery, that powers the “generator” portion’s heating coil. For example, Xia ’610 explains that the working process of this example is as follows:

> after the controller and the generator are connected through the connecting conductors A, B, the environmental-protecting type incombustible atomizing electronic cigarette is formed; when the smoker sucks, the airflow enters the generator through the air inlet on a side of the connecting conductor A, passes

NJOY Exhibit 2008.0770
Juul v. NJOY
IPR2024-00161

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> through the vibrating diaphragm, the liquid-blocking plate and the heater, and is finally sucked out through the suction nozzle.

See JX-0596 (Xia '610) at JX-0596.16*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 803.

Xia '610 explains that its power source is reusable, because the battery is rechargeable:

> After the detachable controller and generator are detached, if the connecting conductor B6 of the controller is connected to a charger, charging of the rechargeable lithium battery 2 can be achieved through the integrated circuit board 3, and if the connecting conductor B6 is connected with the generator through the connecting conductor A5, the environmental-protecting type incombustible atomizing electronic cigarette with the function of the cigarette substitute can be formed.

See JX-0596 (Xia '610) at JX-0596.10*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 804.

Xia '610 illustrates an example power source on the left part of figure 2 (labeled "Controller"):

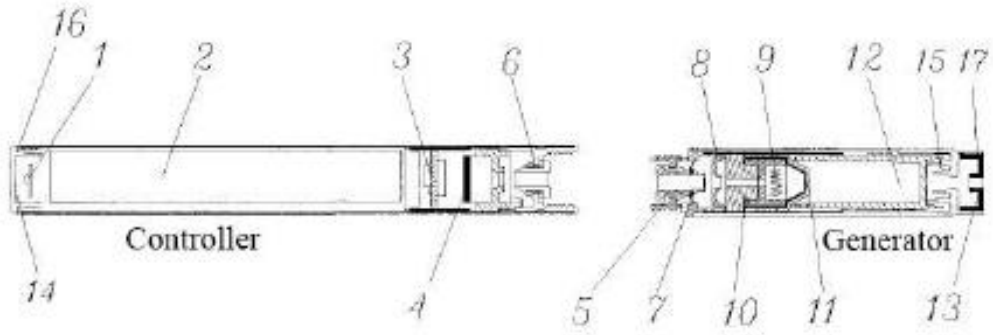


Fig. 2

See JX-0596 (Xia '610) at Fig. 2*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 805.

Xia '610 discloses a "battery" within the "controller": "an indicating lamp cover (14), a signal indicating lamp (1), a rechargeable lithium battery (2), an integrated circuit board (3), an

NJOY Exhibit 2008.0771
Juul v. NJOY
IPR2024-00161

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electret microphone (4) and a hollow connecting conductor B (6) are sequentially arranged inside the controller from left to right." JX-0596 (Xia '610) at JX-0596.3 (claim 1) *; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 806. Xia '610 also discloses that the "whole device is powered by a 3.7 V lithium-ion battery, VCC represents connection to a positive electrode of the battery, and GND represents connection to a negative electrode of the battery" in figure 6. JX-0596 (Xia '610) at JX-0596.14*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 806. Xia '610 explains that "As shown in Fig. 1 and Fig. 2, the rechargeable lithium battery 2 is arranged inside. After the detachable controller and generator are detached, if the connecting conductor B6 of the controller is connected to a charger, charging of the rechargeable lithium battery 2 can be achieved through the integrated circuit board 3." JX-0596 (Xia '610) at JX-0596.10*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 806.

For example, Xia '610 discloses "hollow connecting conductor B" as part of the "controller": "an indicating lamp cover (14), a signal indicating lamp (1), a rechargeable lithium battery (2), an integrated circuit board (3), an electret microphone (4) and a hollow connecting conductor B (6) are sequentially arranged inside the controller from left to right." JX-0596 (Xia '610) at JX-0596.3 (claim 1) *; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 807. Xia '610 demonstrates that the connecting conductor B is electrically conductive because it explains that "[a]fter the detachable controller and generator are detached, if the connecting conductor B6 of the controller is connected to a charger, charging of the rechargeable lithium battery 2 can be achieved through the integrated circuit board 3." JX-0596 (Xia '610) at JX-0596.10*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 807.

Xia '610 explains that the connecting conductor B provides part of the electrodes that power the heater:

NJOY Exhibit 2008.0772
Juul v. NJOY
IPR2024-00161

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> As shown in Fig. 3, the connecting conductor A5 and the connecting conductor B6 form a connecting outer ring through an inner thread 602 and an outer thread 604, respectively, a negative electrode of a lead-in wire for connecting the heater reaches the rechargeable lithium battery 2 via the integrated circuit board 3, and a positive electrode of the lead-in wire connected with the heater through two hollow columnar conductors 601, 603 reaches the rechargeable lithium battery 2 via the integrated circuit board 3; and an insulating material ring 605 separate the positive and negative electrodes 601, 603 and 602, 604.

See JX-0596 (Xia '610) at JX-0596.12*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 808.

Xia '610 further explains that "[w]hen the connecting conductor B6 and the connecting conductor A5 are in threaded connection or clamping groove connection through the hollow contact copper caps, attention must also be paid to the problem of insulation between the positive and negative electrodes," demonstrating that the connecting conductor B is electrically conductive. JX-0596 (Xia '610) at JX-0596.12*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 809. Xia '610's description that the connecting conductors contain "copper caps," and warning that "attention must be paid to the problem of insulation between the positive and negative electrodes" demonstrate to a POSITA that the "connecting conductors" disclosed are electrically conductive.

Xia '610 illustrates an example of an electrically conductive portion of a power source (the "connecting conductor B" (6) of the "controller") in connection with an electrically conductive portion of a cartridge (the "connecting conductor A" (5) of the "generator") in figure 3:

NJOY Exhibit 2008.0773
Juul v. NJOY
IPR2024-00161

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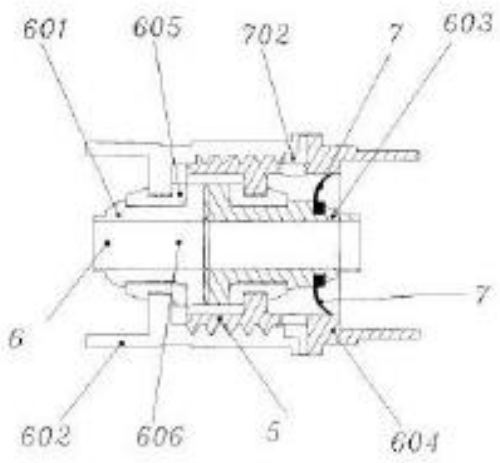


Fig. 3

See JX-0596 (Xia '610) at Fig. 3*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 810.

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '864 Patent, Claim 2

The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 811-817; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici). NJOY and its expert do not dispute that this limitation is met by Wang '554. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 757-770; CX-2726C (Vallee Reb. Rpt.) at Appx. A-2, p. vii (going directly from claim 1 to claim 3).

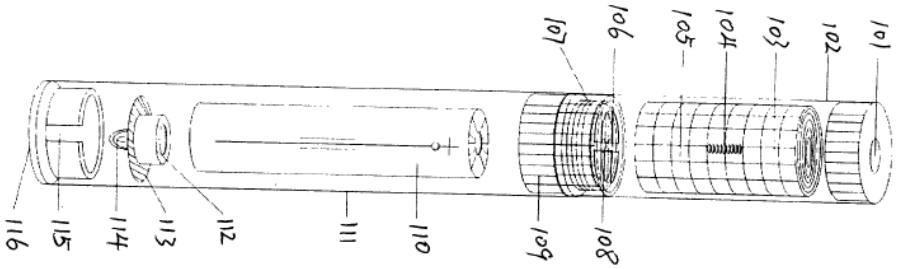
For example, the evidence will show that Wang '554 discloses a "cigarette rod" part that contains a battery and powers the device: "the cigarette rod part consists of a cigarette rod shell, a battery, a sensor, an indicating lamp, a circuit control board, an indicating lamp cover, an air inlet, an air outlet, an output end, and the like." RX-0005 (Wang '554) at RX-0005.3 (claim 1) ; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 813. Wang '554 also explains: "The cigarette rod shell is a hollow cylinder, providing a space for the battery 110, the sensor 112, the indicating lamp

NJOY Exhibit 2008.0774
Juul v. NJOY
IPR2024-00161

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114, the circuit control board 113 and wires to solder them." RX-0005 (Wang '554) at RX-0005.5-6; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 813.

For example, in Wang '554, "Battery 110" is illustrated on the left in Figure 1 in "cigarette rod shell 111." The battery powers the heating coil 104 in the "cigarette holder part" on the right of Figure through various connections described below: Wang '554's device contains "a device that controls a battery to discharge through smoking motions, thereby driving an electric heater to generate heat, and further atomizing a tobacco extract." RX-0005 (Wang '554) at RX-0005.4; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 814.



See RX-0005 (Wang '554) at Figure 1; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 814.

The claimed "power source" may be considered to be the cigarette rod shell 111 on the left above (and in Figure 2) that contains the battery, or the battery plus some other components, such as electrode 119, within 111, as a POSITA would understand any of these would constitute "a power source.

For example, Wang '554 discloses that the battery in the power source serves to provide power to the heater, meaning that there must be an electrically conductive portion that transmits power from the battery to the heater. Wang '554 illustrates this electrically conductive portion in Figure 4, which shows the mechanical and electrical connection of the cigarette rod part and the cigarette holder part:

NJOY Exhibit 2008.0775
Juul v. NJOY
IPR2024-00161

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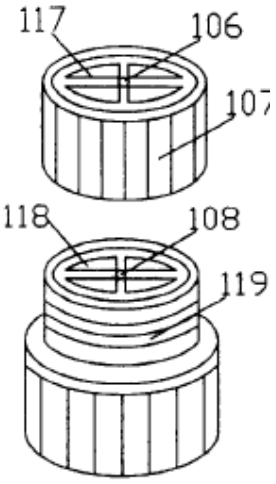


Fig. 4

See RX-0005 (Wang '554) at Figure 4; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 816.

For example, Wang '554 describes the "output end of the cigarette rod" as including "electrode 119," stating: "the input end of the cigarette holder matches the output end of the cigarette rod, the two poles are isolated by an insulating material, and are connected with the output end of the cigarette rod, that is, the two poles are connected to the output end, respectively, an electrode 117 is in butt joint with an electrode [118], the electrode 107 is in butt joint with an electrode 119, and the air inlet 106 and the air outlet 108 are also in butt joint, thereby playing the role of fixing the cigarette holder and the cigarette rod as a whole. The input end of the cigarette holder and the output end of the cigarette rod may be of screw-fit structures, may also be of plug-fit structures." RX-0005 (Wang '554) at RX-0005.8; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 817.

3. Fang '044 in view of Xia '610 and Wang '554 and Smoke Fifty-One Duo – '864 Patent, Claim 2

The evidence will show that Fang '044 discloses or renders obvious, alone or in combination with Xia '610 and Wang '554 and Smoke Fifty-One Duo this limitation. *See* JX-

NJOY Exhibit 2008.0776
Juul v. NJOY
IPR2024-00161

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0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 818-820; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici). NJOY and its expert do not dispute that this limitation is met by Fang '044. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 467-480; CX-2726C (Vallee Reb. Rpt.) at Appx. A-3, p. xiii (going directly from claim 1 to claim 3).

For example, the evidence will show that Fang discloses a "battery (3)" that is "is electrically connected with" other components of the e-cigarette through "fuming device control switch (4)." JX-0595 (Fang '044) at JX-0595.3, 5-6; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 819. Fang '044 discloses the use of "battery 3," which is electrically connected to the heater wire via the switch circuit board 12, and which powers the device. JX-0595 (Fang '044) at JX-0595.6; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 819. Fang '044 illustrates the battery in the portion of the device that would be in the power portion of the proposed modified cartridge design, as it is in the lower portion of Fang '044's figure 1 for example. Fang '044 explains: "the battery (3), the fuming device control switch (4) and the nicotine oil fuming device (5) are sequentially nested in the cigarette rod shell (2)." JX-0595 (Fang '044) at JX-0595.3; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 819.

For example, Fang '044 discloses that the battery of the device is electrically connected to the heater, which means that there is an electrically conductive portion between the two that transmits the power from what would be separated as the power portion to what would be separated as the cartridge portion. For example, Fang '044 explains that "the electric heating film wire (16) is electrically connected with the battery (3) through the fuming device control switch (4)." JX-0595 (Fang '044) at JX-0595.3; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 820. Mr. Leinsing will opine that a POSITA would understand from Fang '044's structure and figures

NJOY Exhibit 2008.0777
Juul v. NJOY
IPR2024-00161

that the abutting components illustrated near the sidewall indentation are conductive pieces, and that they would be on the ends of the power portion and the cartridge portion if separated. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 820.

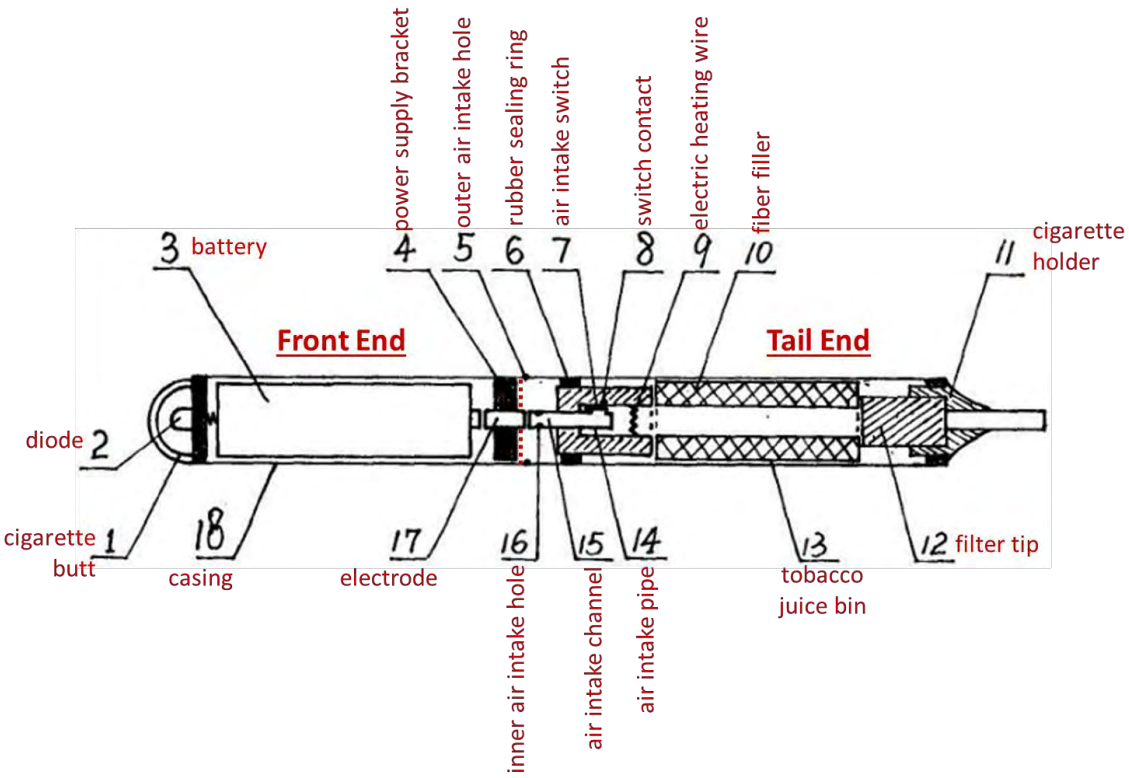
4. Wang '927 in view of Wang '554 and NPRO Style – '864 Patent, Claim 2

The evidence will show that Wang '927 discloses or renders obvious, alone or in combination with Wang '554 and NPRO Style this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 285-287; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang '927); RX-0005 (Wang '554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style). NJOY and its expert do not dispute that this limitation is met by Wang '927. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 784-793; CX-2726C (Vallee Reb. Rpt.) at Appx. B, pg. viii (going directly from claim 1 to claim 5).

For example, the evidence will show that Wang '927 discloses the use of a power source with a battery. JX-0594 (Wang '927) at Fig. 1, JX-0594.1-5; *see also* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶ 286; JX-0632C (Leinsing Opening Rpt.) at ¶ 324. For example, Wang '927 discloses an electronic liquid cigarette that includes an "front end" and a "tail end." JX-0594 (Wang '927) at Fig. 1 and JX-0594.4("For ease of explanation, we refer to the left side of FIG. 1 as the front end and the right side as the tail end."); *see also* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶ 286; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 324. The illustration below shows the "front end" and the "tail end." The front end includes, among other components, the cigarette butt 1, light emitting diode 2, battery 3, power supply bracket 4, and electrode 17. *Id*.

NJOY Exhibit 2008.0778
Juul v. NJOY
IPR2024-00161

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See JX-0594 (Wang '927) at Fig. 1 (annotated in red); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 324.

As shown in Fig. 1 of Wang '927, the left side of the battery 3 is connected to and held down by a conductive spiral spring. JX-0594 (Wang '927) at JX-0594.4("The cigarette butt 1 and a casing 18 are connected together by threads, and a spiral spring holds down a battery 3."); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 325. The right side of the battery 3 is connected to the electrode 17, which is also electrically connected to the conductive air intake pipe 14. *Id*. ("The air intake pipe 14 is a round copper pipe with both ends sealed,and is connected to the electrode 17 when installed.") The air intake switch and the switch contact 8, which are part of the assembly that includes the air intake pipe 14, the air intake switch 7, the switch contact 9, and the electric heating wire 9, constitute a switch of the electric heating wire 9 and light emitting diode 2. *Id*.

NJOY Exhibit 2008.0779
Juul v. NJOY
IPR2024-00161

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("An air intake pipe 14, an air intake switch 7, a switch contact 8 and an electric heating wire 9 form a whole, which is fixed inside the casing 18 by a rubber sealing ring 6. The air intake pipe 14 is a round copper pipe with both ends sealed, and is connected to the electrode 17 when installed. An air intake hole 16 is arranged at a front end of the air intake pipe 14, the air intake switch 7 is a thin sheet made of memory alloys, and the air intake switch 7 and the switch contact 8 constitute a switch of the electric heating wire 9 and the diode 2.").

For example, the evidence will show that when an individual inhales from the cigarette holder 11, negative pressure is produced in the cavity of the casing causing the air intake switch 7 to be opened and connected to the switch contact 8 and the switch is turned on. JX-0594 (Wang '927) at JX-0594.5; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 326. When the switch is turned on, the battery 3 powers the electric heating wire 9 to generate heat and the light emitting diode 2 to emit light indicating the e-cigarette is on. *Id*. When the individual stops vaping, the switch is turned off and the power supply to the electric heating wire 9 and the light emitting diode 2 is cut off. *Id*.

5. Han '364 in view of Fang '044 and NPRO Style – '864 Patent, Claim 2

The evidence will show that Han '364 in view of Fang '044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 290-292; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han '364 certified English Translation) ; JX-0595 (Fang '044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit).

For example, Han '364 discloses a battery component 14. *See, e.g.,* JX-0631 (Han '364 certified English Translation) at [0013]; *see also id.* at FIG. 5. "[B]attery part (14) … includes the battery and suction sensor (Diagram 5)." *Id.*, at [0013]; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 361. The atomizer body 1 can be connected to the battery component 14. *See id.* When

NJOY Exhibit 2008.0780
Juul v. NJOY
IPR2024-00161

a user "suck[s] in air as if you were smoking a tobacco cigarette, the air suction pressure is transmitted to the battery part (14) through the air hole (13) in the air pressure transmitting part (4), and the suction sensor inside the battery part operates to supply power from the battery." *Id.*, at [0013]. "[B]oth sides of the wire are connected to the atomizer body (1) and the air pressure transmitting part (4), respectively, and are connected to the positive pole of the DC battery." *Id.*, at [0017]. Air is also brought into the battery portion, by the user, through two air holes (16) to turn on LED (15). *See id.* at [0034]; FIG. 5. The user draws air into the battery portion through the center air flow hole (13) in the cartomizer by creating a vacuum at suction hole 12 when they inhale. *See id.* at [0013], [0034].

Further, the battery part 14 provides power to various components, including the atomizer within atomizer body 1. *See, e.g.,* JX-0631 (Han '364 certified English Translation) at [0013]; *see also id.* at FIG. 5; JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 290-292. Han '364 also discloses a cartridge having a screw 2 for connecting to the battery part 14; screw 2 is made of electrically conductive brass. *See* JX-0631 (Han '364 certified English Translation) at [0013]; *see also id.*, at FIG. 2. The battery itself also includes a "positive pole" which is electrically conductive and to which filament 6 of the atomizer can be electrically coupled. *See id.*, at [0017].

NJOY asserts that Han '364 does not disclose or renders obvious this limitation for the same reasons as claim 1[pre]. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. C, ¶306. However, as described in claim 1 [pre], IV.G.1.xiii.b. *See* Section IV.G.1.xiii.b(claim 1 [pre]) *supra*.

6. Red Dragon in view of Fang '044 and Wang '927 – '864 Patent, Claim 2

The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 290-292; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-

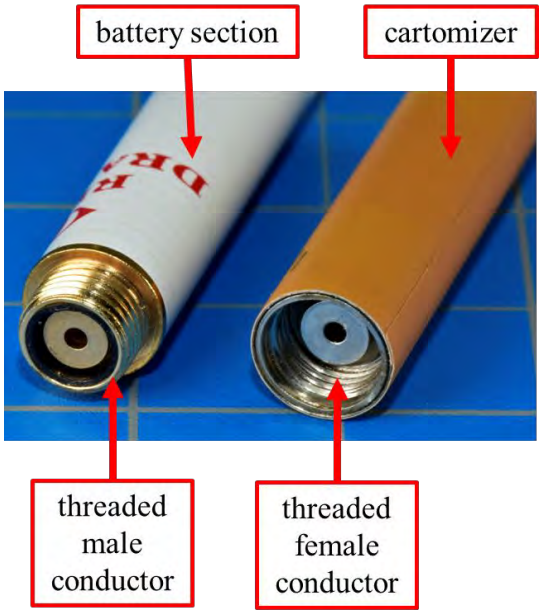
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Juul v. NJOY
IPR2024-00161

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0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927). NJOY and its expert do not dispute that the Red Dragon discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 916-937; CX-2726C (Vallee Reb. Rpt.) at pg. vi (going directly from claim 1[j] to claim 3).

The evidence will show, and NJOY does not dispute, that the Red Dragon discloses or renders obvious this claim limitation. The Red Dragon includes a battery section which includes a rechargeable battery. The first end of the housing is electrically coupled to the battery section using the electrically threaded conductors of both the cartomizer and the battery section. *See, e.g.,* RX-0074 (Photos of Red Dragon Kit #1) at RX-0074.45 ; *see also* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶ 138.

3.



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See RX-0074 (Photos of Red Dragon Kit #1) at RX-0074.45 (annotated in red); *see also* JX-0638C (Leinsing Invalidity Rpt., Appx. E) at ¶ 291.

7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '864 Patent, Claim 2

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 280-284; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460. NJOY and its expert do not dispute that Smoke Fifty-One Duo discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 897-916; CX-2726C (Vallee Reb. Rpt.) at Appx. D, pg. viii (going directly from claim 1 to claim 3).

The evidence will show that the Smoke Fifty-One Duo discloses or renders obvious this claim limitation. The Smoke Fifty-One Duo includes a battery section which includes a rechargeable battery. The first end of the housing is electrically coupled to the battery section using the electrically threaded conductors of both the cartridge and the battery section. *See, e.g.,* RX-0130C (Yardimici Declaration) at RX-0130C.16 (annotated in red, rotated); RX-0129C (Wang Declaration) at RX-0129C.40 (annotated in red, rotated); RX-0130C (Yardimici Declaration) at RX-0130C.16 (annotated in red, rotated); *see also* RX-0129C (Wang Declaration) at RX-0129C.40 (annotated in red, rotated); *see also* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 280-284.

8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 2

The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 282-284; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 548-612; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT

NJOY Exhibit 2008.0783
Juul v. NJOY
IPR2024-00161

Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044). NJOY and its expert do not dispute that the NJOY NPRO discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 963-980; CX-2726C (Vallee Reb. Rpt.) at Appx. G, pg. x (going directly from claim 1 to claim 3).

The evidence will show that the NJOY NPRO discloses or renders obvious this claim limitation. *Id.* For example, the power source of the NPRO includes a "Lithium Rechargeable Battery." RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.4; RX-0109C (NJOY NCIG User Guide); RX-0110C (NJOY NPRO User Guide Tri-Fold); *see also* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 555-556. When the cartridge is coupled to the battery and when the user draws from the mouthpiece end of the e-cigarette, the e-cigarette will be turned on so that current can flow from the battery in the power source to the heating coil in the cartridge. *Id.*

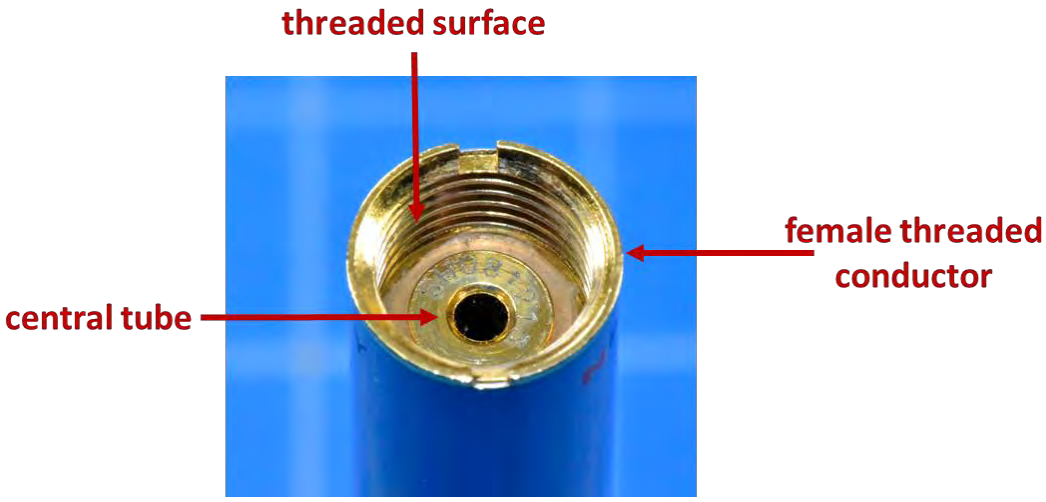
In the power source section of the NPRO E-Cig, one terminal of the rechargeable battery is connected to the threaded surface of the threaded male conductor and the other terminal of the power source section is connected to the central tube of the threaded male conductor. *Id.* The power source includes a threaded female conductor, which further includes a threaded surface, and a central tube. *Id.*

NJOY Exhibit 2008.0784
Juul v. NJOY
IPR2024-00161

[redacted]



See RX-0082 (Photos of NJOY NPRO) at RX-0082.59 (annotated in red).



See RX-0082 (Photos of NJOY NPRO) at RX-0082.101 (annotated in red).

The NJOY NPRO discloses the use of a power source including a battery. *See, e.g.,* JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009) at JX-0482C.4; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0109C (NJOY NCIG User Guide); JX-0482C.3;

NJOY Exhibit 2008.0785
Juul v. NJOY
IPR2024-00161

[redacted]

see also JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 282-283. The power source is adapted to electrically coupled to the first end of the housing via the threaded conductors. *Id.*

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 2

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 282-284; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.

10. Cigarette Electronique – '864 Patent, Claim 2

The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 346-352; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).. NJOY and its expert do not dispute that this limitation is met by the Cigarette Electronique. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 937-963; CX-2726C (Vallee Reb. Rpt.) at Appx. F, pg. ix (going directly from claim 1 to claim 3).

For example, the evidence will show the Cigarette Electronique is a two-piece electronic cigarette that includes (1) a power source section and (2) a cartridge section that are connected together (*i.e.,* by screwing them together). *See, e.g.,* RX-0072 at RX-0072.30; RX-0072 at RX-0072.16;*see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 269-275. The power source section of the Cigarette Electronique device includes a threaded male connector to be screwed into the threaded female conductor of the cartridge section.

NJOY Exhibit 2008.0786
Juul v. NJOY
IPR2024-00161

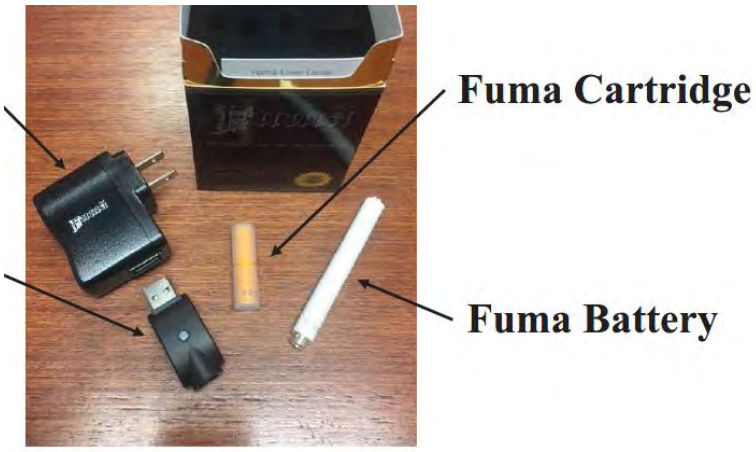
[redacted]

Further, the power source section of the Cigarette Electronique device includes a rechargeable battery. *See, e.g.,* RX-0072 at RX-0072.30; RX-0072 at RX-0072.16;RX-0072 at RX-0072.53; RX-0072 at RX-0072.67; (annotated in red), RX-0072 at RX-0072.36; (annotated in red); *see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 348-352. One terminal of the rechargeable battery is connected to the threaded surface of the threaded male conductor, and the other terminal of the battery is connected to the central tube of the threaded male conductor. *Id.*

11. Fuma Prototype – '864 Patent, Claim 2

The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 256-259; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

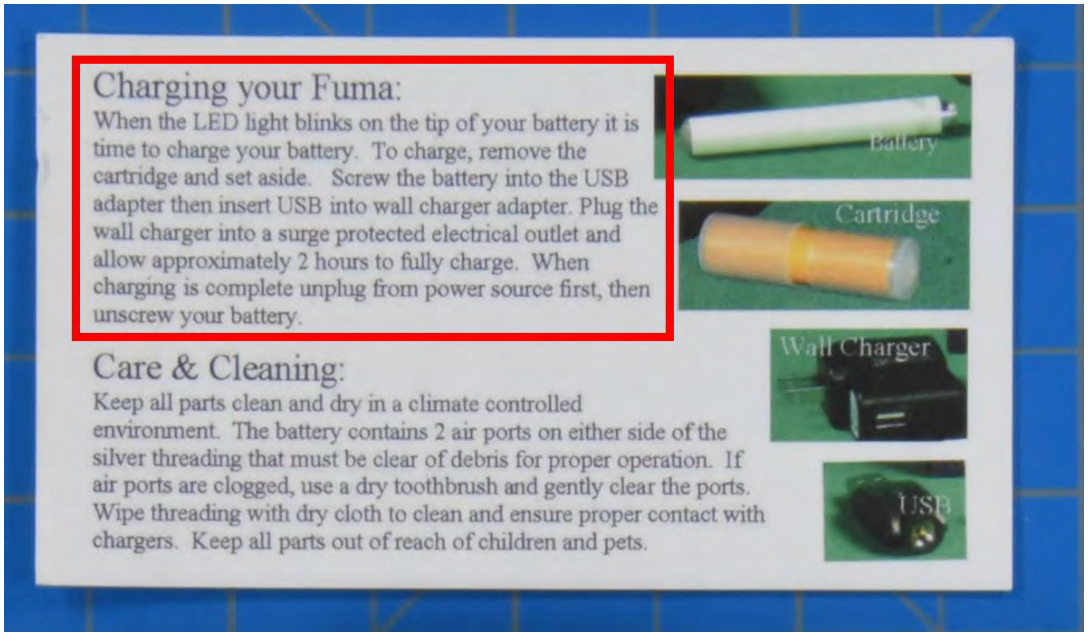
For example, the Fuma Prototype includes the Fuma Battery, which further includes a battery. When the Fuma Cartridge is screwed onto the Fuma Cartridge, the threaded male conductor on the Fuma Battery is electrically coupled to the female threaded conductor end of the Fuma Cartridge.



See CRTP Exhibit A at Fig. 2.

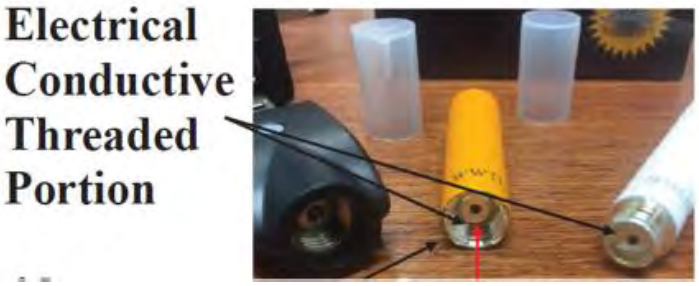
NJOY Exhibit 2008.0787
Juul v. NJOY
IPR2024-00161

[redacted]



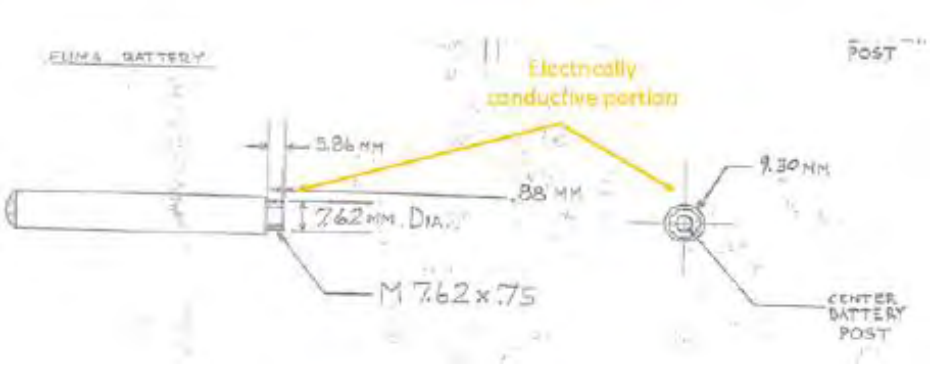
See RX-0078 (Photos of Fuma Starter Kit) at RX-0078.7 (annotated in red).

The Fuma Battery includes a threaded male conductor that is electrically conductive. When the Fuma Cartridge is screwed onto the Fuma Battery, the electrically conductive threaded portion of the Fuma Battery will be electrically coupled to the electrically conductive threaded portion of the Fuma Cartridge to allow current to pass through. *See* Sections X.B.8.(2) and (3) of the main body of my report (Overview of the Fuma Prototype – Power Source/Battery, Cartridge).



See CRTP Exhibit A at Fig. 2.

[redacted]



See CRTP Exhibit E at FUMA-INSPECTION-0037.

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses claim element 2. *See* Conley '864 Declaration at ¶5 (Dependent claim 42).

NJOY also admitted that the Fuma Prototype discloses claim element 2. *See* '864 Priority Chart at 16.

m. '864 Patent, claim 9[pre]: "[a] cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[pre] of the '864 Patent.

n. '864 Patent, claim 9[a]: "a housing having an interior and a solution holding medium adapted to hold a solution,"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[a] of the '864 Patent.

NJOY Exhibit 2008.0789
Juul v. NJOY
IPR2024-00161

[redacted]

o. ’864 Patent, claim 9[b]: “the housing having a first end and a second end that is opposite the first end, the housing having a first aperture proximate the first end and a second aperture proximate the second end,”

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[b] of the ’864 Patent.

p. ’864 Patent, claim 9[c]: “the first end of the housing being adapted to electrically couple to the power source”

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[c] of the ’864 Patent.

q. ’864 Patent, claim 9[d]: “the first aperture and the second aperture being in communication with one another to permit an airflow through the housing from the first aperture to the second aperture”

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[d] of the ’864 Patent.

r. ’864 Patent, claim 9[e]: “a heating element located in the interior of the housing, the heating element extending transversely to a central longitudinal axis of the housing and being at least partially exposed to the airflow”

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[e] of the ’864 Patent.

s. ’864 Patent, claim 9[f and g]: “the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow”

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[f and g] of the ’864 Patent.

NJOY Exhibit 2008.0790
Juul v. NJOY
IPR2024-00161

[redacted]

t. ’864 Patent, claim 9[h]: “the heating element being responsive to electrical power received from the power source”

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[h] of the ’864 Patent.

u. ’864 Patent, claim 9[i]: “wherein the airflow through the housing follows an airflow path, a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing”

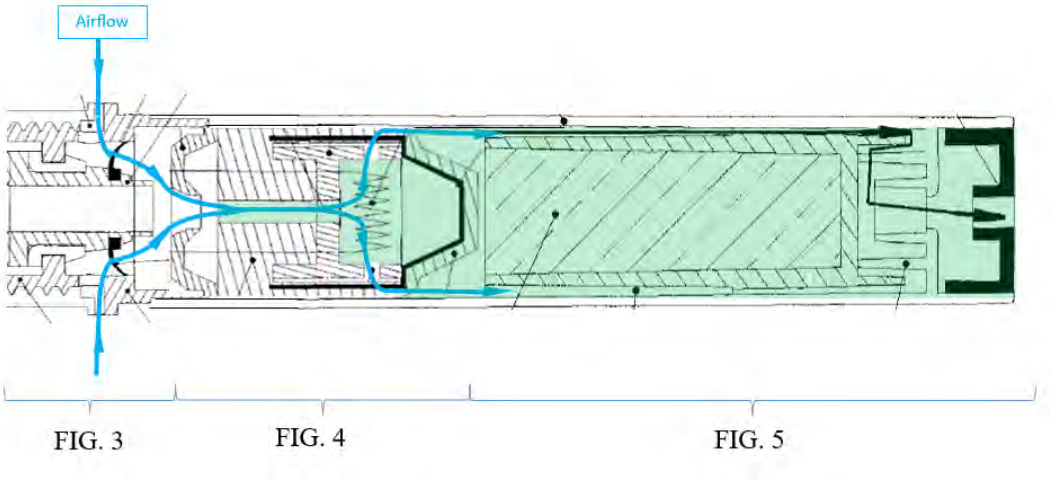
1. Xia ’610 in view of Wang ’554 and Fang ’044 and Smoke Fifty-One Duo– ’864 Patent, Claim 9[i]

The evidence will show that Xia ’610 discloses or renders obvious, alone or in combination with Wang ’554 and Fang ’044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 960-962; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia ‘610); JX-0595 (Fang ‘044); RX-0130C (Declaration of Yardimici).

For example, Xia ’610 discloses an airflow path substantially centrally and axially proximate to both the first and second apertures, where the airflow path occurs within the airflow passageway. For example, at least as NJOY interprets the claims:

NJOY Exhibit 2008.0791
Juul v. NJOY
IPR2024-00161

[redacted]



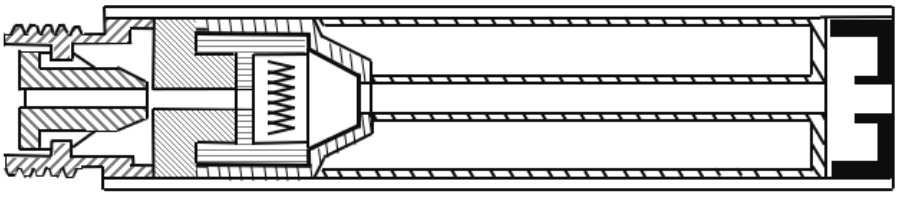
See JX-0596 (Xia '610) at FIGs 3-5*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 961.

The evidence will show that the airflow path in the first portion (near the first aperture) is entirely central and axial, where it passes through the middle of the spray hole 904. And the evidence will also show that the airflow path through the second portion (near the second aperture) is substantially central and axial at least as NJOY interprets the scope of this claim within the mouthpiece. For example, NJOY interprets as being within the scope of this claim an [redacted]. Under that interpretation of the claim scope, the airflow path that enters the mouthpiece chamber from the central hole satisfies this requirement, as does the airflow through the mouthpiece exit tube in Xia '610.

Additionally, Xia '610 renders obvious an airflow path substantially centrally and axially proximate to both the first and second apertures. As discussed above, the evidence will show that the following image illustrates an example obvious modification of Xia '610:

NJOY Exhibit 2008.0792
Juul v. NJOY
IPR2024-00161

[redacted]



Modified

See JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 962.

In this obvious modification, air flows substantially centrally and axially through the entire distance between the first aperture and the second aperture, including in locations proximate to both apertures.

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '864 Patent, Claim 9[i]

The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 963; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici). NJOY and its expert do not dispute that this limitation is met by Wang '554. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 757-770; CX-2726C (Vallee Reb. Rpt.) at Appx. A-2, ¶ 217.

For example, the evidence will show that Wang '554 discloses an airflow path substantially centrally and axially proximate to both the first and second apertures, where the airflow path occurs within the airflow passageway:

NJOY Exhibit 2008.0793
Juul v. NJOY
IPR2024-00161

[redacted]

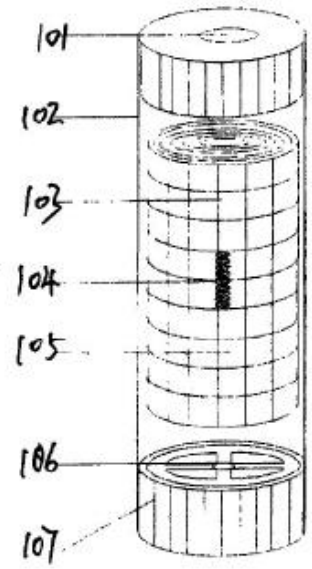


图3

See RX-0005 (Wang '554) at FIG 3; *see also* RX-1557C (Exh. 16 of Wang Deposition) at NJOYITC1_00122547; JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 963.

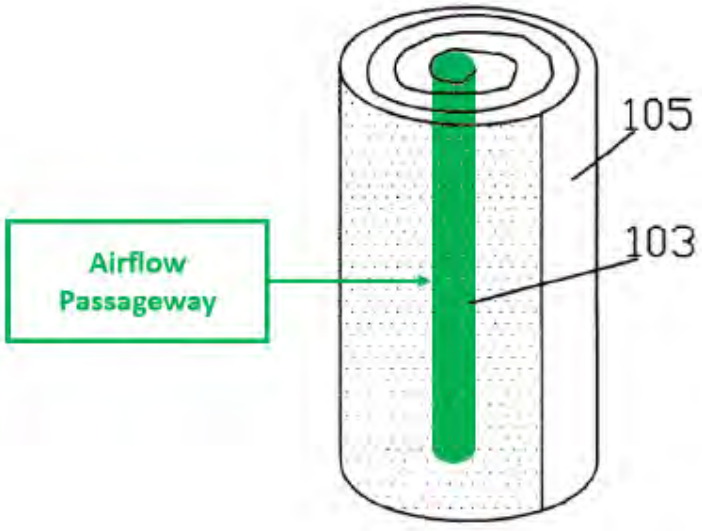


图 5

See RX-0005 (Wang '554) at Fig. 5 (annotated).

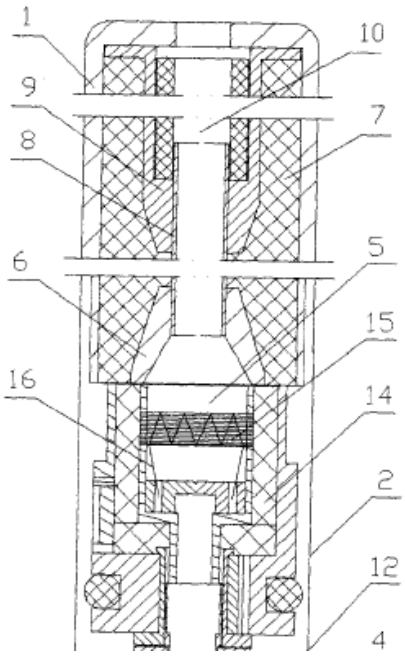
NJOY Exhibit 2008.0794
Juul v. NJOY
IPR2024-00161

[redacted]

3. Fang ’044 in view of Xia ’610 and Wang ’554 and Smoke Fifty-One Duo – ’864 Patent, Claim 9[i]

The evidence will show that Fang ’044 discloses or renders obvious, alone or in combination with Xia ’610 and Wang ’554 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 964-965; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang ‘044); JX-0596 (Xia ‘610); RX-0005 (Wang ‘554); RX-0130C (Declaration of Yardimici).

For example, the evidence will show that Fang ’044 discloses an airflow path substantially centrally and axially proximate to both the first and second apertures, where the airflow path occurs within the airflow passageway:



See JX-0595 (Fang ‘044) at FIG. 1; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 964.

NJOY Exhibit 2008.0795
Juul v. NJOY
IPR2024-00161

[redacted]

4. Wang '927 in view of Wang '554 and NPRO Style – '864 Patent, Claim 9[i]

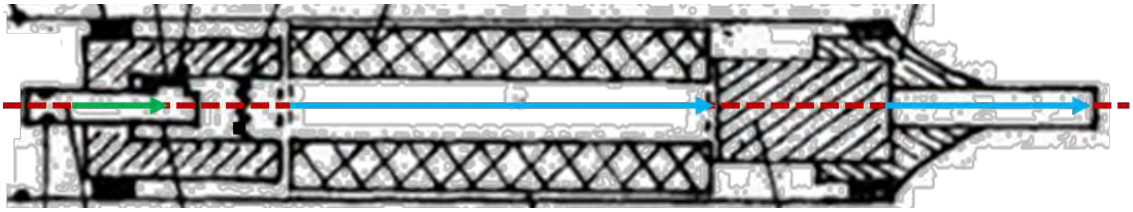
The evidence will show that Wang '927 discloses or renders obvious, alone or in combination with Wang '554 and NPRO Style this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 356-362; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang '927); RX-0005 (Wang '554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style).

For example, the evidence will show that Wang '927 discloses an airflow path substantially centrally and axially proximate to both the first and second apertures, where the airflow path occurs within the airflow passageway. *Id*.

For example, under NJOY's interpretation that the first/second portion proximate the first/second end can be of any length, as annotated in the figure below, a first portion of the airflow (annotated by the green arrow) is close to the left end of the tail end and it is defined substantially centrally and axially with respect to the central longitudinal axis of the casing (annotated in red). JX-0594 (Wang '927) at Fig. 1 and JX-0594.3-5. Wang '927 also discloses a second portion of the airflow path proximate the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing. *Id.* For example, as annotated in the figure below, a second portion of the airflow (annotated by the blue arrows) is close to the right end of the tail end and is defined substantially centrally and axially with respect to the central longitudinal axis of the casing (annotated in red). *Id.* The airflow in the cigarette holder is close to the second end (i.e., the right end of the cigarette holder) and is defined substantially centrally and axially with respect to the central longitudinal axis of the casing as shown below. *Id.*

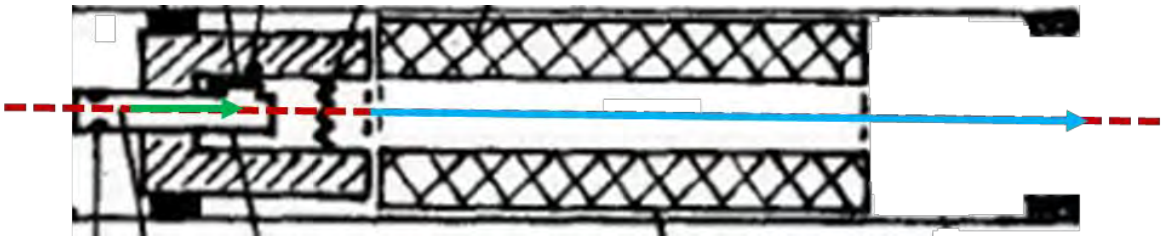
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Juul v. NJOY
IPR2024-00161

[redacted]



See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end) (annotated in green, red, and blue) ; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 359.

Moreover, to the extent it is determined that the cigarette holder cannot be part of the housing, the portion of the airflow in the ventilation channel and the mouthpiece chamber is close to the opening of the casing and defined substantially centrally and axially with respect to the central longitudinal axis of the casing. JX-0594 (Wang '927) at Fig. 1 and JX-0594.3-5.



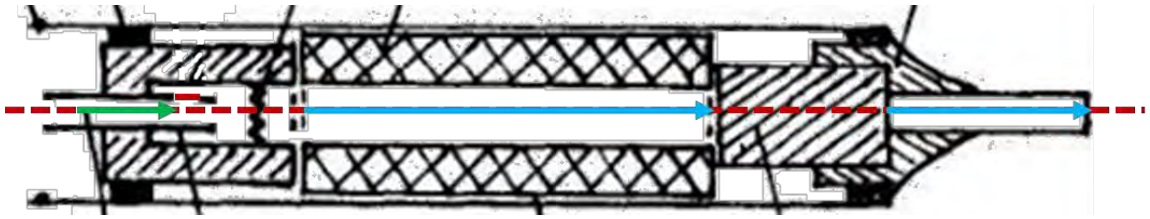
See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end; modified to remove the cigarette holder) (annotated in green, red, and blue); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 360.

Furthermore, to the extent a POSITA modified the air intake pipe as discussed above, the airflow through the air intake channel, atomizer chamber, ventilation channel, and mouthpiece channel follows a central and axial airflow path. JX-0594 (Wang '927) at Fig. 1 and JX-0594.3-5. Specifically, a first portion of the airflow path proximate the opening on the left end of the modified air intake pipe (annotated in green below) is defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the right end of the cigarette holder (annotated in blue below) is defined substantially centrally

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Juul v. NJOY
IPR2024-00161

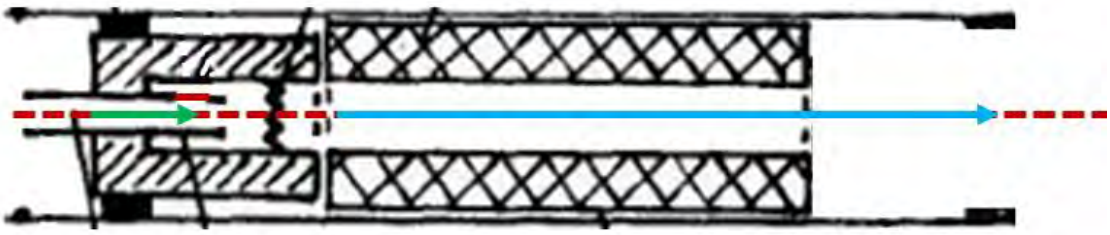
[redacted]

and axially with respect to the central longitudinal axis of the housing. *Id*. The airflow in the cigarette holder is also close to the second end (i.e., the right end of the cigarette holder) and is defined substantially centrally and axially with respect to the central longitudinal axis of the casing as shown below. *Id.*



See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end with modified air intake pipe) (annotated in green, red, and blue); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 361.

Moreover, under NJOY's interpretation that the mouthpiece does not need to be part of the cartridge, a first portion of the airflow path proximate the opening on the left end of the modified air intake pipe (annotated in green below) is defined substantially centrally and axially with respect to the central longitudinal axis of the housing. JX-0594 (Wang '927) at Fig. 1 and JX-0594.3-5. A second portion of the airflow in the ventilation channel and the mouthpiece chamber is close to the opening of the casing and defined substantially centrally and axially with respect to the central longitudinal axis of the casing. *Id*.



NJOY Exhibit 2008.0798
Juul v. NJOY
IPR2024-00161

[redacted]

See JX-0594 (Wang ’927) at Fig. 1 (cropped to only show the tail end with modified air intake pipe; modified to remove the cigarette holder) (annotated in green, red, and blue); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 362.

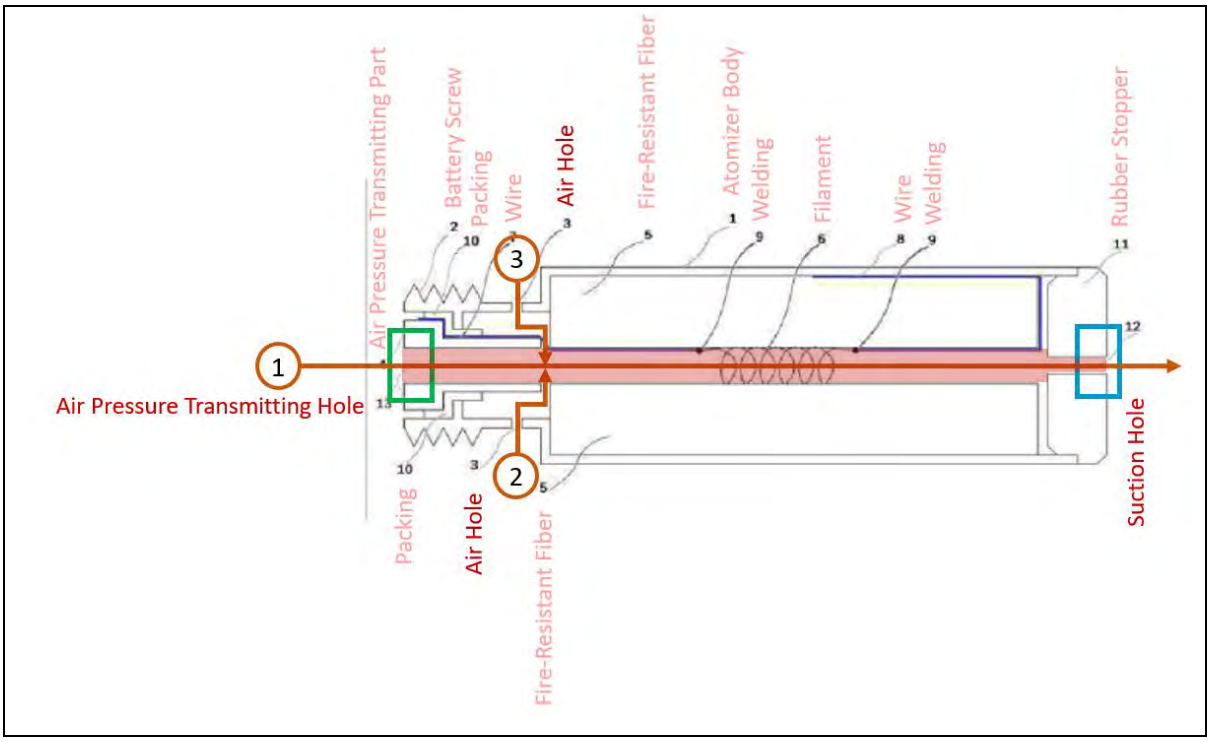
5. Han ’364 in view of Fang ’044 and NPRO Style – ’864 Patent, Claim 9[i]

The evidence will show that Han ’364 in view of Fang ’044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 364-366; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han ’364 certified English Translation) ; JX-0595 (Fang ‘044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit). NJOY and its expert do not dispute that Han ’364 discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant’s First Sup. Validity Contentions (03/12/2024)) at 893-897. CX-2726C (Vallee Reb. Rpt.) at Appx. C, ¶ 332.

For example, air can flow in the cartridge disclosed in Han ’364 along the central axis of the cartridge housing, throughout the entire length of the airflow passageway. *See* JX-0631 (Han ’364 certified English Translation) at [0013]; FIG. 1. Because of this configuration, air close to the first aperture, as well as air close to the second aperture, would all collectively flow in a central and axial path from the first aperture to the second aperture. *See id.*

NJOY Exhibit 2008.0799
Juul v. NJOY
IPR2024-00161

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See id. at FIG. 1 (annotated); JX-0632C (Leinsing Opening Rpt.) at ¶ 375.

6. Red Dragon in view of Fang '044 and Wang '927 – '864 Patent, Claim 9[i]

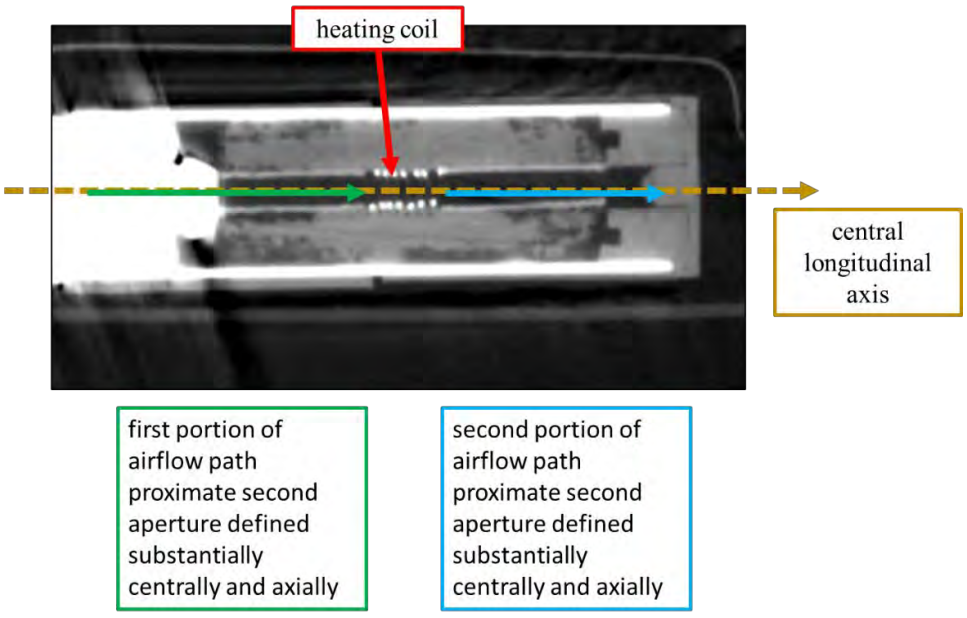
The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 357-359; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927). NJOY and its expert do not dispute that the Red Dragon discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 916-937; CX-2726C (Vallee Reb. Rpt.) at Appx. E, ¶ 177.

NJOY Exhibit 2008.0800
Juul v. NJOY
IPR2024-00161

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The evidence will show that the Red Dragon discloses or renders obvious this claim limitation. Mr. Leinsing will opine that a first portion of an airflow path is close to the air inlet on the first end and it is defined substantially centrally and axially with respect to the central longitudinal axis of the housing. *See, e.g.,* RX-0077 at RX-0077.22 ; *see also* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶¶ 357-359. Mr. Leinsing will also opine that there is a second portion of an airflow path is close to the air exit hole on the second end being defined substantially centrally and axially with respect to the central longitudinal axis of the housing. *Id.*

4.



See RX-0077 (Photos of Red Dragon Kit #2) at RX-0077.22 (annotated); *see also* JX-0638C (Leinsing Invalidity Rpt., Appx. E) at ¶ 359.

7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '864 Patent, Claim 9[i]

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 349-351; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927). NJOY and its expert do not dispute that

NJOY Exhibit 2008.0801
Juul v. NJOY
IPR2024-00161

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Smoke Fifty-One Duo discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 897-916; CX-2726C (Vallee Reb. Rpt.) at Appx. D, ¶ 222.

The evidence will show that the Smoke Fifty-One Duo discloses or renders obvious this claim limitation. Mr. Leinsing will opine that a first portion of an airflow path is close to the air inlet on the first end and it is defined substantially centrally and axially with respect to the central longitudinal axis of the housing. *See, e.g.,* RX-0130C (Declaration of Yardimici) at RX-0130C.38; *see also* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 349-351. Mr. Leinsing will also opine that there is a second portion of an airflow path is close to the air exit hole on the second end being defined substantially centrally and axially with respect to the central longitudinal axis of the housing. *Id.*

8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 9[i]

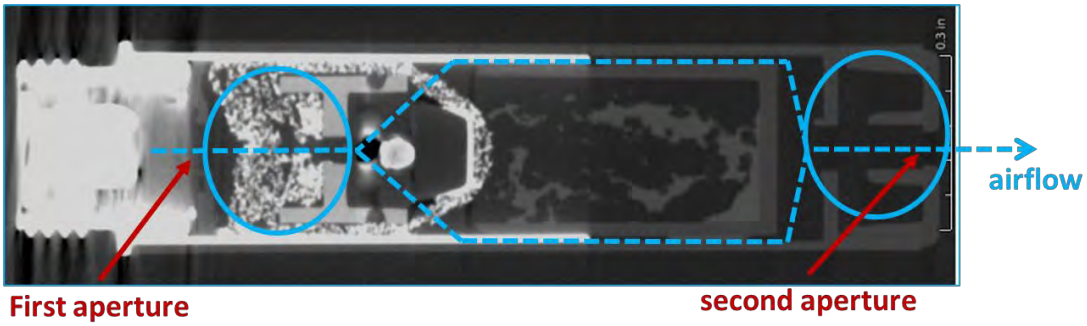
The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 350-353; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 548-612; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044).

The evidence will show that the NJOY NPRO discloses or renders obvious this claim limitation. *Id.* For example, under NJOY's interpretation that the first/second portion proximate the first/second end can be of any length, the blue ovals in the annotated CT scan below show (1) the portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing and (2) the portion of the

NJOY Exhibit 2008.0802
Juul v. NJOY
IPR2024-00161

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airflow path proximate the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.



See JX-0404 (CT Scans of NJOY NPRO) at JX-0404.11 (annotated in red and blue); *see also* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 350-353.

Additionally, Mr. Leinsing will opine that a POSITA would understand that an airflow that passes through the first aperture and the second aperture travels along a longitudinal axis of the housing to get from the first aperture to the second aperture. *See* RX-0082 (Photos of NJOY NPRO) at RX-0082.86; *see also* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 350-353.

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 9 [i]

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 350-353; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.

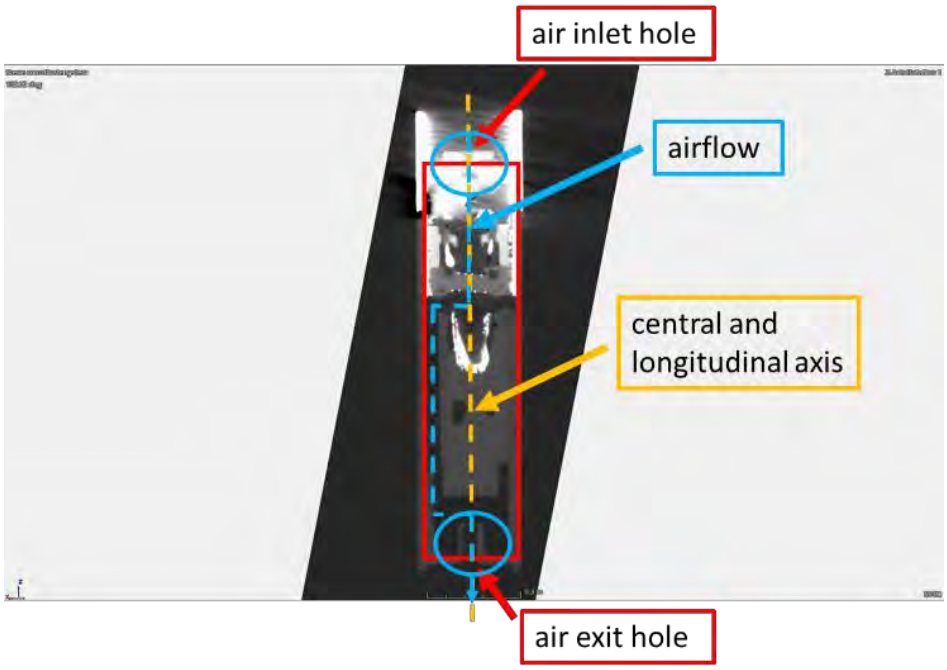
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Juul v. NJOY
IPR2024-00161

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10. Cigarette Electronique – '864 Patent, Claim 9[i]

The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 429-432; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).. NJOY and its expert do not dispute that this limitation is met by the Cigarette Electronique. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 937-963; CX-2726C (Vallee Reb. Rpt.) at Appx. F, pg. xi.

For example, as Mr. Leinsing will opine, the blue ovals in the annotated CT scan below show (1) the portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing and (2) the portion of the airflow path proximate the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.

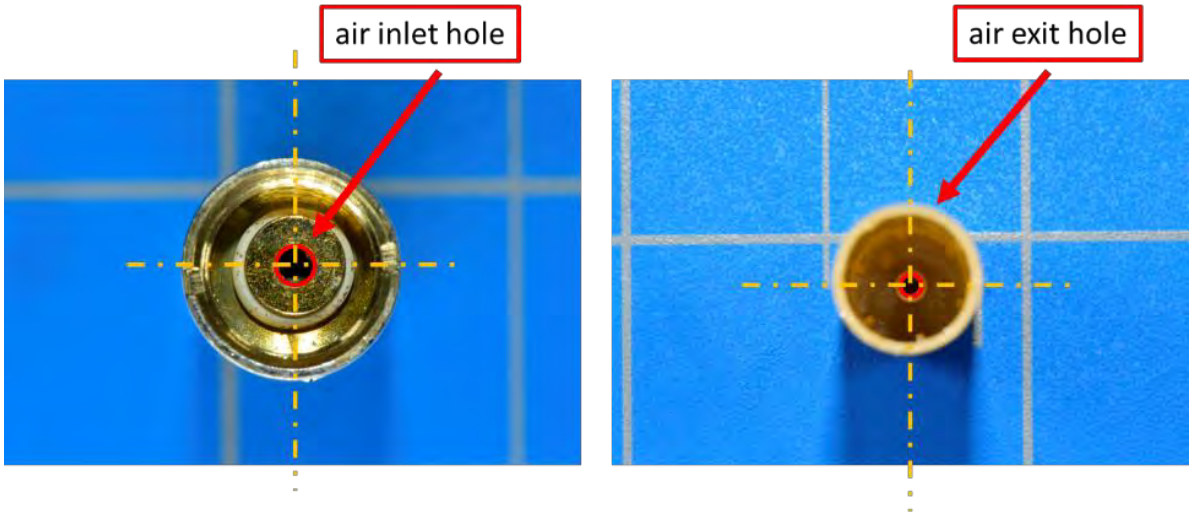


NJOY Exhibit 2008.0804
Juul v. NJOY
IPR2024-00161

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See JX-0401 (Photos of Cigarette Electronique) at JX-0401.5 (annotated in red, yellow, and blue); *see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 429-431.

Additionally, the first aperture and the second aperture are both positioned centrally with respect to the housing. Mr. Leinsing will opine that a POSITA would understand that an airflow that passes through the first aperture and the second aperture travels along a longitudinal axis of the housing to get from the first aperture to the second aperture.



See RX-0072 at RX-0072.35 (annotated in red and yellow); RX-0072 at RX-0072.102 (annotated in red and yellow) *see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 432.

11. Fuma Prototype – '864 Patent, Claim 9[i]

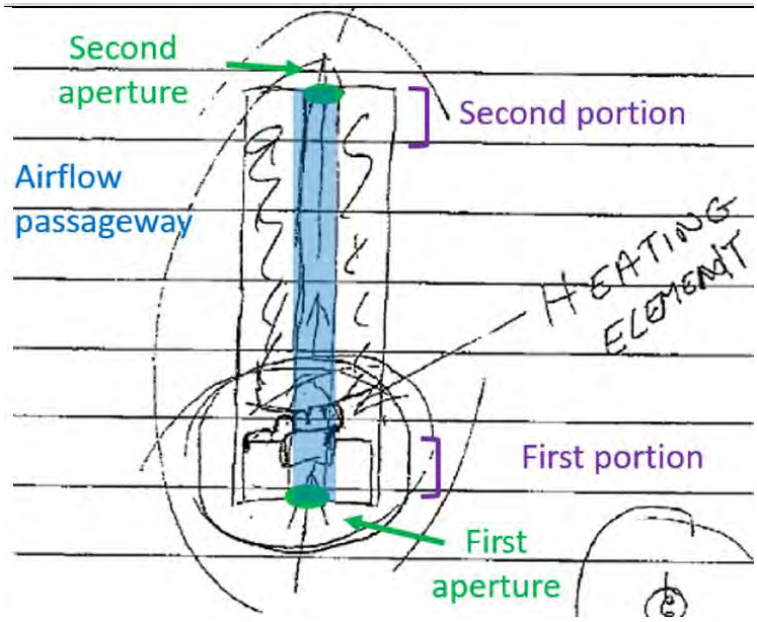
The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 324-326; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

For example, the airflow through the housing follows a path where air comes in from the air inlet, travel around the heating coil and wick, converge after the heating coil and wick, and pass through the woven spacer to reach the air exit hole. The Fuma Prototype discloses a first portion of the airflow path that is close to the air inlet on the first end being defined substantially centrally

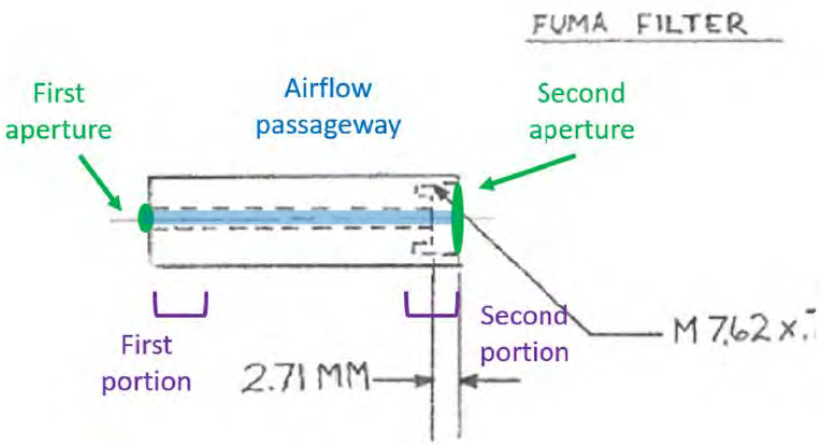
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Juul v. NJOY
IPR2024-00161

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and axially with respect to the central longitudinal axis of the housing. The Fuma Prototype also discloses a second portion of the airflow path that is close to the air exit hole on the second end being defined substantially centrally and axially with respect to the central longitudinal axis of the housing as shown below.



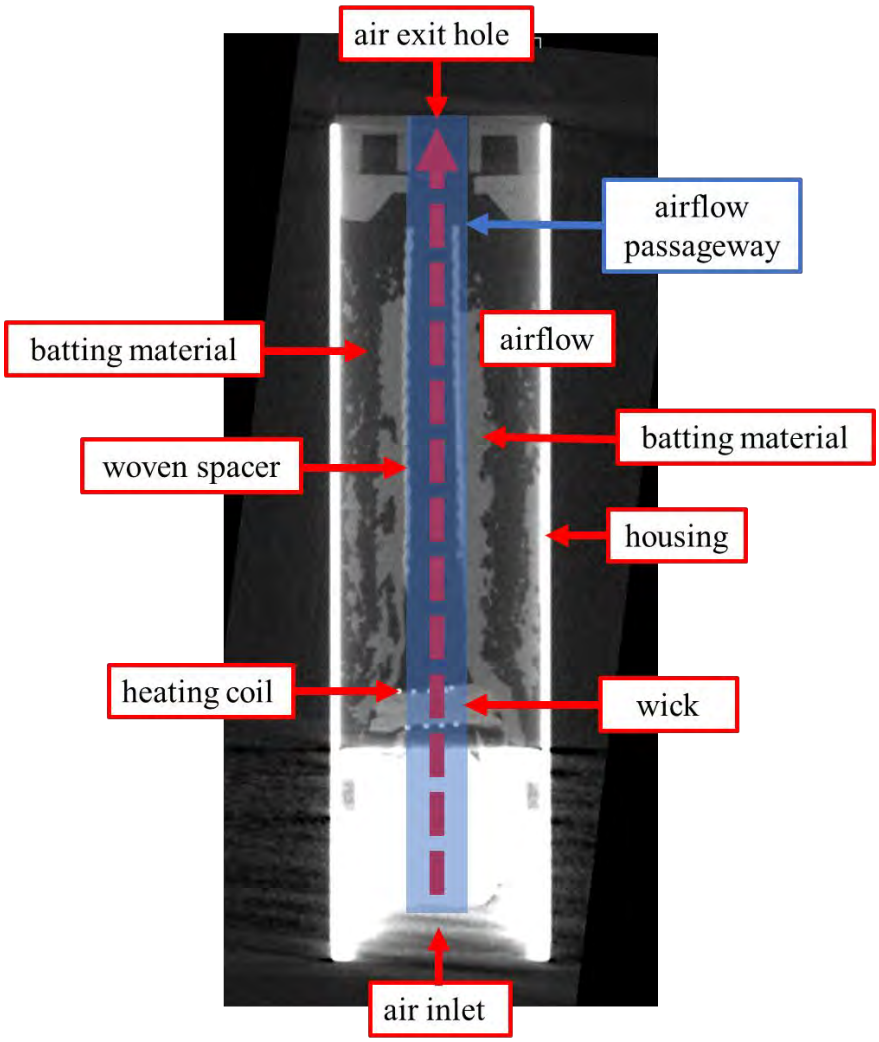
See '864 Priority Chart at 32 (citing CRTP Attachment C).



See '864 Priority Chart at 25 (citing CRTP Attachment E at FUMA-INSPECTION-0036).

NJOY Exhibit 2008.0806
Juul v. NJOY
IPR2024-00161

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See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.17 (annotated in red and blue).

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses claim element 9(i). *See* Conley '864 Declaration at ¶5 (Dependent claim 54).

NJOY also admitted that the Fuma Prototype discloses claim element 9(i). *See* '864 Priority Chart at 32-33.

NJOY Exhibit 2008.0807
Juul v. NJOY
IPR2024-00161

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v. ’864 Patent, claim 10: “[t]he cartridge of claim 9, further in combination with a power source adapted to be electrically coupled to the first end of the housing, the power source including a battery”

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 2 of the ’864 Patent.

w. ’864 Patent, claim 12: “[t]he cartridge of claim 9, wherein the heating element includes a wicking material being operative to permit at least a portion of the solution to be held in the solution holding medium to be drawn toward the heating element to be vaporized”

1. Xia ’610 in view of Wang ’554 and Fang ’044 and Smoke Fifty-One Duo– ’864 Patent, Claim 12

The evidence will show that Xia ’610 discloses or renders obvious, alone or in combination with Wang ’554 and Fang ’044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 981-983; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia ‘610); JX-0595 (Fang ‘044); RX-0130C (Declaration of Yardimici). NJOY and its expert do not dispute that this limitation is met by Xia ’610. *See* CX-2110 (Complainant’s First Sup. Validity Contentions (03/12/2024)) at 793-805; CX-2726C (Vallee Reb. Rpt.) at Appx. A-1, p. 8 (going directly from claim 9 to claim 16).

For example, at least under NJOY’s interpretation of the claims, in which the wicking material can be separate from the heating material, Xia ’610 discloses or renders obvious this limitation. Xia ’610 explains that the liquid guiding mechanism 11 wicks liquid between the liquid storage chamber 12 and the secondary liquid storage chamber 10: “One end of the liquid-guiding mechanism 11 is connected with the secondary liquid storage chamber 10 through the liquid guiding body 1102, and the other end is in contact with the liquid storage chamber 12.” JX-0596 (Xia ‘610) at JX-0596.13*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 981. Xia ’610 states that the wicking is done via capillary action: “[t]hrough a capillary action of the liquid-

NJOY Exhibit 2008.0808
Juul v. NJOY
IPR2024-00161

guiding mechanism 11, the chemical liquid stored in the liquid storage chamber 12 is guided into the secondary liquid storage chamber 10." JX-0596 (Xia '610) at JX-0596.13*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 981. In doing so, the liquid is brought toward the heater because "the heater 9 is wrapped with the liquid-guiding mechanism 11 (see Fig. 4)." JX-0596 (Xia '610) at JX-0596.10*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 981. Xia '610 also identifies liquid guiding mechanism 11 as comprised of absorptive materials: "The liquid guiding body 1102 is made of a multi-layer foam nickel mesh or other metal porous bodies." JX-0596 (Xia '610) at JX-0596.13*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 981. Thus, the evidence will show that the liquid guiding mechanism 11 draws solution from the liquid storage tank 12 toward the heater 9 to be vaporized. Thus, liquid guiding mechanism 11 is a "wicking material being operative to permit at least a portion of the solution to be held in the solution holding medium to be drawn toward the heating element to be vaporized."

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '864 Patent, Claim 12

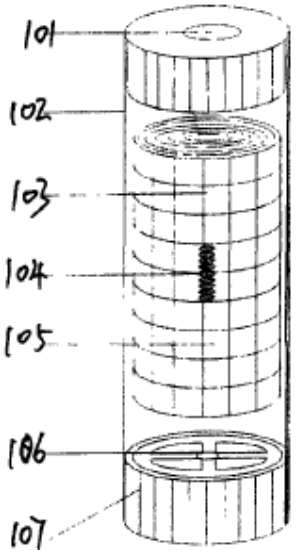
The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 984-985; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

For example, at least under NJOY's interpretation of the claims, in which the wicking material can be separate from the heating material, Wang '554 discloses or renders obvious this limitation. The evidence will show that Wang '554 discloses the use of organic fiber, soaked with a solution, to deliver the solution to the heating element. Wang '554 states that the "tobacco extract 103…is natural tobacco absolute oil, a certain proportion of nicotine is mixed in after the tobacco

NJOY Exhibit 2008.0809
Juul v. NJOY
IPR2024-00161

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extract is diluted with alcohols in a certain proportion, and then a mixture quantitatively soaked in the organic fiber 105. Since the tobacco extract 103 is in a liquid or paste state, when heated, the tobacco extract 103 is first vaporized into smoke." RX-0005 (Wang '554) at RX-0005.7; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 984. Thus, a portion of the solution is drawn toward the heating element via element 105, acting as a wicking material, where the portion that holds the solution is located immediately adjacent both opposite ends of the heating element.



See RX-0005 (Wang '554) at Fig. 3; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 984.

Additionally, Mr. Leinsing will opine that a POSITA would have found it obvious to modify Wang '554 so as to have an oil storage device flanking both sides, or opposite ends, of the heating element while having a portion that extends through a heating film wire so to draw solution to both ends. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 985. Thus with the obvious modification of Wang '554, this limitation is met as well.

NJOY Exhibit 2008.0810
Juul v. NJOY
IPR2024-00161

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3. Fang ’044 in view of Xia ’610 and Wang ’554 and Smoke Fifty-One Duo – ’864 Patent, Claim 12

The evidence will show that Fang ’044 discloses or renders obvious, alone or in combination with Xia ’610 and Wang ’554 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 986; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang ‘044); JX-0596 (Xia ‘610); RX-0005 (Wang ‘554); RX-0130C (Declaration of Yardimici).

For example, at least under NJOY’s interpretation of the claims, in which the wicking material can be separate from the heating material, Fang ’044 discloses or renders obvious this limitation. The evidence will show that Fang 044 discloses the use of temporary oil storage device 15 that has the heating wire wrapped around it, and is in fluid connection with the solution holding medium to draw oil toward the heater: “a temporary oil storage device 15 composed of a set of capillary tubes and an electric heating film wire 16, the oil storage device 14 is in contact with the temporary oil storage device 15 and the oil conservator 7 in the sucker 1, the electric heating film wire 16 is wound on the temporary oil storage device 15.” Fang 044 at 1268; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 986. Fang explains that the capillary action of the temporary oil storage device draws the liquid in from the sides of the heater toward the heater: “due to the action of the capillary tubes, the temporary oil storage device 15 sucks in nicotine oil stored in the nicotine oil storage device 14, when the electric heating film wire 16 is powered on to heat, nicotine oil on the temporary oil storage device 15 is fumed to produce nicotine oil smoke.” Fang 044 at 1269; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 986.

4. Wang ’927 in view of Wang ’554 and NPRO Style – ’864 Patent, Claim 12

The evidence will show that Wang ’927 discloses or renders obvious, alone or in combination with Wang ’554 and NPRO Style this limitation. *See* JX-0634 (Leinsing Opening

NJOY Exhibit 2008.0811
Juul v. NJOY
IPR2024-00161

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Rpt., Appx. B) at ¶¶ 370-371; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang '927); RX-0005 (Wang '554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style).

For example, at least under NJOY's interpretation of the claims, in which the heating element can include a separate wick, Wang '927 discloses or renders obvious this limitation. JX-0594 (Wang '927) at Fig. 1 and JX-0594.3-5. Wang '927 discloses the atomizer holder that holds the electric heating wire in place. JX-0594 (Wang '927) at Fig. 1. A POSITA would understand that the atomizer holder is made up of a wicking material such as ceramic so that it can bring tobacco juice to the heating wire for vaporization. *Id.* For example, a POSITA would understand that the atomizer holder is made of an insulative material because Wang '927 discloses using the air intake switch 7 and switch contact 8 to turn on or off the e-cigarette. *See e.g.*, JX-0594 (Wang '927) at JX-0594.3-5; *see also* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶ 371. Using a conductive material for atomizer housing would make the e-cigarette disclosed in Wang '927 nonfunction. *Id*. Further, Wang '927 discloses that "[a]ir carries heat generated by the electric heating wire 9, causing tobacco juice filled into the fiber filler in the tobacco juice bin 13 to vaporize to form smoke." JX-0594 (Wang '927) at JX-0594.5; *see also* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶ 371. Moreover, it was well known in the art to use ceramic, which is an insulative and wicking material for the atomizer holder. *Id*. As shown in Fig. 1 of Wang '927, the atomizer chamber is operative to permit a portion of the solution to be held in the fiber filler to be drawn toward the electric heating wire to be vaporized. JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5; *see also* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶ 371.

NJOY Exhibit 2008.0812
Juul v. NJOY
IPR2024-00161

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5. Han ’364 in view of Fang ’044 and NPRO Style – ’864 Patent, Claim 12

The evidence will show that Han ’364 in view of Fang ’044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 374-377; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han ’364 certified English Translation) ; JX-0595 (Fang ‘044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit).

For example, at least under NJOY’s interpretation of the claims, in which the wicking material can be separate from the heating material, Han ’364 in view of Fang ‘044 discloses or renders obvious this limitation. Fang ’044 discloses temporary oil storage device 15, which serves as a wick to draw in solution, from the oil storage device 14, to electric heating film wire 16. *See* JX-0595 (Fang ’044), at JX-0595.6; *see also* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 374-377. Mr. Leinsing will opine that it would have been obvious to a person of ordinary skill in the art to modify Han ’364 with Fang ’044 to include a wicking material for attracting solution from the solution holding medium to the heating element. For example, connecting the wicking material disclosed in Fang ’044 to Han’s filament 6 would assist in drawing solution to the filament. To the extent Han ’364 is modified to include the orientation of the heating element disclosed in Fang ’044, a person of ordinary skill in the art would have been motivated to also incorporate Fang ’044’s wicking material in Han ’364’s device, e.g., to more easily draw solution towards the filament 6, which would no longer extend vertically through the solution holding medium. A person of ordinary skill in the art would have been motivated to make this change to ensure that Han ’364’s modified e-cigarette device would still consistently vaporize solution held in its solution holding medium.

NJOY asserts that Han ’364 does not disclose or renders obvious this limitation for the same reasons as claim 1[e]. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. C, ¶361. However, NJOY

NJOY Exhibit 2008.0813
Juul v. NJOY
IPR2024-00161

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is incorrect for the same reasons as described in claim 1 [e]. *See* Section IV.G.1.xiii.j (claim 1[e]) *supra*.

6. Red Dragon in view of Fang '044 and Wang '927 – '864 Patent, Claim 12

The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 365-366; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927). NJOY and its expert do not dispute that the Red Dragon discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 916-937; CX-2726C (Vallee Reb. Rpt.) at Appx. E, pg. x (going directly from claim 11 to claim 15).

At least under NJOY's interpretation of the claims, in which the wicking material can be separate from the heating material, Red Dragon discloses or renders obvious this limitation. The Red Dragon has wicking material wrapped around the heating coil and configured to attract a portion of the e-liquid from the batting material towards the heating coil. *See, e.g.,* RX-0077 at RX-0077.22 ; RX-1126C (Evans 03/11/24 Tr.) at 88:3-7; 91:14-92:6; *see also* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶¶ 365-366.

7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '864 Patent, Claim 12

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at

NJOY Exhibit 2008.0814
Juul v. NJOY
IPR2024-00161

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¶¶ 358-360; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927). NJOY and its expert do not dispute that Smoke Fifty-One Duo discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 897-916; CX-2726C (Vallee Reb. Rpt.) at Appx. D, pg. xii (going directly from claim 11 to claim 13).

At least under NJOY's interpretation of the claims, in which the wicking material can be separate from the heating material, Smoke Fifty-One Duo discloses or renders obvious this limitation. The Smoke Fifty-One Duo has a wicking material wrapped around the heating element that is configured to attract a portion of the e-liquid from the nicotine pad toward the heating coil. *See, e.g.,* RX-0130C (Yardimici Declaration) at RX-0130C.68 (annotated in red); *see also* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 358-360.

8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 12

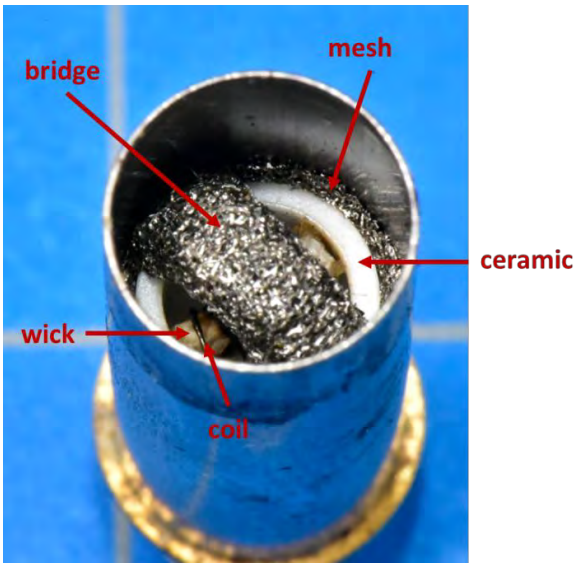
The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 361-362; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 548-612; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044). NJOY and its expert do not dispute that the NJOY NPRO discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 963-980; CX-2726C (Vallee Reb. Rpt.) at Appx. G, pgs. xiii-xiv (going directly from claim 9 to claim 16.

At least under NJOY's interpretation of the claims, in which the heating element can include a separate wick, NJOY NPRO discloses or renders obvious this limitation. *Id.* For example, the NPRO cartridge section includes an atomizer, and the atomizer includes a heating coil and a

NJOY Exhibit 2008.0815
Juul v. NJOY
IPR2024-00161

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wick, among other components. RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); JX-0632C (Leinsing Invalidity Rpt.) at ¶ 582. For example, the bridge and mesh surrounding the ceramic base are parts of the solution holding medium and are in fluid communication with the batting material. The wick draws the solution from the solution holding medium towards the heating coil for the solution to be vaporized. *See, e.g.,* RX-0082 (Photos of NJOY NPRO) at RX-0082.67; *see also* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 361-362.



RX-0082 (Photos of NJOY NPRO) at RX-0082.67 (annotated in red).

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 12

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 361-362; RPX-0006

NJOY Exhibit 2008.0816
Juul v. NJOY
IPR2024-00161

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(NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.

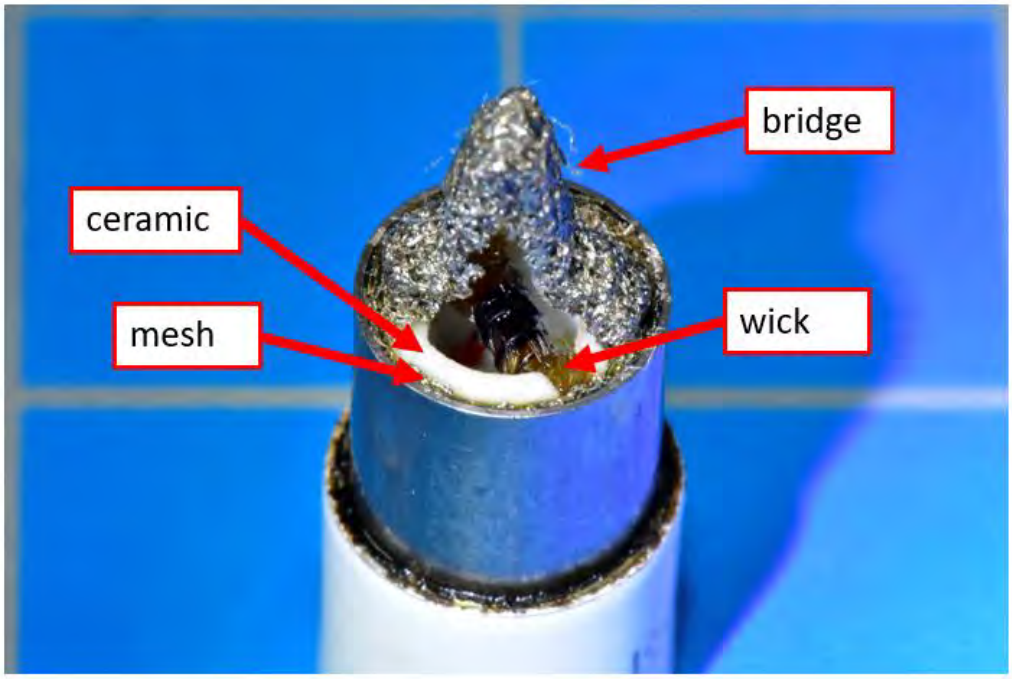
10. Cigarette Electronique – '864 Patent, Claim 12

The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 440-441; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).. NJOY and its expert do not dispute that this limitation is met by the Cigarette Electronique. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 937-963; CX-2726C (Vallee Reb. Rpt.) at pg. xi (going directly from claim 9 to claim 15).

At least under NJOY's interpretation of the claims, in which the wicking material can be separate from the heating material, Cigarette Electronique discloses or renders obvious this limitation. For example, the evidence will show the bridge and mesh surrounding the ceramic are parts of the solution holding medium and are in fluid communication with the batting material. The wick draws the solution towards the heating element via capillary action. The photo below identifies the mesh is located immediately adjacent to an end of the heating element (and wick surrounded by the heating element).

NJOY Exhibit 2008.0817
Juul v. NJOY
IPR2024-00161

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See CX-2763 at CX-2763.9; *see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 440-441.

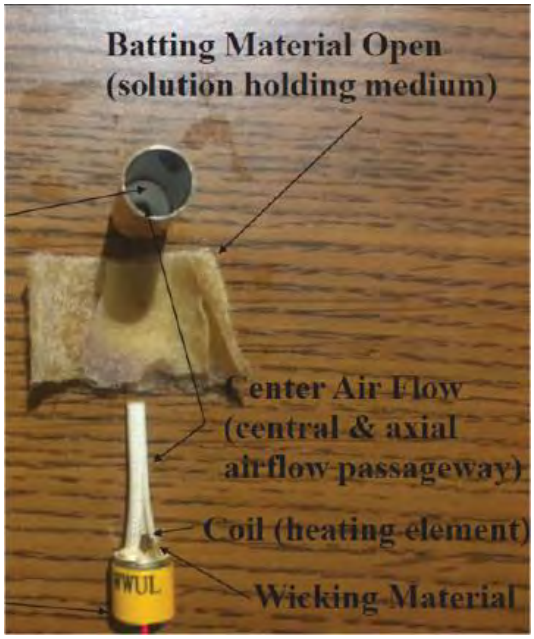
11. Fuma Prototype – '864 Patent, Claim 12

The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 334-336; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

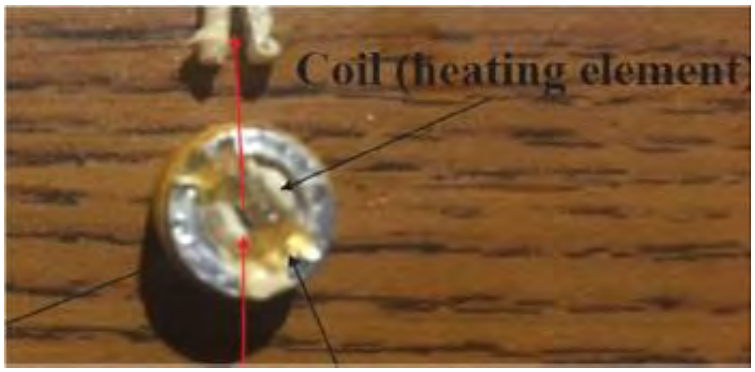
For example, the Fuma Cartridge includes a wick that is placed in the center of the heating coil as shown below. The wick is operative to permit at least a portion of the solution to be held in the batting material to be drawn towards the heating coil to be vaporized.

NJOY Exhibit 2008.0818
Juul v. NJOY
IPR2024-00161

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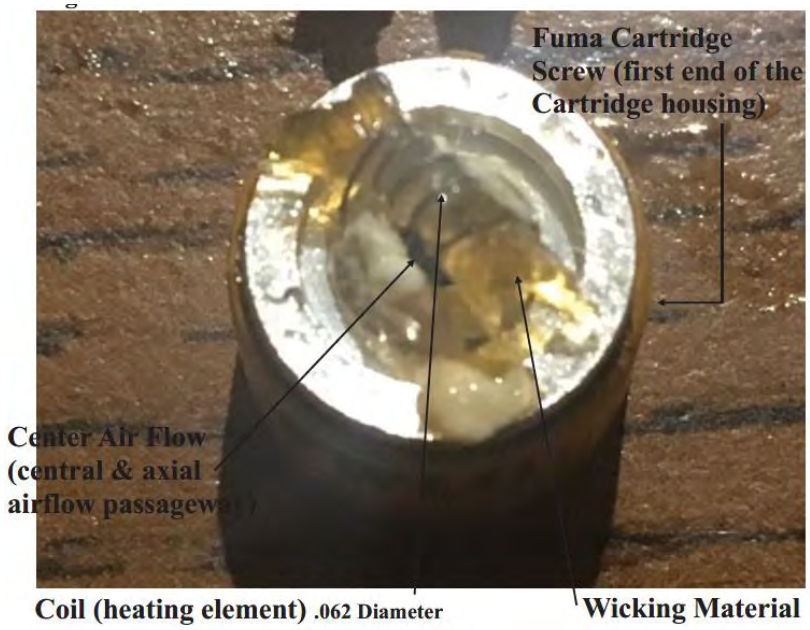
See '864 Priority Chart at 36 (citing CRTP Attachment D at Fig. 11).



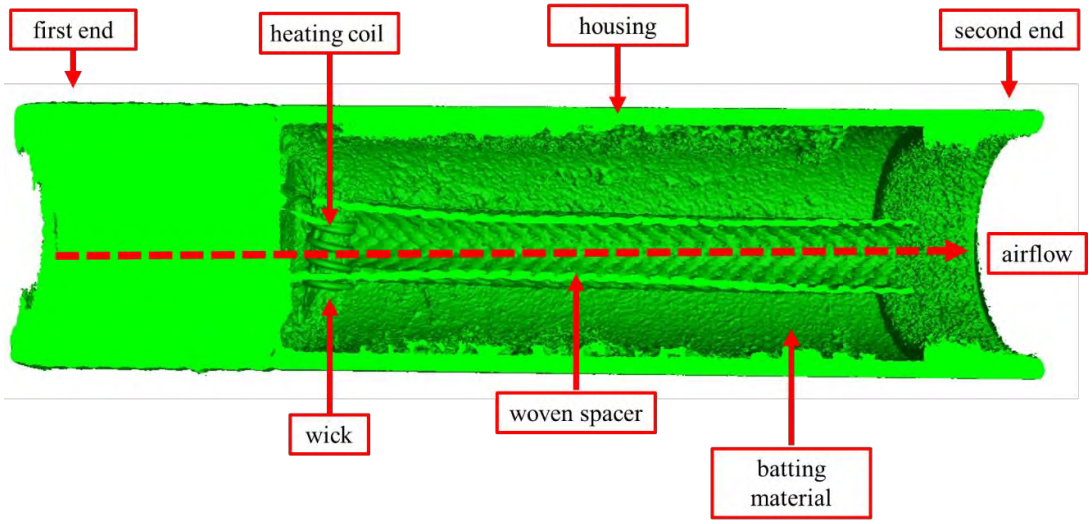
See CRTP Attachment D at Fig. 13.

NJOY Exhibit 2008.0819
Juul v. NJOY
IPR2024-00161

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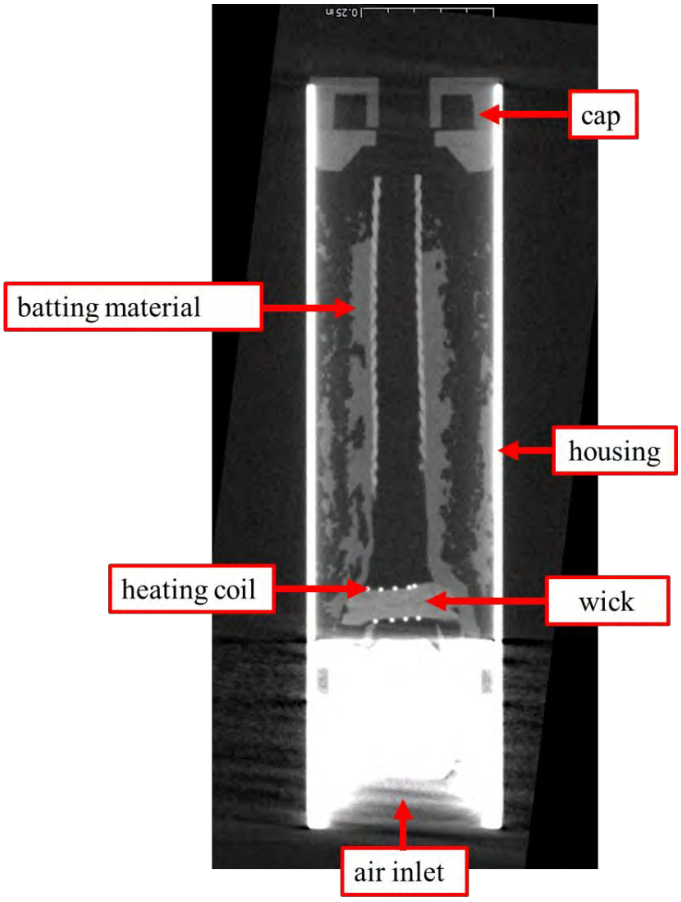


See CRTP Exhibit A at Fig. 14.



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.1 (annotated in red).

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See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.17 (annotated in red and blue).

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses claim element 12. *See* Conley '864 Declaration at ¶5 (Dependent claim 44).

NJOY also admitted that the Fuma Prototype discloses claim element 12. *See* '864 Priority Chart at 36.

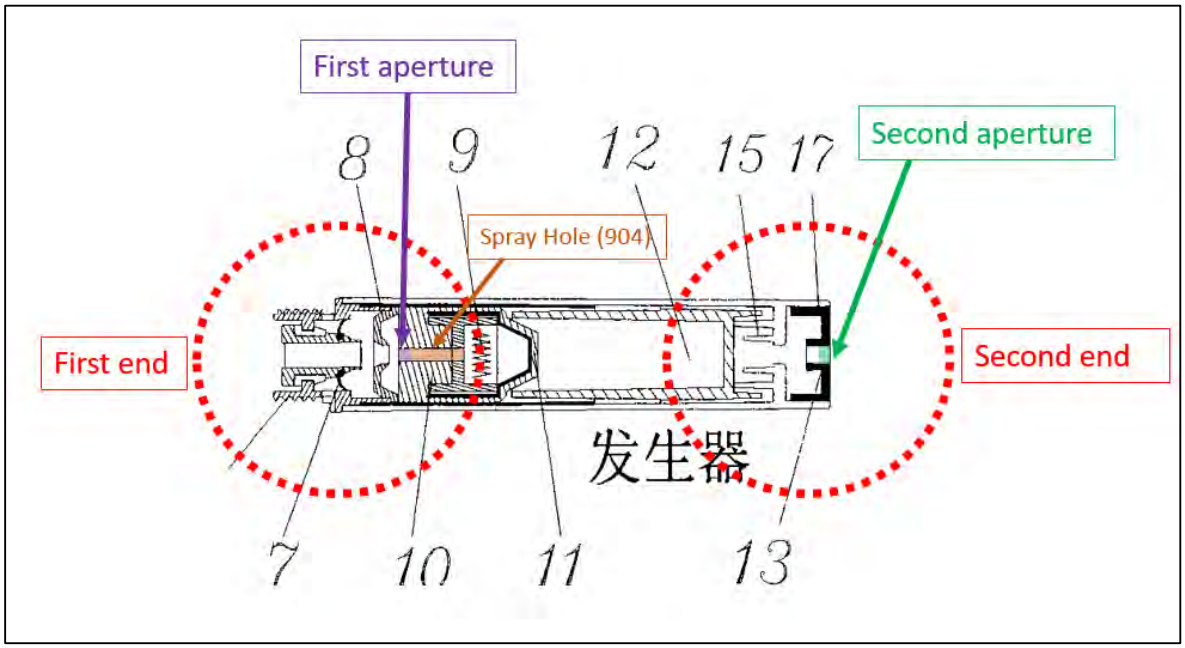
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x. ’864 Patent, claim 13: “[t]he cartridge of claim 9, wherein the first aperture proximate the first end is smaller than the second aperture proximate the second end”

1. Xia ’610 in view of Wang ’554 and Fang ’044 and Smoke Fifty-One Duo– ’864 Patent, Claim 13

The evidence will show that Xia ’610 discloses or renders obvious, alone or in combination with Wang ’554 and Fang ’044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 987-991; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia ‘610); JX-0595 (Fang ‘044); RX-0130C (Declaration of Yardimici). NJOY and its expert do not dispute that this limitation is met by Xia ’610. *See* CX-2110 (Complainant’s First Sup. Validity Contentions (03/12/2024)) at 793-805; CX-2726C (Vallee Reb. Rpt.) at Appx. A-1, p. 8 (going directly from claim 9 to claim 16).

For example, Xia ’610 discloses the first aperture smaller than the second in FIG. 2:



See JX-0596 (Xia ‘610) at Fig. 2*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 989.

NJOY Exhibit 2008.0822
Juul v. NJOY
IPR2024-00161

Additionally, two apertures can only have three relative sizes compared to each other: one bigger than the other, smaller than the other, or the same size. Therefore, Mr. Leinsing will opine that it would have been obvious to try each of the three possible relative configurations. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 990. Moreover, there are benefits to having the second aperture be larger than the first, including air and vapor flow. For example, within the device, the liquid is vaporized, increasing its volume. To ensure that there remains negative pressure within the device while a user sucks (and therefore that the heater remains on as Xia '610 describes), the geometry of the device needs to account for the additional volume of the vapor, and would be improved by increasing the extent of the negative pressure to begin with. Both are helped by having a relatively large second aperture, where a user sucks and where the air and vapor are extracted from the device – air leaves the second aperture more easily than it enters from the first aperture with a larger size.

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '864 Patent, Claim 13

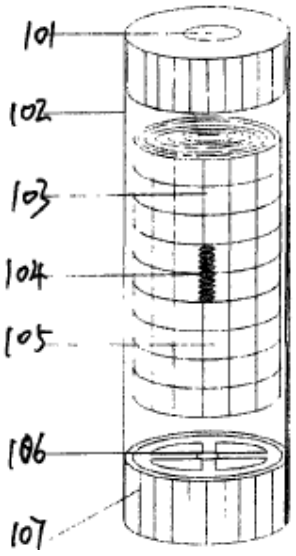
The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 992; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici). NJOY and its expert do not dispute that this limitation is met by Wang '554. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 757-770; CX-2726C (Vallee Reb. Rpt.) at Appx. A-2, p. x (going directly from claim 12 to claim 15).

For example, the evidence will show that Wang '554 illustrates first aperture 106 as smaller than second aperture 101. To the extent the first aperture on the first end is not seen as smaller than the second aperture on the second end, in Figure 3 of Wang '554 below, a POSITA would have

NJOY Exhibit 2008.0823
Juul v. NJOY
IPR2024-00161

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been motivated to make this change, ensuring that the first aperture was smaller than the second aperture to ensure proper airflow exiting the device.



See RX-0005 (Wang '554) at Fig. 3; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 992.

3. Fang '044 in view of Xia '610 and Wang '554 and Smoke Fifty-One Duo – '864 Patent, Claim 13

The evidence will show that Fang '044 discloses or renders obvious, alone or in combination with Xia '610 and Wang '554 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 993-994; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici).

For example, the evidence will show that as explained above, there are only three configurations that two relative sizes can have with respect to each other: one bigger than the other, smaller than the other, or the same size. Therefore, the first aperture smaller than the second aperture is at least obvious to try in view of Fang 044. Moreover, as also discussed above, a POSITA would recognize the benefits, including negative pressure management, that would come

NJOY Exhibit 2008.0824
Juul v. NJOY
IPR2024-00161

from having the first aperture smaller than the second, and therefore a POSITA would be motivated to do so. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 993.

4. Wang '927 in view of Wang '554 and NPRO Style – '864 Patent, Claim 13

The evidence will show that Wang '927 discloses or renders obvious, alone or in combination with Wang '554 and NPRO Style this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 372-373; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang '927); RX-0005 (Wang '554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style).

For example, as shown in Fig. 1 of Wang '927, the inner air intake hole as shown in Fig. 1 of Wang '927, the opening of the air intake pipe, or the modified first aperture (the diameter of which is the same as the diameter of the opening of the air intake pipe) is each smaller than the opening on the right end of the casing and the opening on the tip of the cigarette holder. JX-0594 (Wang '927) at Fig. 1. JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 373.

5. Han '364 in view of Fang '044 and NPRO Style – '864 Patent, Claim 13

The evidence will show that Han '364 in view of Fang '044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 378-381; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han '364 certified English Translation) ; JX-0595 (Fang '044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit).

For example, as Mr. Leinsing will opine, A person of ordinary skill in the art would be motivated to make a simple modification to Han '364 to enlarge the second aperture on rubber stopper 11, e.g., to improve airflow through the airflow passageway and to the user. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 378-381.

NJOY Exhibit 2008.0825
Juul v. NJOY
IPR2024-00161

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Complainant assert that Han '364 does not disclose or renders obvious this limitation for the same reasons as claim 1[b]. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. C, ¶ 365. However, NJOY is incorrect for the same reasons as described in claim 1 [b]. *See* Section IV.G.1.xiii.d (claim 1 [b]) *supra*.

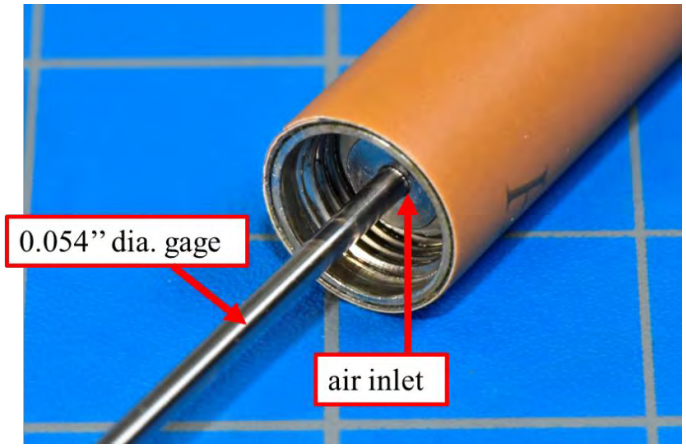
6. Red Dragon in view of Fang '044 and Wang '927 – '864 Patent, Claim 13

The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 367-369; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927). NJOY and its expert do not dispute that the Red Dragon discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 916-937; CX-2726C (Vallee Reb. Rpt.) at Appx. E, pg. x (going directly from claim 11 to claim 15).

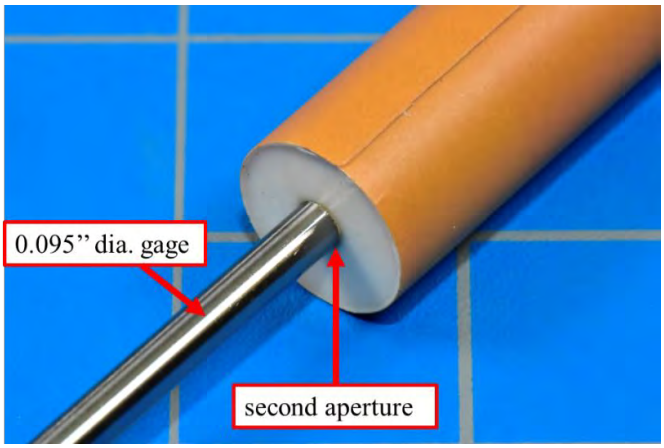
The evidence will show, and NJOY does not dispute, that the Red Dragon discloses or renders obvious this claim limitation. Mr. Leinsing will opine that he measured the cross-sectional area of the air inlet and the air exit hole using gages to confirm the first aperture proximate the first end of the Red Dragon cartomizer is smaller than the second aperture proximate the second end of the Red Dragon cartomizer. *See, e.g.,* RX-0074 (Photos of Red Dragon Kit #1) at RX_0074.28, 31; *see also* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶¶ 367-369.

NJOY Exhibit 2008.0826
Juul v. NJOY
IPR2024-00161

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See RX-0074 (Photos of Red Dragon Kit #1) at RX-0074.31 (annotated in red); *see also* JX-0638C (Leinsing Invalidity Rpt., Appx. E) at ¶ 369.



See RX-0074 (Photos of Red Dragon Kit #1) at RX-0074.28 (annotated in red); *see also* JX-0638C (Leinsing Invalidity Rpt., Appx. E) at ¶ 369.

The evidence will show that in Fig. 1 of Wang '927, the inner air intake hole as shown in Fig. 1 of Wang '927, the opening of the air intake pipe, or the modified first aperture is each smaller than the opening on the right end of the casing and the opening on the tip of the cigarette holder. JX-0594 (Wang '927) at Fig. 1.

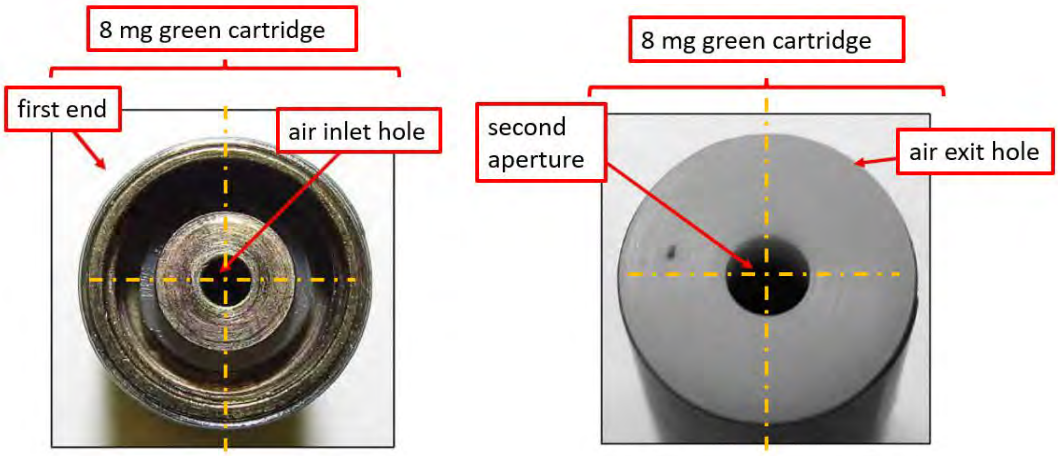
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Juul v. NJOY
IPR2024-00161

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7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '864 Patent, Claim 13

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 361-364; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, the evidence will show the first aperture proximate the first end of the Smoke Fifty-One Duo cartridge is smaller than the second aperture proximate the second end of the Smoke Fifty-One Duo cartridge.



See RX-0130C (Yardimici Declaration) at RX-0130C.77 (annotated in red and yellow) and RX-0130C.78 (annotated in red and yellow); RX-1558C (RJR Smoke Fifty-One Duo '881 Chart) at ITC1372_000008071 (annotated in red and yellow) and ITC1372_000008072 (annotated in red and yellow); *see also* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 361-364.

NJOY Exhibit 2008.0828
Juul v. NJOY
IPR2024-00161

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NJOY asserts that Mr. Leinsing does not provide any sizes or measurements of the first or second apertures. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. D, ¶238. However, as Mr. Leinsing will opine, the specific dimensions are not required by the claims, just the relative sizes.

8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 13

The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 363-364; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 548-612; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044). NJOY and its expert do not dispute that the NJOY NPRO discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 963-980; CX-2726C (Vallee Reb. Rpt.) at Appx. G, pgs. xiii-xiv (going directly from claim 9 to claim 16.

The evidence will show, and Complainant does not dispute, the NJOY NPRO discloses or renders obvious this claim limitation. *See, e.g.,* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 363-364. Mr. Leinsing will opine that there are only three possible relative sizes for the two apertures; *i.e.*, the first aperture would be smaller than, bigger than, or of the same size as the second aperture. *Id.* It therefore would have been obvious to try each of the three possible relative configurations. *Id.* Moreover, there are benefits to having the second aperture be larger than the first, including air and vapor flow. *Id.* For example, within the device, the liquid is vaporized, increasing its volume. *Id.* To ensure that there remains negative pressure within the device while a user sucks, the geometry of the device needs to account for the additional volume of the vapor, and would be improved by increasing the extent of the negative pressure to begin with. Both are helped by having a relatively large second aperture, where a user sucks and where the air and vapor are

NJOY Exhibit 2008.0829
Juul v. NJOY
IPR2024-00161

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extracted from the device – air leaves the second aperture more easily than it enters from the first aperture with a larger size. *Id.*

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 13

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 363-364; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.

10. Cigarette Electronique – '864 Patent, Claim 13

The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 442-445; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).. NJOY and its expert do not dispute that this limitation is met by the Cigarette Electronique. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 937-963; CX-2726C (Vallee Reb. Rpt.) at pg. xi (going directly from claim 9 to claim 15).

For example, as Mr. Leinsing will opine, two apertures can only have three relative sizes compared to each other: one bigger than the other, smaller than the other, or the same size. It therefore would have been obvious to try each of the three possible relative configurations. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶ 444. Moreover, there are benefits to having the second aperture be larger than the first, including air and vapor flow. For example, within the device, the liquid is vaporized, increasing its volume. To ensure that there remains negative

NJOY Exhibit 2008.0830
Juul v. NJOY
IPR2024-00161

pressure within the device while a user sucks (and therefore that the heater remains on as Xia '610 describes), the geometry of the device needs to account for the additional volume of the vapor, and would be improved by increasing the extent of the negative pressure to begin with. *Id.* Both are helped by having a relatively large second aperture, where a user sucks and where the air and vapor are extracted from the device – air leaves the second aperture more easily than it enters from the first aperture with a larger size. *Id.*

Additionally, in combining the Cigarette Electronique device with Wang 554 or Fang 044, this feature would have been obvious for the same reasons those references disclose or suggest this feature.

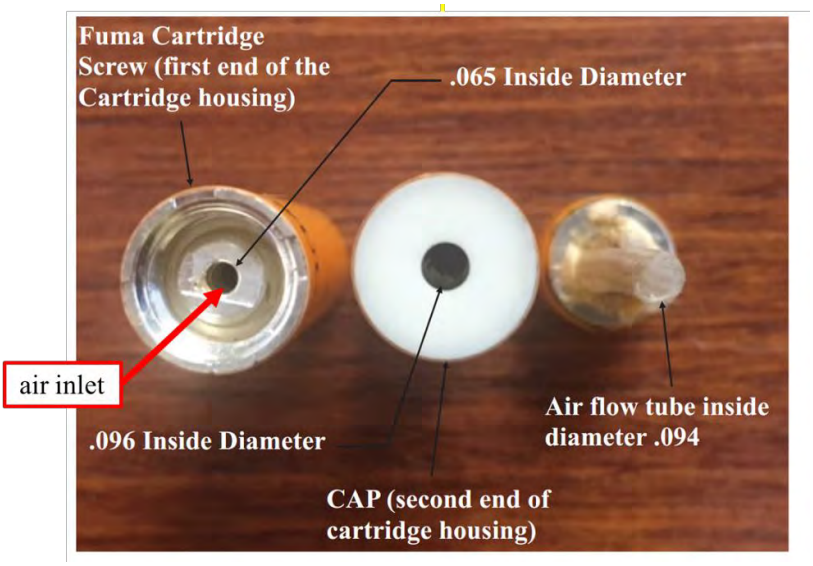
11. Fuma Prototype – '864 Patent, Claim 13

The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 338-340; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

For example, the air inlet on the first end has an inside diameter of 0.065" while the air exit hole on the second end has an inside diameter of 0.096". Because the diameter of the air inlet is smaller than the diameter of the air exit hole and both apertures are circular, the air inlet proximate the first end is smaller than the air exit hole proximate the second end.

NJOY Exhibit 2008.0831
Juul v. NJOY
IPR2024-00161

[redacted]



See '864 Priority Chart at 37 (citing CRTP Attachment D at Fig. 15) (annotated in red).

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses claim element 13. *See* Conley '864 Declaration at ¶5 (Dependent claim 45).

NJOY also admitted that the Fuma Prototype discloses claim element 13. *See* '864 Priority Chart at 37.

y. '864 Patent, claim 15: "[t]he cartridge of claim 9, further comprising an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[i] of the '864 Patent.

NJOY Exhibit 2008.0832
Juul v. NJOY
IPR2024-00161

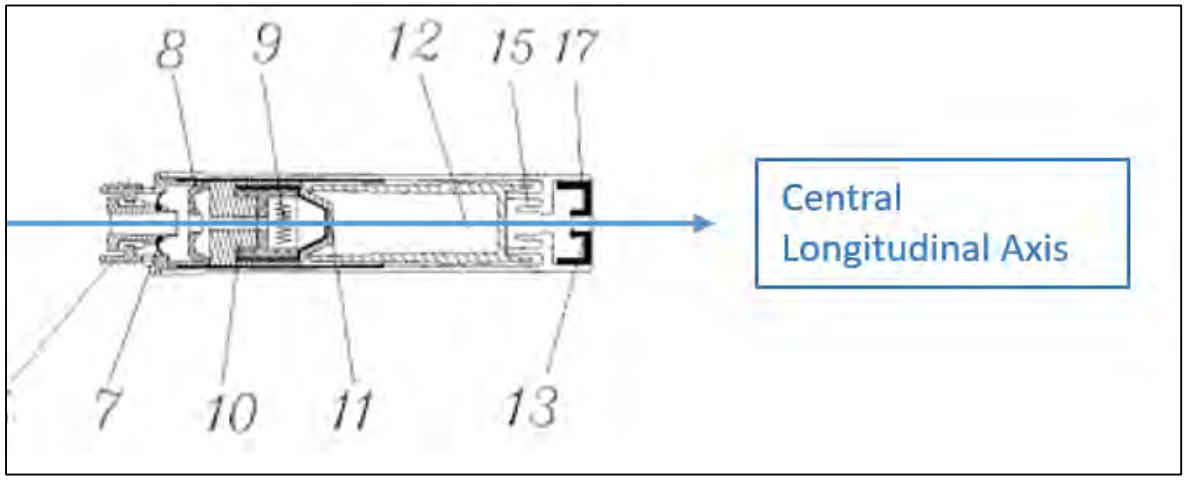
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z. '864 Patent, claim 16: "[t]he cartridge of claim 15, wherein a majority of the portion of the airflow passageway has a substantially uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing between the heating element and the second aperture"

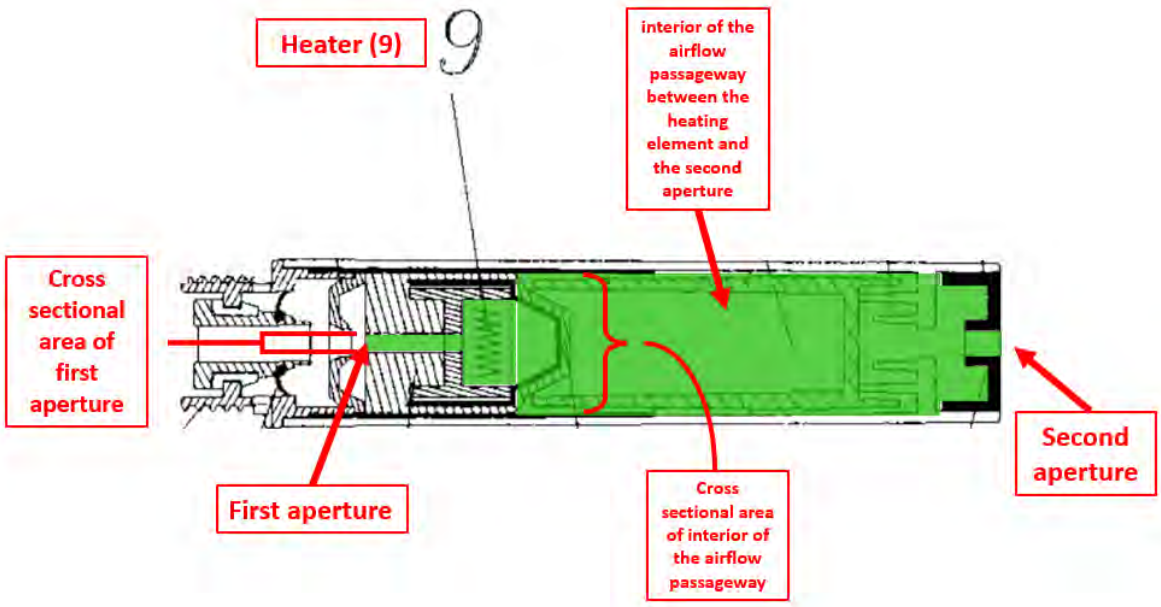
1. Xia '610 in view of Wang '554 and Fang '044 and Smoke Fifty-One Duo– '864 Patent, Claim 16

The evidence will show that Xia '610 discloses or renders obvious, alone or in combination with Wang '554 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 831-832, 1009-1010; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

Xia '610 discloses the cross-sectional area of the airflow passageway between the heating coil and the second aperture being uniform.



[redacted]



See JX-0596 (Xia '610) at Fig. 2*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 832.

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '864 Patent, Claim 16

The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 833-834, 1009-1010; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

For example, the evidence will show that a POSITA would understand that Wang '554 discloses or suggests the airflow passageway having a uniform cross-sectional area measured perpendicular to a central longitudinal axis of the housing between the heating coil and the second aperture as well. For example, Mr. Leinsing will opine that a POSITA would understand that Wang '554's illustrations are diagrammatic in that the components are shown in an exploded view to show their features, but that they would be assembled together in an actual device. *See* JX-0632C

NJOY Exhibit 2008.0834
Juul v. NJOY
IPR2024-00161

(Leinsing Opening Rpt.) at ¶ 280. For example, Wang '554 refers to the figures as "schematic" and "amplified," demonstrating that the images are not literal blueprints: "Fig. 1 is a schematic structural diagram of embodiment 1" and "Fig. 3 is an amplified schematic structural diagram of a cigarette holder part in Fig. 1." RX-0005 (Wang '554) at RX-0005.5; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 280. This makes sense to have done, for example, because by illustrating the organic fiber 105 not fully abutted to the first and second end caps, the figures better illustrate the structure of the top end cap (showing that it extends into the housing), the organic fiber 105 (showing that it is would around a central cylindrical hole), and the bottom end cap (showing the aperture 106 and the electrodes). Similarly, by showing the components in a diagrammatic exploded view, the figures better illustrate the features of the rod portion, including the battery 110, as well as the sensor 112, circuit 113, and light 114. Wang '554 describes that the light 114 for example shines through the lamp cover 116, demonstrating that the sensor/circuit/light component is abutted against the end of the housing when assembled (rather than floating within the rod as illustrated): "The indicating lamp cover 116 of the cigarette rod is embedded at one end of the air inlet 115 of the shell 111 to play roles in protecting an internal structure of the shell 111, shining the light-emitting diode 114, providing an airflow channel and the like." RX-0005 (Wang '554) at RX-0005.6; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 280. Additionally, it is inefficient to have so much extra space within the device, particularly where space is at a premium given the desire to make the form factor cigarette-like (and therefore cigarette-sized). Additionally, suspending these pieces with gaps around them as illustrated requires more complicated assembly because it requires there be structural support for suspending them within the housing so they do not rattle or move around within the device. It would also not make sense for the battery to not contact a conductor on the control circuit board 113 or the output end 109 such that it can make

NJOY Exhibit 2008.0835
Juul v. NJOY
IPR2024-00161

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electrical connection with the threaded coupling to supply power to the heating coil in the cartomizer. Therefore, a POSITA would understand that Wang '554 also discloses the solution holding medium extending all the way between the first end and the second end, because as assembled, the top component would abut directly to the end of the fiber 105.

For example, the evidence will show that to the extent it does not disclose this more compressed assembly, Wang '554 renders it obvious for the same reasons. With the fiber abutting directly to the end cap, the internal cylindrical pathway through the fiber abuts directly to the aperture 101, making the airflow passageway have the uniform cross-sectional area of the cylindrical pathway the entire length between the heater and the second aperture.

3. Fang '044 in view of Xia '610 and Wang '554 and Smoke Fifty-One Duo – '864 Patent, Claim 16

The evidence will show that Fang '044 discloses or renders obvious, alone or in combination with Xia '610 and Wang '554 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 835-836, 1009-1010; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici).

For example, the evidence will show that Fang '044 discloses that the smoke channel 10 is defined by pipe 8, which has a uniform cross sectional area measured perpendicular to a central longitudinal axis of the housing between the heating element and the second aperture. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 836.

4. Wang '927 in view of Wang '554 and NPRO Style – '864 Patent, Claim 16

The evidence will show that Wang '927 discloses or renders obvious, alone or in combination with Wang '554 and NPRO Style this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 379-381; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang

NJOY Exhibit 2008.0836
Juul v. NJOY
IPR2024-00161

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’927); RX-0005 (Wang ’554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style). NJOY and its expert do not dispute that this limitation is met by Wang ’927. *See* CX-2110 (Complainant’s First Sup. Validity Contentions (03/12/2024)) at 784-793; CX-2726C (Vallee Reb. Rpt.) at Appx. B, pg. xi (going directly from claim 13 to claim 21).

The evidence will show that Wang ’927 discloses a length of the airflow passageway extending intermediate of the heating element and the second aperture has a substantially uniform cross-sectional area along a continuous majority of the length. *Id.* For example, the airflow passageway has a length extending between the electric heating wire and the second aperture. *Id*.; Sections IV.G.1.xiii.j, k *supra*.

Wang ’927 discloses the length of the airflow passageway having a substantially uniform cross-sectional area along a continuous majority of the length, the substantially uniform cross-sectional area being measured perpendicular to the central longitudinal axis of the housing. *Id.* For example, the “circular-hole ventilation channel in the middle of the fiber filler” has a substantially uniform cross-sectional area perpendicular to a central longitudinal axis of the housing between the heating element and the second aperture. JX-0594 (Wang ’927) at Fig. 1, JX-0594.3-4; *see also* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶ 294. The length of the ventilation channel is a continuous majority of the length extending intermediate of the heating element and the second aperture. *Id.*

5. Han ’364 in view of Fang ’044 and NPRO Style – ’864 Patent, Claim 16

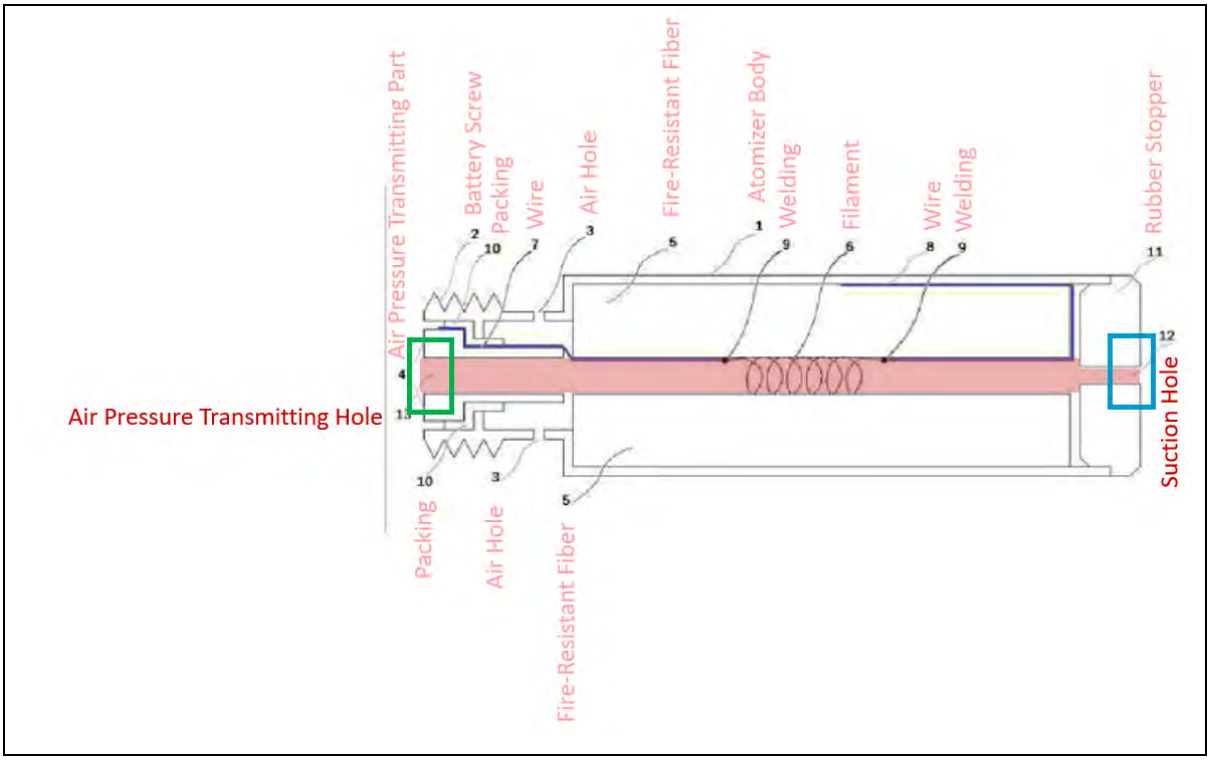
The evidence will show that Han ’364 in view of Fang ’044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 296-298, 387-389; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han ’364 certified English

NJOY Exhibit 2008.0837
Juul v. NJOY
IPR2024-00161

[redacted]

Translation) ; JX-0595 (Fang '044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit). NJOY and its expert do not dispute that Han '364 discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 893-897. CX-2726C (Vallee Reb. Rpt.) at Appx. C, pg. 18 (going directly from claim 13 to claim 20).

For example, Han '364 discloses an airflow passageway including a length between the filament 6 and the suction hole 12; at least a portion of that length has a diameter that is at least the same size as the diameter of the first aperture. *See* JX-0631 (Han '364 certified English Translation) at FIG. 1; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 371.

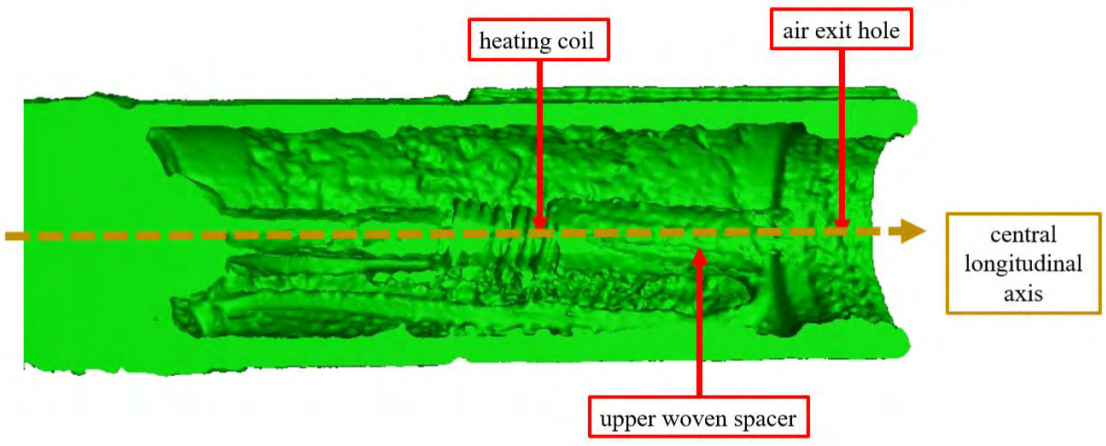


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6. Red Dragon in view of Fang '044 and Wang '927 – '864 Patent, Claim 16

The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 296-297, 376-377; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, the evidence will show the airflow passageway has a length extending intermediate of the heating element and the second aperture (i.e., at least the upper woven spacer). This length of the airflow passageway has a substantially uniform cross-sectional area along a continuous majority of the length if measured perpendicular to the central longitudinal axis of the housing.



NJOY Exhibit 2008.0839
Juul v. NJOY
IPR2024-00161

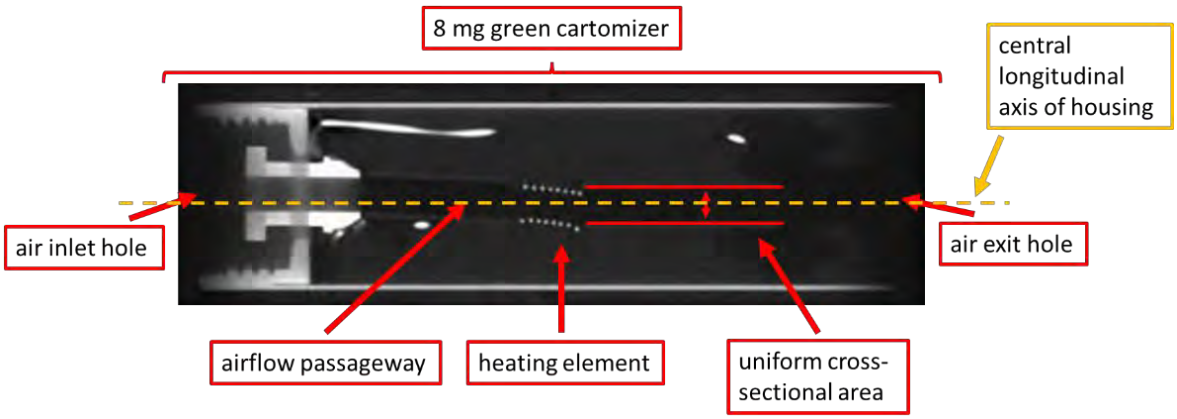
[redacted]

See RX-0077 (CT Scans of Red Dragon Kit #2) at RX-0077.38 (annotated); RX-0077 (CT Scans of Red Dragon Kit #2) at RX-0077.36 (annotated); RX-0077 at RX-0077.22 (annotated in red); *see also* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 297.

7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '864 Patent, Claim 16

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 371-372; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 288-289, 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, the evidence will show the airflow passageway has a length extending intermediate of the heating element and the second aperture (i.e., at least the upper woven spacer). This length of the airflow passageway has a substantially uniform cross-sectional area along a continuous majority of the length if measured perpendicular to the central longitudinal axis of the housing.



See RX-0130C (Declaration of Yardimici) at RX-0130C.38; *see also* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 288-289.

NJOY Exhibit 2008.0840
Juul v. NJOY
IPR2024-00161

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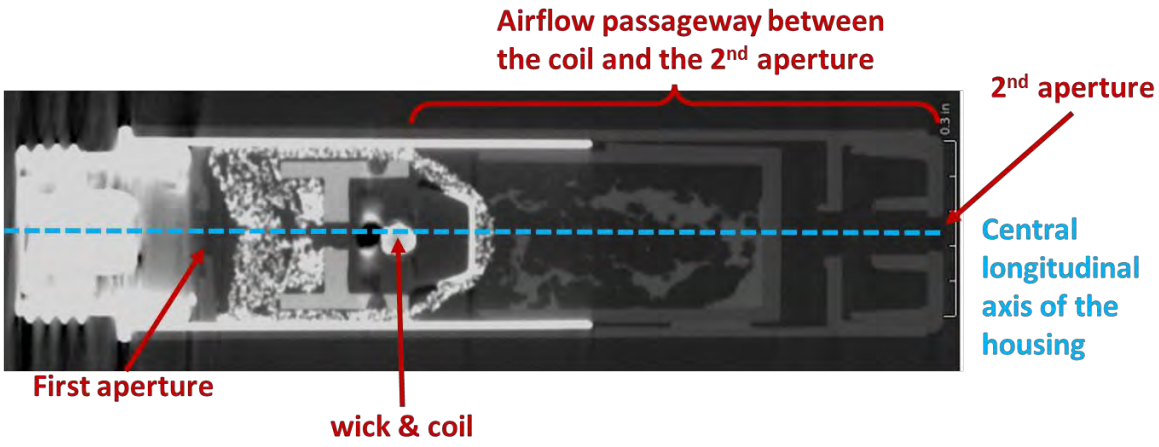
8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 16

The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 287-288, 372-373; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 548-612; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044).

For example, the CT scan below shows that the airflow passageway has a length between the heating element and the second aperture. *See, e.g.,* JX-0404 (CT Scans of NJOY NPRO); JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶ 288. Furthermore, the CT scan shows the diameter of the airflow passageway between the heating element and the second aperture, which is measured perpendicular to a central longitudinal axis of the housing. *Id.* Mr. Leinsing will opine that a POSITA would understand that the cross-sectional area A of the airflow passageway is calculated from the diameter D of the airflow passageway using the following formula: $A = \pi \left(\frac{D}{2}\right)^2$, where π is a constant. Given that the diameter D of the cross-sectional area of the housing is constant along a continuous majority of the length of the airflow passageway intermediate the heating element and the second aperture, the cross-sectional area of the airflow passageway is substantially uniform along a continuous majority of the length of the airflow passageway intermediate the heating element and the second aperture. *Id.*

NJOY Exhibit 2008.0841
Juul v. NJOY
IPR2024-00161

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See JX-0404 (CT Scans of NJOY NPRO) at JX-0404.11 (annotated in red and blue); *see also* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 287-288, 372-373.



See RX-0082 (Photos of NJOY NPRO) at RX-0082.83 (annotated in red).

Complainant disagrees that the airflow passageway in the NJOY NPRO has a uniform cross-sectional area along the continuous majority of the length between the heating element and the second aperture. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. G, ¶ 257. However, Mr. Leinsing will opine that, for similar reasons as claim 1[j] *supra*, because the airflow passageway is defined by the circular wall of the housing, the airflow passageway extends centrally and axially with respect to the housing from the first aperture of the housing to the second aperture of the housing

NJOY Exhibit 2008.0842
Juul v. NJOY
IPR2024-00161

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at least as NJOY interprets the claims with respect to infringement (i.e., that the airflow can go around obstacles and still be "central and axial"). *See* Section IV.G.1.xiii.k (claim 1[j]) *supra*.

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 16

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 287-288, 372-373; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.

10. Cigarette Electronique – '864 Patent, Claim 16

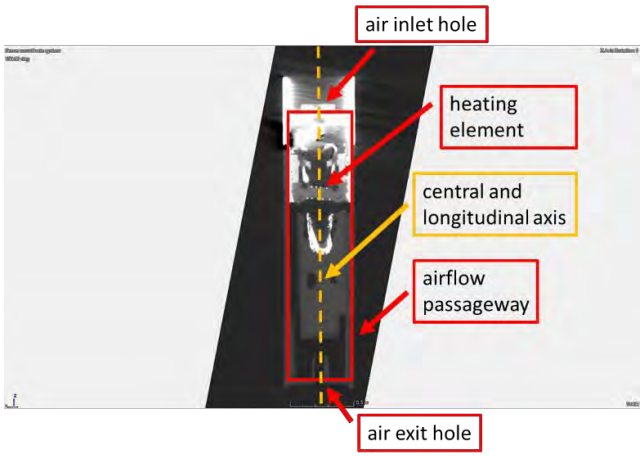
The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 356-359, 453-454; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).

For example, the CT scan below shows that the airflow passageway has a length between the heating element and the second aperture. Furthermore, the CT scan shows the diameter of the airflow passageway between the heating element and the second aperture, which is measured perpendicular to a central longitudinal axis of the housing. Mr. Leinsing will opine that a POSITA would understand that the cross-sectional area A of the airflow passageway is calculated from the diameter D of the airflow passageway using the following formula: $A = \pi\left(\frac{D}{2}\right)^2$, where π is a constant. Given that the diameter D of the cross-sectional area of the housing is constant along a continuous majority of the length of the airflow passageway intermediate the heating element and

NJOY Exhibit 2008.0843
Juul v. NJOY
IPR2024-00161

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the second aperture, the cross-sectional area of the airflow passageway is substantially uniform along a continuous majority of the length of the airflow passageway intermediate the heating element and the second aperture.



See JX-0401 (Photos of Cigarette Electronique) at JX-0401.5 (annotated in red and yellow); *see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 356-359, 453-454.

Complainant disagrees that the airflow passageway in the Cigarette Electronique has a uniform cross-sectional area along the continuous majority of the length between the heating element and the second aperture. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. F, ¶¶197-198. However, Mr. Leinsing will opine that, for similar reasons as claim 1[j] *supra*, the airflow passageway merely contains obstacles like those that NJOY asserts do not render the airflow passageway not having a uniform cross-sectional area along the continuous majority of length. *See* Section IV.G.1.xiii.k (claim 1[j]) *supra*.

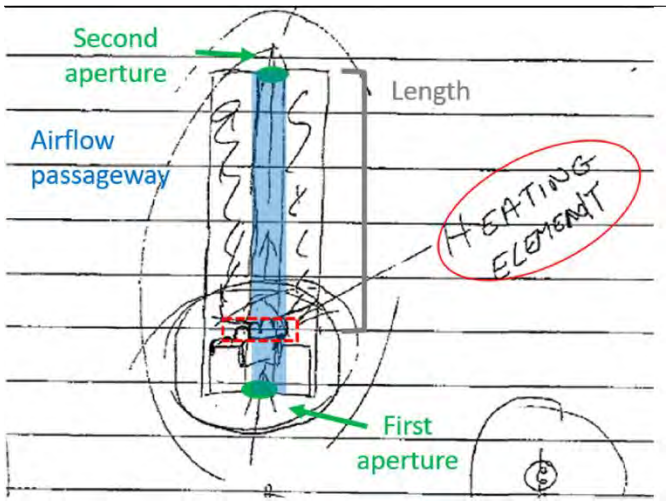
11. Fuma Prototype – '864 Patent, Claim 16

The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 348, 266-268; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

NJOY Exhibit 2008.0844
Juul v. NJOY
IPR2024-00161

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As shown in the figures below, the length of the airflow passageway between the heating coil and the air exit hole has a substantially uniform cross-sectional area along a continuous majority of the length, measured perpendicular to the central longitudinal axis of the housing. For example, the length of the woven spacer between the end of the slit and the air exit hole has a uniform cross-sectional area. The length of the woven spacer between the heating coil and the end of the slit has a substantial uniform cross-sectional area under NJOY's apparent interpretation.

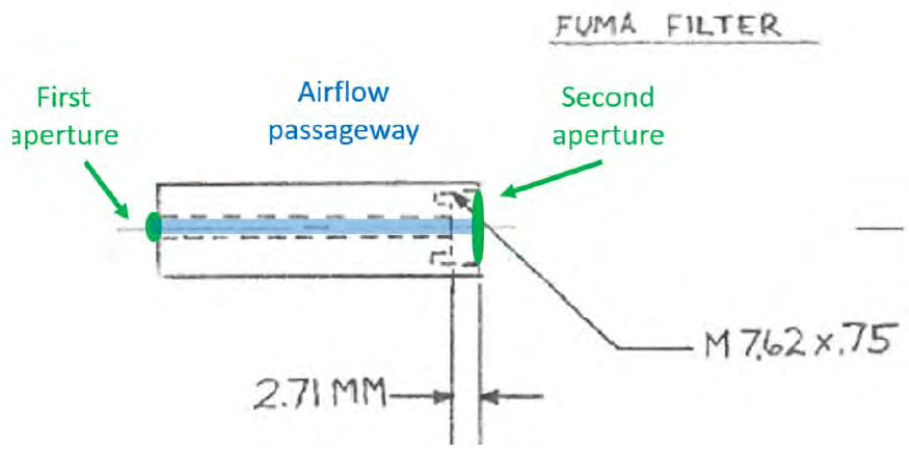


See '864 Priority Chart at 18 (citing CRTP Attachment C).

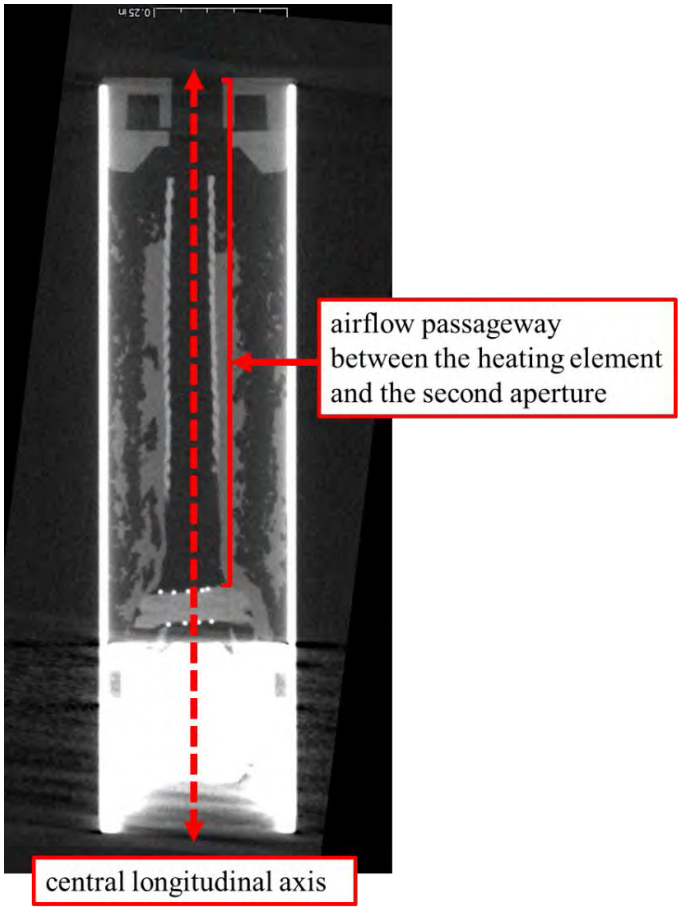


See '864 Priority Chart at 18 (citing CRTP Attachment D at Fig. 16).

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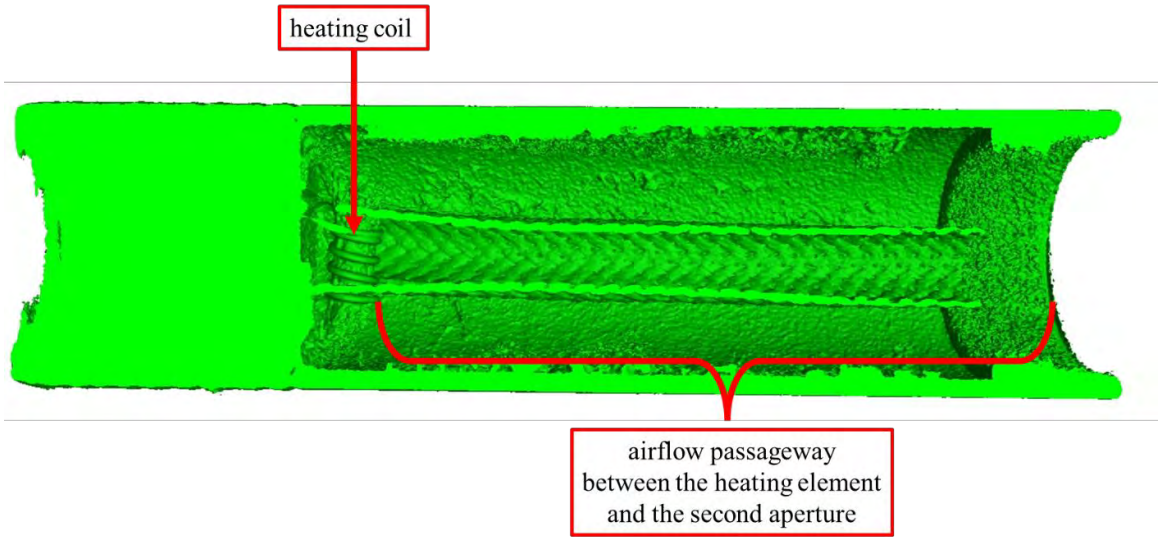


See '864 Priority Chart at 18 (citing CRTP Attachment E at FUMA-INSPECTION-0037).



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.17 (annotated in red).

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See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.1 (annotated in red).

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses this claim. *See* Conley '864 Declaration at ¶5 (Dependent claim 53); *See* Conley '864 Declaration at ¶5 (Dependent claim 48).

NJOY also admitted that the Fuma Prototype discloses claim element 4(a). *See* '864 Priority Chart at 18-19.

aa. '864 Patent, claim 20: "[t]he cartridge of claim 9, wherein the heating element includes a material that when powered by the power source is adapted to vaporize the solution brought into contact with the heating element"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[e] of the '864 Patent.

bb. '864 Patent, claim 25[pre]: "[a] cartridge configured to couple to a power source of an electronic vaporizer, the cartridge comprising"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[pre] of the '864 Patent.

[redacted]

cc. ’864 Patent, claim 25[a]: “a housing having an interior and a solution holding medium adapted to hold a solution”

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[a] of the ’864 Patent.

dd. ’864 Patent, claim 25[b]: “the housing having a first end and a second end that is opposite the first end and a central longitudinal axis extending from the first end to the second end, the housing having a first aperture proximate the first end and a second aperture proximate the second end,”

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[b] of the ’864 Patent.

ee. ’864 Patent, claim 25[c]: “the first end of the housing being adapted to electrically couple to the power source”

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[c] of the ’864 Patent.

ff. ’864 Patent, claim 25[d]: “the first aperture and the second aperture being in communication with one another to permit an airflow through the housing”

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[d] of the ’864 Patent.

gg. ’864 Patent, claim 25[e]: “a heating element located in the interior of the housing, the heating element including a coil extending transversely to the central longitudinal axis of the housing and transversely to a direction of the airflow”

1. Xia ’610 in view of Wang ’554 and Fang ’044 and Smoke Fifty-One Duo– ’864 Patent, Claim 25[e]

The evidence will show that Xia ’610 discloses or renders obvious, alone or in combination with Wang ’554 and Fang ’044 and Smoke Fifty-One Duo this limitation for the largely the same

NJOY Exhibit 2008.0848
Juul v. NJOY
IPR2024-00161

reasons that it discloses or renders obvious claim 12 of the ’864 Patent. In addition to the requirements of claim 12 of the ’864 patent, this limitation requires “the heating element including a coil” “and transversely to a direction of the airflow.” The evidence will show that this requirement is also disclosed or rendered obvious.

For example, Xia ’610 describes the structure of the heating coil, demonstrating that it is a resistive heating element and at least rendering obvious a helical heating element by disclosing a “wire” and “ring”: “the heating wire 901 may be made of a platinum wire, a nickel-chromium alloy or an iron-chromium-aluminum alloy wire containing rare earth elements, and may also be made into a sheet or ring, and the heat insulation seat 902 may be made of ceramics or the like.” JX-0596 (Xia ‘610) at JX-0596.12-13*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 1012. Xia ’610 also discloses a helical heating element by its illustration of heater 9 as a ”zig-zag” in cross-sectional diagrams like its figures, which a POSITA would understand represents a coil. *See* JX-0596 (Xia ‘610) at FIGs. 2, 4*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 1012.

To the extent not disclosed, Mr. Leinsing will opine that a POSITA would have also been motivated to modify the heating coil in Xia ’610 to consist of a coil. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 1013. A coil was a well-known shape for a heating filament, which had been in production for over a hundred years (for example in a light bulb or toaster or hair dryer), and provides increased surface to heat the solution, as opposed to a straight wire. Additionally, a coil is an open shape, allowing air to pass through it, which does not obstruct airflow.

Additionally, the heating element extends transversely to the central longitudinal axis as explained above with respect to claim 12 of the ’’864 Patent, and the airflow goes in the axial

NJOY Exhibit 2008.0849
Juul v. NJOY
IPR2024-00161

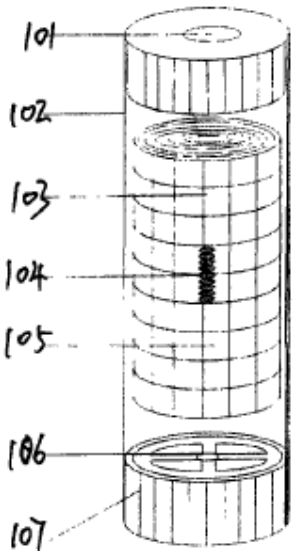
[redacted]

direction (including from the first aperture to the second aperture as explained above with respect to claim 1[d] of the ’864 Patent, and through a central and axial airflow passageway as explained with respect to claim 1[j] of the ’864 Patent), so being transverse to the central longitudinal axis means the heating element is also transverse to the direction of the airflow.

2. Wang ’554 in view of Xia ’610 and Fang ’044 and Smoke Fifty-One Duo – ’864 Patent, Claim 25[e]

The evidence will show that Wang ’554 discloses or renders obvious, alone or in combination with Xia ’610 and Fang ’044 this limitation for the largely the same reasons that it discloses or renders obvious claim 1[e] of the ’864 Patent. In addition to the requirements of claim 1[e] of the ’864 patent, this limitation requires “the heating element including a coil” “and transversely to a direction of the airflow.” The evidence will show that this requirement is also disclosed or rendered obvious.

For example, the evidence will show that as depicted in Figure 3, Wang ’554 discloses heating coil 104:



See RX-0005 (Wang ‘554) at Fig. 3.

NJOY Exhibit 2008.0850
Juul v. NJOY
IPR2024-00161

A POSITA would also know that a coil is a very common shape for a heating wire, especially within cylindrical shape, such as the electronic cigarette housing of Wang ’554.

Additionally, it would have been obvious to have the heating element extending transversely to the central longitudinal axis as explained above with respect to claim 12 of the ’’864 Patent, and the airflow goes in the axial direction (including from the first aperture to the second aperture as explained above with respect to claim 1[d] of the ’864 Patent, and through a central and axial airflow passageway as explained with respect to claim 1[j] of the ’864 Patent), so being transverse to the central longitudinal axis means the heating element is also transverse to the direction of the airflow.

3. Fang ’044 in view of Xia ’610 and Wang ’554 and Smoke Fifty-One Duo – ’864 Patent, Claim 25[e]

The evidence will show that Fang ’044 discloses or renders obvious, alone or in combination with Xia ’610 and Wang ’554 this limitation for the largely the same reasons that it discloses or renders obvious claim 1[e] of the ’864 Patent. In addition to the requirements of claim 1[e] of the ’864 patent, this limitation requires “the heating element including a coil” “and transversely to a direction of the airflow.” The evidence will show that this requirement is also disclosed or rendered obvious.

For example, the evidence will show that Fang 044 discloses a heating wire that is “wrapped around” temporary oil storage device 15, which demonstrates that it is a coil, which has a maximum diameter by definition. Fang 044 also illustrates the wire as being in a coil shape in the figures.

Additionally, the heating element extends transversely to the central longitudinal axis as explained above with respect to claim 12 of the ’’864 Patent, and the airflow goes in the axial direction (including from the first aperture to the second aperture as explained above with respect

NJOY Exhibit 2008.0851
Juul v. NJOY
IPR2024-00161

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to claim 1[d] of the ’864 Patent, and through a central and axial airflow passageway as explained with respect to claim 1[j] of the ’864 Patent), so being transverse to the central longitudinal axis means the heating element is also transverse to the direction of the airflow.

4. Wang ’927 in view of Wang ’554 and NPRO Style – ’864 Patent, Claim 25[e]

The evidence will show that Wang ’927 in view of Wang ’554 and NPRO Style discloses or renders obvious this limitation for the largely the same reasons that it discloses or renders obvious claim 1[e] of the ’864 Patent. In addition to the requirements of claim 1[e] of the ’864 patent, this limitation requires “the heating element including a coil” “and transversely to a direction of the airflow.” The evidence will show that this requirement is also disclosed or rendered obvious.

The evidence will show that Wang ’927 discloses that the electric heating wire 9 has a coil shape. *See, e.g.,* JX-0594 (Wang ’927) at Fig. 1.

Additionally, the heating element extends transversely to the central longitudinal axis as explained above with respect to claim 12 of the ’’864 Patent, and the airflow goes in the axial direction (including from the first aperture to the second aperture as explained above with respect to claim 1[d] of the ’864 Patent, and through a central and axial airflow passageway as explained with respect to claim 1[j] of the ’864 Patent), so being transverse to the central longitudinal axis means the heating element is also transverse to the direction of the airflow.

5. Han ’364 in view of Fang ’044 and NPRO Style – ’864 Patent, Claim 25[e]

The evidence will show that Han ’364 in view of Fang ’044 and NPRO Style discloses or renders obvious this limitation for the largely the same reasons that it discloses or renders obvious claim 1[e] of the ’864 Patent. In addition to the requirements of claim 1[e] of the ’864 patent, this

NJOY Exhibit 2008.0852
Juul v. NJOY
IPR2024-00161

limitation requires "the heating element including a coil" "and transversely to a direction of the airflow." The evidence will show that this requirement is also disclosed or rendered obvious.

Dr. Vallee confirmed that a POSITA would understand that a spiral symbol like depicted in Han '364 could indicate a heating coil or a spring. *See, e.g.,* RX-1015C (Vallee 4/12/24 Tr.) at 298:23-300:10. Therefore, a spiral symbol discloses both a heating coil and a spring, and therefore discloses a coil as claimed.

Additionally, the heating element extends transversely to the central longitudinal axis as explained above with respect to claim 12 of the ''864 Patent, and the airflow goes in the axial direction (including from the first aperture to the second aperture as explained above with respect to claim 1[d] of the '864 Patent, and through a central and axial airflow passageway as explained with respect to claim 1[j] of the '864 Patent), so being transverse to the central longitudinal axis means the heating element is also transverse to the direction of the airflow.

6. Red Dragon in view of Fang '044 and Wang '927 – '864 Patent, Claim 25[e]

The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation for the largely the same reasons that it discloses or renders obvious claim 1[e] of the '864 Patent. In addition to the requirements of claim 1[e] of the '864 patent, this limitation requires "the heating element including a coil" "and transversely to a direction of the airflow." The evidence will show that this requirement is also disclosed or rendered obvious.

For example, the heating element of the Red Dragon Duo is a resistive helical coil. *See, e.g.,* RX-0077 at RX-0077.22 ; *see also* JX-0637C (Leinsing Opening Rpt., Appx. E) at ¶¶ 378-380; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project]

NJOY Exhibit 2008.0853
Juul v. NJOY
IPR2024-00161

Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang ’044); JX-0594 (Wang ’927). Further, as explained above with respect to ’864 Patent 1[e], a POSITA would have been motivated to modify the Red Dragon to have the heating element be horizontal. In doing so, the heating element would also be perpendicular to the airflow, because the airflow goes generally longitudinally.

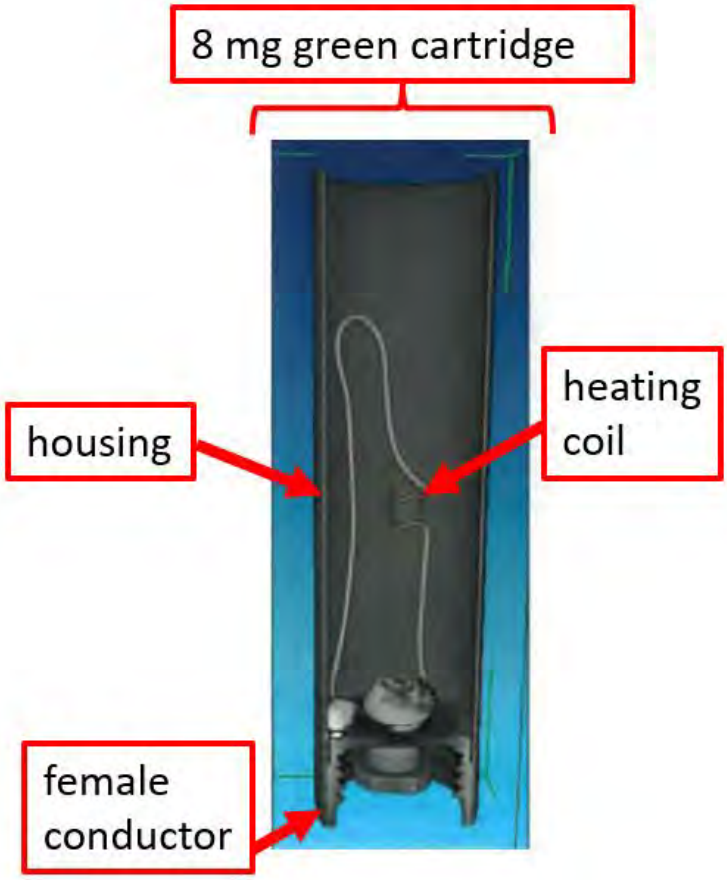
7. Smoke Fifty-One Duo in view of Fang ’044 and Wang ’927 – ’864 Patent, Claim 25[e]

The evidence will show that Smoke Fifty-One Duo in view of Fang ’044 and Wang ’927 discloses or renders obvious this limitation for the largely the same reasons that it discloses or renders obvious claim 1[e] of the ’864 Patent. In addition to the requirements of claim 1[e] of the ’864 patent, this limitation requires “the heating element including a coil” “and transversely to a direction of the airflow.” The evidence will show that this requirement is also disclosed or rendered obvious.

The Smoke Fifty-One Duo includes a heating coil, which is a helical-shaped resistive wire, in the housing. JX-0632C (Leinsing Opening Rpt.) at ¶ 453-454. When a user draws from the second aperture, an electric current flows from the battery to the cartridge, via the threaded conductors, to power the heating coil so that it can output heat to vaporize e-liquid in the nicotine pad. *See, e.g.,* 2024-02-29 Conley Depo. Tr. at 146:13-19. The heating coil also has a maximum diameter that is smaller than the diameter of the Smoke Fifty-One Duo Passageway.

NJOY Exhibit 2008.0854
Juul v. NJOY
IPR2024-00161

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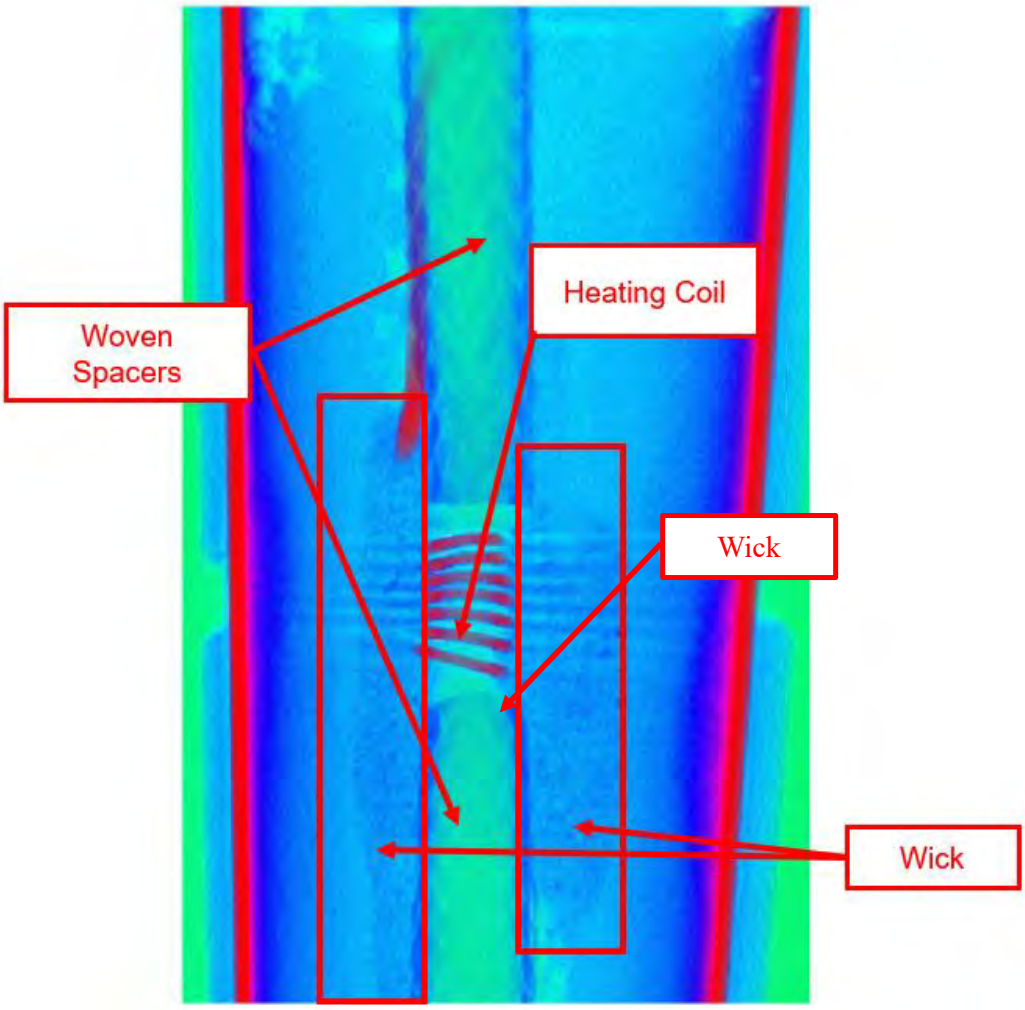
5.

See RX-0130C (Yardimici Declaration) at RX-0130C.10 (annotated in red, cropped); see also RX-0129C (Wang Declaration) at RX-0129C.40 (annotated in red, cropped).

The heating coil resides within the airflow passageway (i.e., between the two woven spacers, and also surrounded by the wicking material that spans around the heating coil and between the lower woven spacer and the upper woven spacer:

NJOY Exhibit 2008.0855
Juul v. NJOY
IPR2024-00161

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6.

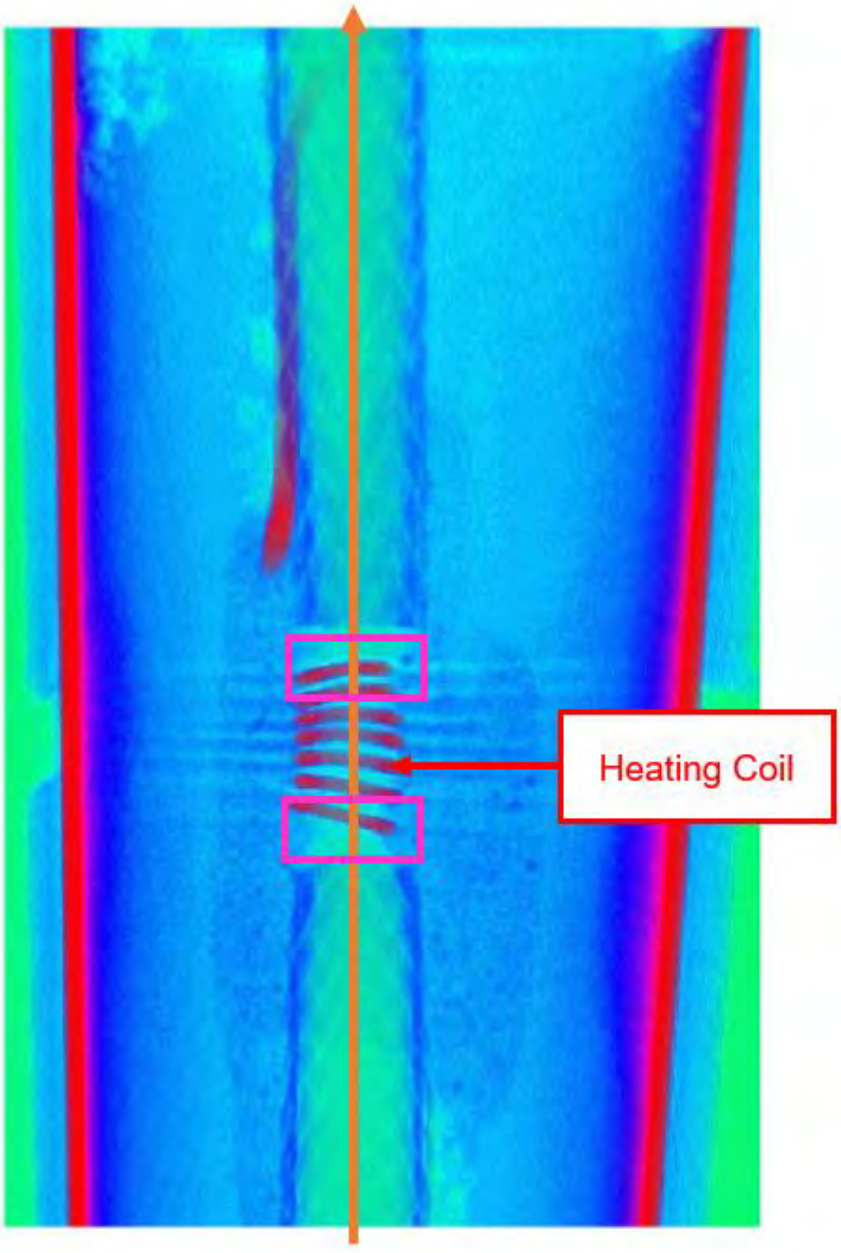
RX-0130C (Yardimici Declaration) at RX-0130C.68 (annotated). *See also* 2024-02-29 Conley Depo. Tr. at 91:4-12, 92:9-10 (testifying that the batting material surrounded the heating element); 151:9-12 (testifying that the heating element had a resistive or inductive wire); JX-0632C (Leinsing Opening Rpt.) at ¶ 454.

The heating coil in the Smoke Fifty-One Duo extends across the entire diameter of the airflow passageway, thereby extending crosswise across the airflow passageway. JX-0632C (Leinsing Opening Rpt.) at ¶ 455. Airflow through the airflow passageway (annotated below via

NJOY Exhibit 2008.0856
Juul v. NJOY
IPR2024-00161

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an orange arrow) would therefore move in a direction perpendicular to the end portions (annotated in pink) of the heating coil.



7.

Id. (annotated).

NJOY Exhibit 2008.0857
Juul v. NJOY
IPR2024-00161

[redacted]

8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 25[e]

The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation for the largely the same reasons that it discloses or renders obvious claim 1[e] of the '864 Patent. In addition to the requirements of claim 1[e] of the '864 patent, this limitation requires "the heating element including a coil" "and transversely to a direction of the airflow." The evidence will show that this requirement is also disclosed or rendered obvious. RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044); Section IV.G.1.xiii.g.8 *supra*..

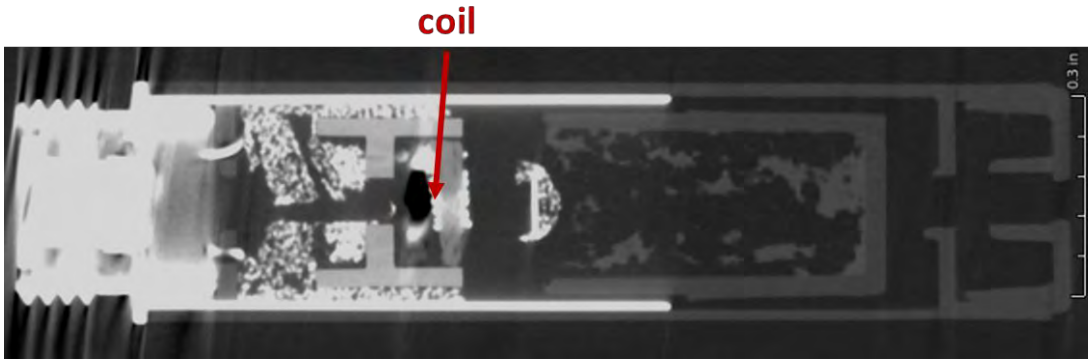
For example, the photo below shows the coil in the atomizer of the cartridge section. Because the atomizer is part of the cartridge section, the cartridge section includes a heating element, wherein the heating element includes a coil.



See RX-0082 (Photos of NJOY NPRO) at RX-0082.67 (annotated).

NJOY Exhibit 2008.0858
Juul v. NJOY
IPR2024-00161

[redacted]



See JX-0404 (NPRO Photos) at JX-0404.16 (annotated in red).

Because the atomizer is part of the cartridge section, the evidence will show the cartridge section includes a heating element, wherein the heating element includes a coil. *See, e.g.,* RX-0082 (Photos of NJOY NPRO) at RX-0082.67; JX-0404 (NPRO Photos) at JX-0404.16 (annotated); *see also* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 374-376.

Additionally, the heating element extends transversely to the central longitudinal axis as explained above with respect to claim 12 of the ''864 Patent, and the airflow goes in the axial direction (including from the first aperture to the second aperture as explained above with respect to claim 1[d] of the '864 Patent, and through a central and axial airflow passageway as explained with respect to claim 1[j] of the '864 Patent), so being transverse to the central longitudinal axis means the heating element is also transverse to the direction of the airflow.

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 25[e]

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 374-376; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG);

NJOY Exhibit 2008.0859
Juul v. NJOY
IPR2024-00161

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RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.

10. Cigarette Electronique – ’864 Patent, Claim 25[e]

The evidence will show that Cigarette Electronique discloses or renders obvious this limitation for the largely the same reasons that it discloses or renders obvious claim 1[e] of the ’864 Patent. In addition to the requirements of claim 1[e] of the ’864 patent, this limitation requires “the heating element including a coil” “and transversely to a direction of the airflow.” The evidence will show that this requirement is also disclosed or rendered obvious.

Additionally, the heating element extends transversely to the central longitudinal axis as explained above with respect to claim 12 of the ’’864 Patent, and the airflow goes in the axial direction (including from the first aperture to the second aperture as explained above with respect to claim 1[d] of the ’864 Patent, and through a central and axial airflow passageway as explained with respect to claim 1[j] of the ’864 Patent), so being transverse to the central longitudinal axis means the heating element is also transverse to the direction of the airflow.

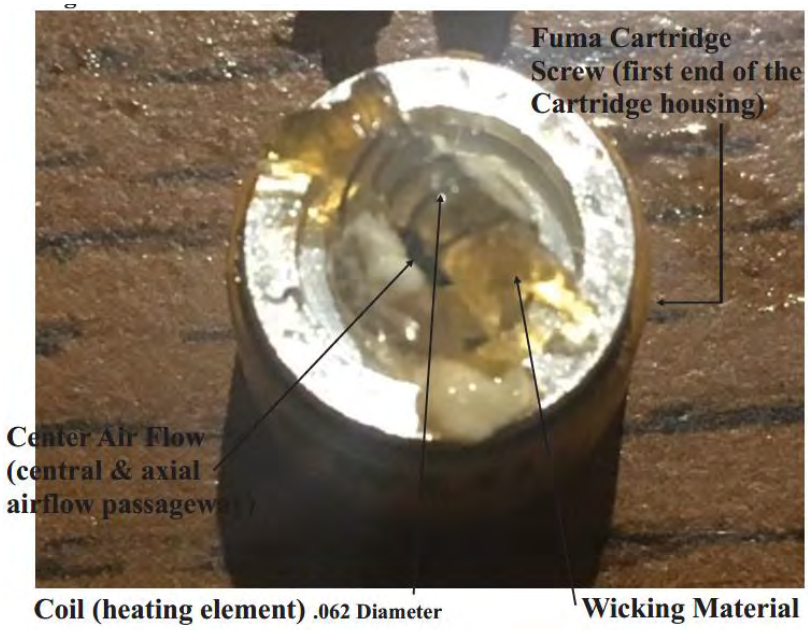
11. Fuma Prototype – ’864 Patent, Claim 25[e]

The Evidence will show that the Fuma Prototype discloses this limitation for the largely the same reasons that it discloses or renders obvious claim 1[e] of the ’864 Patent. In addition to the requirements of claim 1[e] of the ’864 patent, this limitation requires “the heating element including a coil” “and transversely to a direction of the airflow.” The evidence will show that this requirement is also disclosed or rendered obvious. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 350-352; 404.

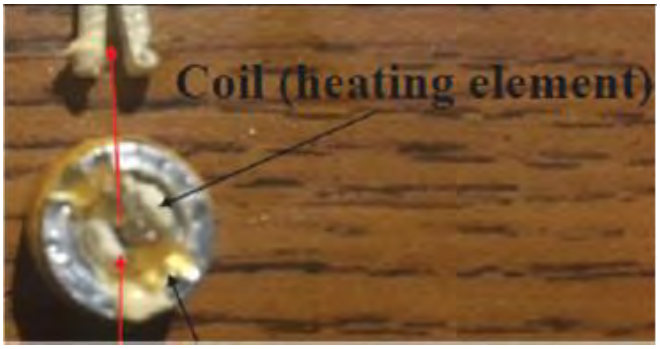
The Fuma Cartridge includes a heating coil.

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Juul v. NJOY
IPR2024-00161

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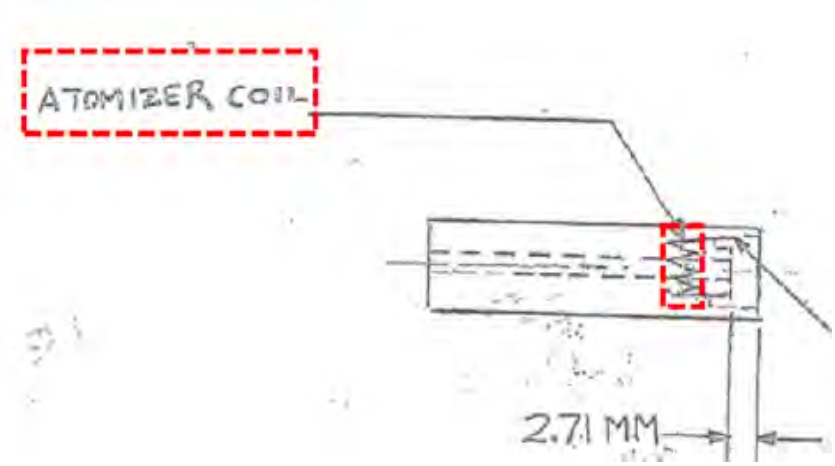
See CRTP Exhibit A at Fig. 14.



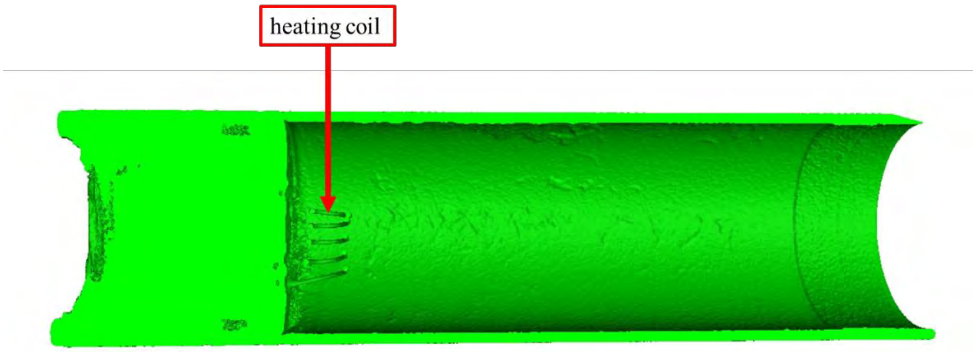
See '864 Priority Chart at 40 (citing CRTP Attachment D at Fig. 13).

NJOY Exhibit 2008.0861
Juul v. NJOY
IPR2024-00161

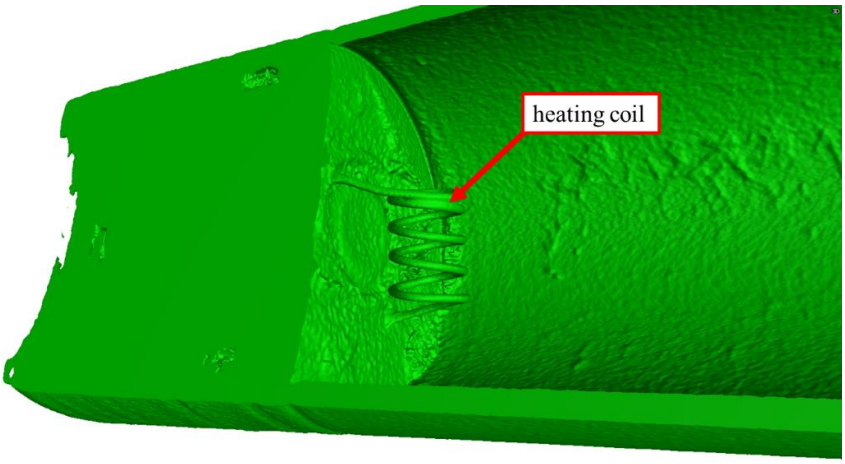
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See '864 Priority Chart at 40 (citing CRTP Attachment E at FUMA-INSPECTION-0037).



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.10 (annotated in red).



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.12 (annotated in red).

NJOY Exhibit 2008.0862
Juul v. NJOY
IPR2024-00161

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The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses this claim element. *See* Conley '864 Declaration at ¶5 (Dependent claim 51); *See* Conley '864 Declaration at ¶5 (Independent claim 56 – Recitation 2).

NJOY also admitted that the Fuma Prototype discloses this claim element. *See* '864 Priority Chart at 40.

hh. '864 Patent, claim 25[f]: "such that the airflow passes on both transverse sides of the heating element during use of the electronic vaporizer,"

The term "both transverse sides of the [heating] element" has been construed "as having its plain and ordinary meaning, which is the claim language itself." Order No. 36 at 21.

1. Xia '610 in view of Wang '554 and Fang '044 and Smoke Fifty-One Duo– '864 Patent, Claim 25[f]

The evidence will show that Xia '610 discloses or renders obvious, alone or in combination with Wang '554 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 970-974; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 226-253, 257-265; JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici). NJOY and its expert do not dispute that this limitation is met by Xia '610. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 793-805; CX-2726C (Vallee Reb. Rpt.) at Appx. A-1, p. 8 (going right from claim 9 to claim 16).

For example Xia '610 explains that airflow goes around the heater, at least as NJOY interprets the claims (e.g., that airflow analysis is not required to determine where the air flows[33]):

> *under the action of airflow, small droplets are sucked … through the spray hole 904 … Under the action of the heating wire 901, the*

[33] For example, NJOY asserts that [redacted], without having done any air flow analysis. *See, e.g.,* RX-1014C (Vallee 04/11/2024 Tr.) at 257:15-258:6; *see also id.* at 256:2-9 (no airflow analysis for JUUL2), 257:9-14 (same)

NJOY Exhibit 2008.0863
Juul v. NJOY
IPR2024-00161

[redacted]

> *liquid is instantly atomized, then flows out of the heater 9 from the overflow holes 903, then flows to the position of the soft suction nozzle 13 through the gap between the soft suction nozzle and the liquid storage chamber 12 as the airflow channel, and is finally sucked out through the soft suction nozzle 13.*

JX-0596 (Xia '610) at JX-0596.13*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 972. The heating coil 9 of Xia '610 is displayed in further detail in the below annotated version of Figure 4, which illustrates the airflow passing all around the heating coil 901 and through holes 903:

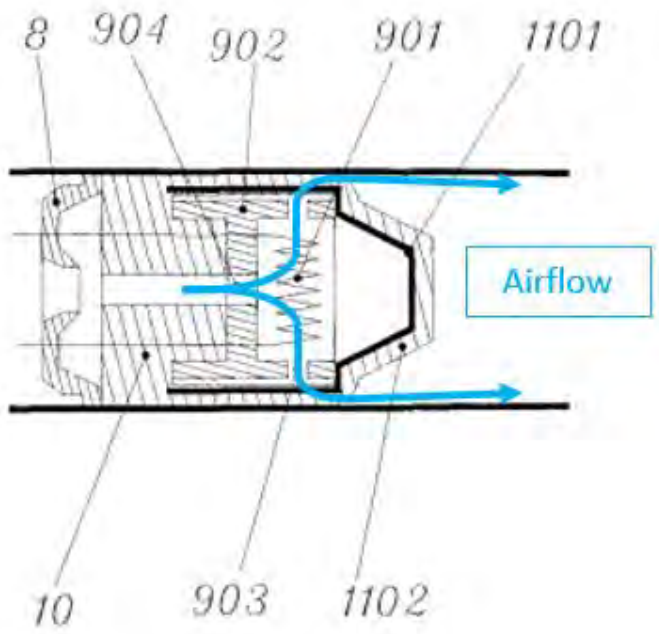


图 4

See JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 972.

To the extent not disclosed by Xia '610, this limitation would have been obvious over Xia '610 alone, Xia '610 in view of Wang '554, Xia '610 in view of Fang '044, and Xia '610 in view of Wang '554 and Fang '044. For example, Mr. Leinsing will opine that a POSITA would have understood that it is important to have airflow pass all around the heating coil, so that the vapor

NJOY Exhibit 2008.0864
Juul v. NJOY
IPR2024-00161

created can be better transported by the airflow through the airflow passageway and to the user. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 973-974. This means that to the extent that Xia '610's airflow does not already pass on "both transverse sides," it would have been obvious to move the holes 903 so that it would. For example, having better coverage of airflow passing around and on all sides of the heating coil can improve the thermal characteristics of the heater (because all sides are subject to the same convection cooling by the airflow) and there is better vapor suspension in the airflow (because the vapor is transported from all sides). To the extent that different arrangements of the heating coil cause airflow to pass "on both transverse sides," such as that in Wang '554 or Fang '044 a POSITA would have been motivated to incorporate such a design in combining the references. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 973.

This modification would have had predictable results, and Mr. Leinsing will opine that a POSITA making it would have had a reasonable expectation of success. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 974. For example, this modification is the result of a slight difference in the physical orientation of a heating coil and/or holes in the structures near or around the heating coil that do not introduce any uncertainties as to the functionality of the overall device. For example, it was known in the art to use heating coils oriented in different directions within cartridges and different arrangements of structures around the heating coils, such as disclosed in numerous references including Wang '554 and Fang '044 and Smoke Fifty-One Duo, so a POSITA would have understood that this was a viable and predictable way to design the device.

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '864 Patent, Claim 25[f]

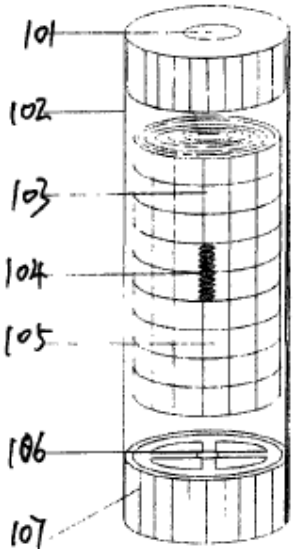
The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 1125-1127; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-

NJOY Exhibit 2008.0865
Juul v. NJOY
IPR2024-00161

[redacted]

295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici). NJOY and its expert do not dispute that this limitation is met by Wang '554. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 757-770; CX-2726C (Vallee Reb. Rpt.) at Appx. A-2, p. x.

For example, the evidence will show that in Wang '554, airflow through the passageway passes on both transverse sides of the element, at least as NJOY interprets the claims (e.g., that airflow analysis is not required to determine where the air flows, *see supra* n. 33) at least because air flows over the entirety of the heating coil 104 as depicted in Figure 3 of Wang '554.

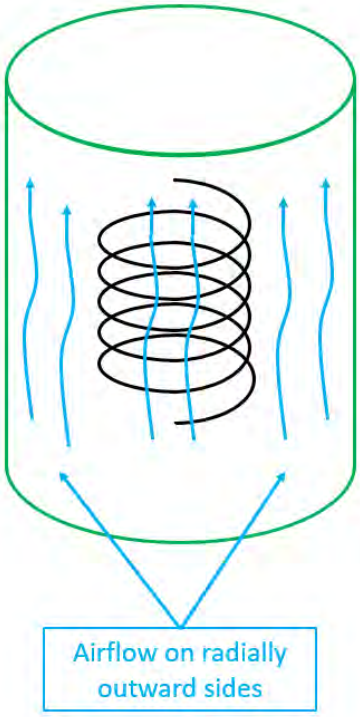


See RX-0005 (Wang '554) at Fig. 3.

For example, to the extent that the term means that air flows past the heating coil on two sides that are horizontally outward compared to the heating coil, Wang '554 discloses or renders obvious this configuration, such as in the below illustration:

NJOY Exhibit 2008.0866
Juul v. NJOY
IPR2024-00161

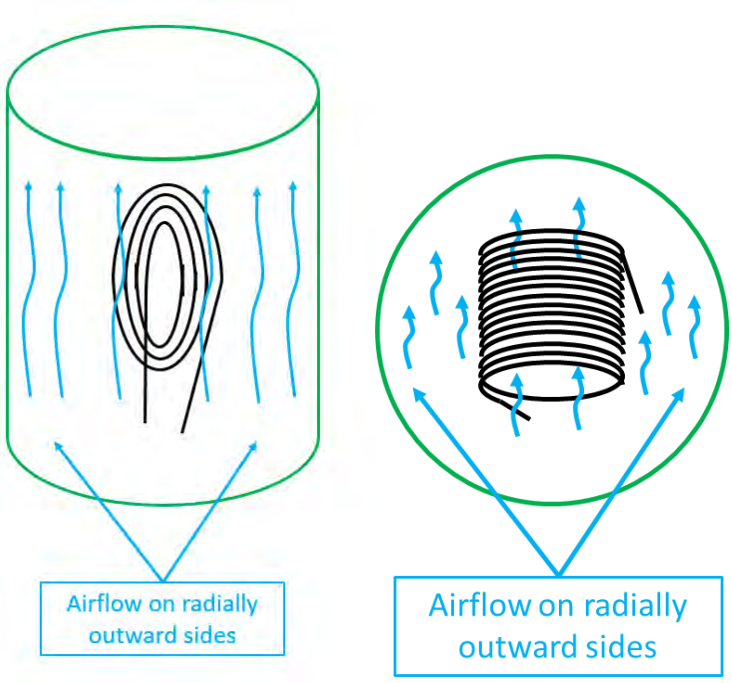
[redacted]



To the extent that the term means that air flows past the heating coil, with the heating coil oriented horizontally, Wang ’554 renders obvious this configuration as well. For example, as explained above with respect to limitation 1j), a POSITA would have been motivated in view of their knowledge and skill, as well as in view of Xia ’610 and/or Fang ’044 to modify Wang ’554 to have the heating coil extend in a horizontal orientation. As part of that modification, a POSITA would also be motivated to have the airflow go past the heating coil on its sides, such as in the below illustrations:

NJOY Exhibit 2008.0867
Juul v. NJOY
IPR2024-00161

[redacted]



For example, in orienting the heating coil horizontally, the heating coil does not block the entire airflow, so there is a space on the horizontally outward sides for air to flow.

3. Fang '044 in view of Xia '610 and Wang '554 and Smoke Fifty-One Duo – '864 Patent, Claim 25[f]

The evidence will show that Fang '044 discloses or renders obvious, alone or in combination with Xia '610 and Wang '554 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 1125-1127; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici).

For example, the evidence will show that a Fang 044 discloses that the airflow passes on at least the forward and backward sides of the heating element as illustrated in FIG. 1, which are sides of the heating element, at least as NJOY interprets the claims (e.g., that airflow analysis is not required to determine where the air flows, *see supra* n. 33). For example, Fang 044 explains that air flows through the "nicotine oil fuming device 5," including because "[w]hen the utility

NJOY Exhibit 2008.0868
Juul v. NJOY
IPR2024-00161

model is in use, the smoking channel 10 generates a negative pressure in the atomizer control switch 4 by a suction force of a user." Fang 044 at 1268-1269. Additionally, Fang 044 explains that "the nicotine oil smoke is smoked by the user through the gas pipe 8 and the smoking channel 10." Fang 044 at 1269. A POSITA would understand that this means that air flows through the heating chamber, referred to as the oil fuming device 5, and that the air must flow on at least both the forward and backward sides of the heating coil. For example, because airflow is restricted by the presence of temporary oil storage device 15 within the coil, the airflow would progress on the sides of the heating coil.

4. Wang '927 in view of Wang '554 and NPRO Style – '864 Patent, Claim 11

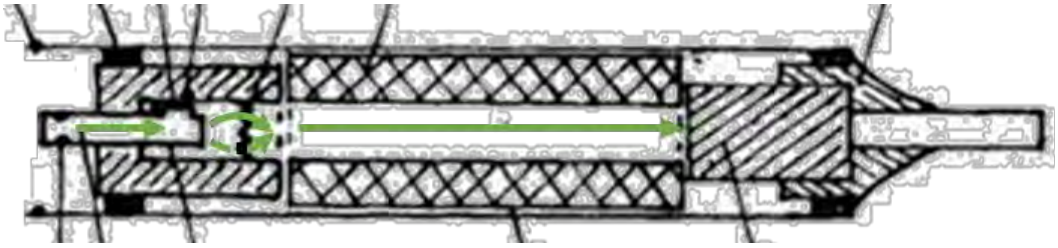
The evidence will show that Wang '927 discloses or renders obvious, alone or in combination with Wang '554 and NPRO Style this limitation. *See* JX-0634C (Leinsing Opening Rpt., Appx. B) at ¶¶ 79-84, 140-141; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang '927); RX-0005 (Wang '554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style). NJOY and its expert do not dispute that this limitation is met by Wang '927. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 784-793; CX-2726C (Vallee Reb. Rpt.) at Appx. B, pgs. x-xi.

Wang '927 discloses or renders obvious this limitation, at least as NJOY interprets the claims (e.g., that airflow analysis is not required to determine where the air flows, *see supra* n. 33). *Id*. For example, when air flows through the airflow passageway, or more specifically, the atomizer chamber, the air travels around the electric heating wire 9 and passes through the side surface of the electric heating wire, as shown in the illustration below. *Id*. The two portions of the side

NJOY Exhibit 2008.0869
Juul v. NJOY
IPR2024-00161

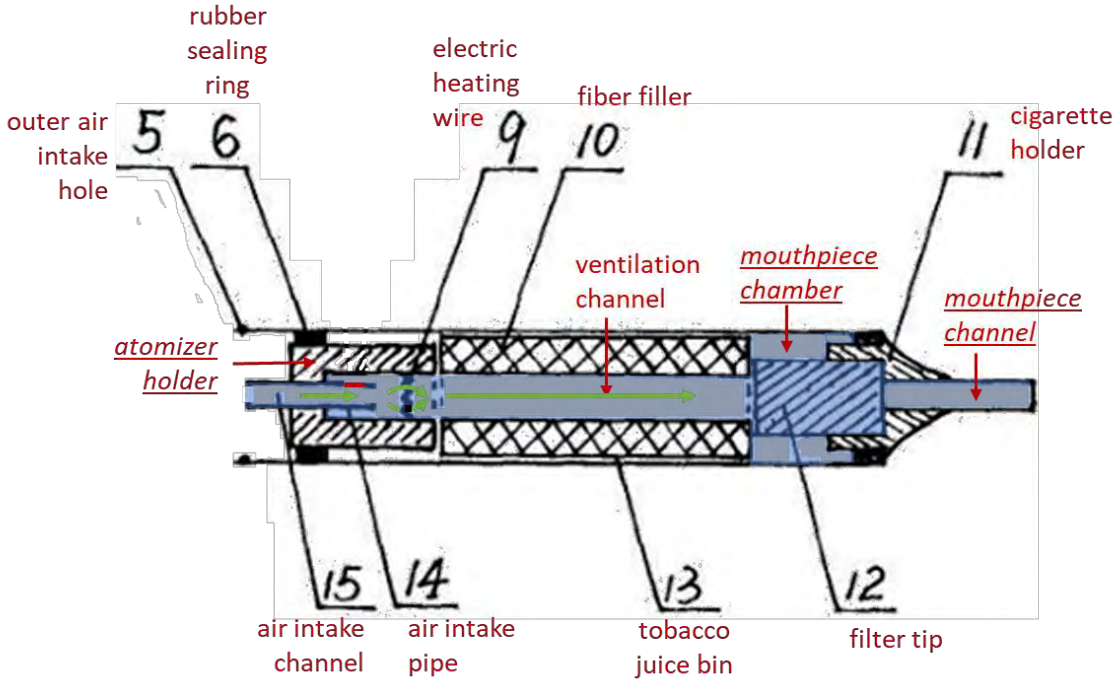
[redacted]

surfaces of the electric heating wire that the air passes through are the two transverse sides of the electric heating wire. *Id*.



See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end) (annotated in green).

Similarly, with the modified air intake pipe discussed above, airflow (shown in green) through the modified airflow passageway, when coming out from the modified air intake pipe, would pass on both transverse sides of the electric heating wire. JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5.



See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end with switch swapped to the battery portion) (annotated in red, green, and blue).

NJOY Exhibit 2008.0870
Juul v. NJOY
IPR2024-00161

[redacted]

5. Han ’364 in view of Fang ’044 and NPRO Style – ’864 Patent, Claim 25[f]

The evidence will show that Han ’364 in view of Fang ’044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 369-373, 469-470; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han ’364 certified English Translation) ; JX-0595 (Fang ‘044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit).

For example, Han ’364 discloses that air passes over filament 6/23, as air will come into the cartridge via air pressure transmission hole 13/30 and out of the cartridge via suction hole 12/36, causing the air to pass through the airflow passageway in which filament 6/23 are oriented. *See* JX-0631 (Han ’364 certified English Translation) at [0013]-[0014]; FIGs. 1, 8*; see also* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶ 370. Due to the orientation of the filament 6/23 within the airflow passageway in Han ’364, air flows perpendicular to portions of the filament 6/23, at least as NJOY interprets the claims (e.g., that airflow analysis is not required to determine where the air flows, *see supra* n. 33). *See* JX-0631 (Han ’364 certified English Translation) at FIGs. 1, 8; *see also* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶ 370.

NJOY asserts that Han ’364 does not disclose or renders obvious this limitation for the same reasons as claim 1[f]. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. C, ¶ 418. However, NJOY is incorrect for the same reasons as described in claim 1[f]. *See* Section IV.G.1.xiii.h (claim 1 [f]) *supra*.

6. Red Dragon in view of Fang ’044 and Wang ’927 – ’864 Patent, Claim 25[f]

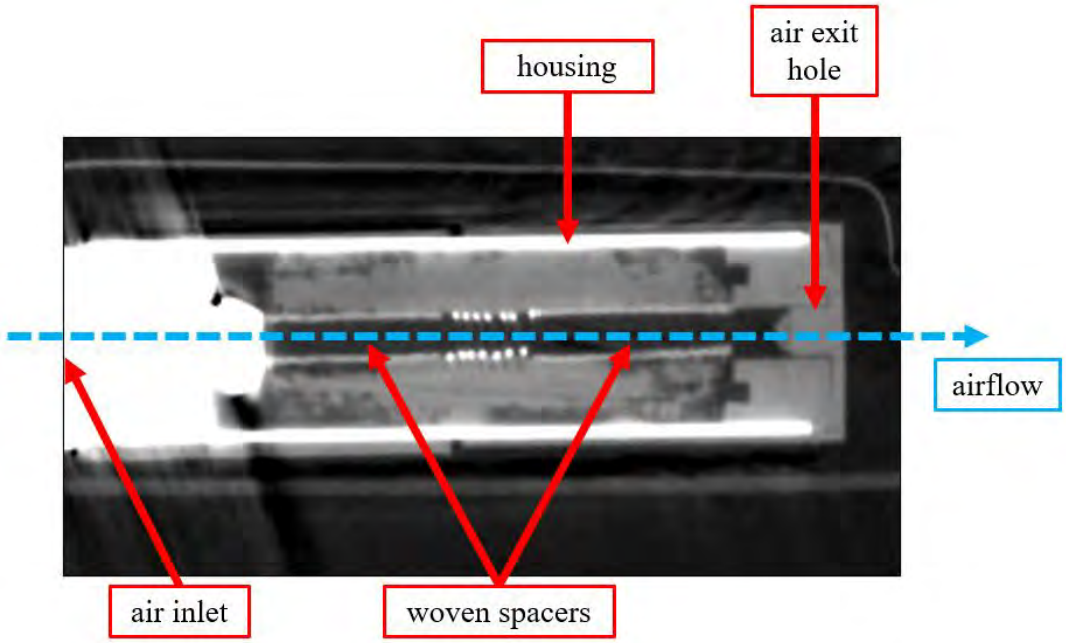
The evidence will show that Red Dragon in view of Fang ’044 and Wang ’927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 363-364, 441-442; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1);

NJOY Exhibit 2008.0871
Juul v. NJOY
IPR2024-00161

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RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927).

The evidence will show that the Red Dragon discloses or renders obvious this claim limitation. Mr. Lensing will opine that when the user inhales during use of the Red Dragon, airflow passes on and over both sides of the heating coil that extends transversely, at least as NJOY interprets the claims (e.g., that airflow analysis is not required to determine where the air flows, *see supra* n. 33). *See, e.g.,* RX-0077 at RX-0077.22 ; *see also* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶¶ 363-364. The airflow through the Red Dragon Airflow Passageway also passes on and over the inner side surfaces of the heating coil. *Id.*



[redacted]

See RX-0077 at RX-0077.22 (annotated in red); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 492.

Additionally, as modified to have a heating coil extending perpendicular to the longitudinal axis, airflow would pass through the heating coil as well as all around it, including on both transverse sides, at least as NJOY interprets the claims.

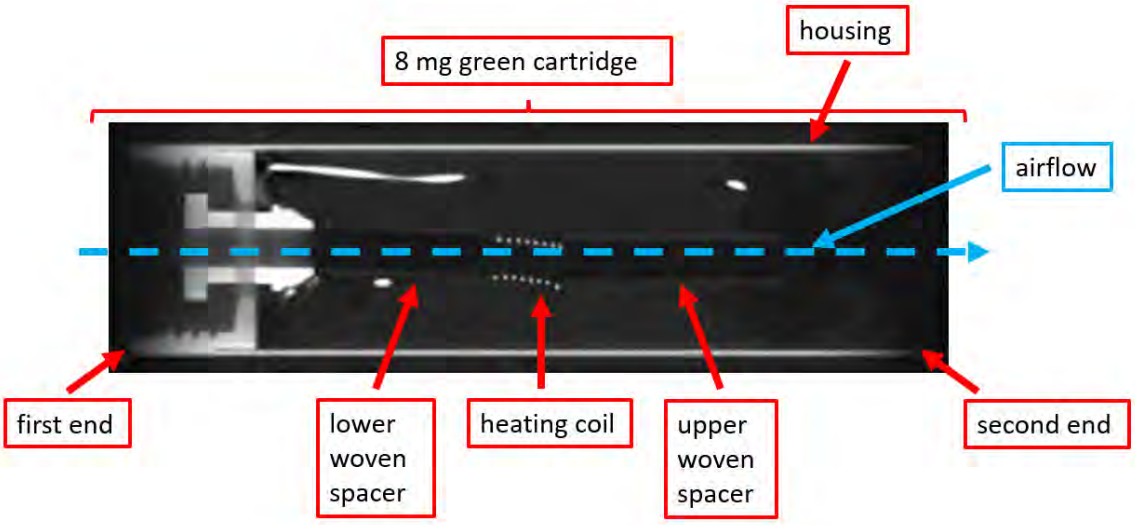
7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '864 Patent, Claim 25[f]

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 355-357, 436-437; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, Mr. Lensing will opine that when the user inhales during use, airflow passes on and over both sides of the heating coil that extends transversely, at least as NJOY interprets the claims (e.g., that airflow analysis is not required to determine where the air flows, *see supra* n. 33). *See, e.g.,* RX-0130C (Declaration of Yardimici) at RX-0130C.29; *see also* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 356-357. The airflow through the Smoke Fifty-One Duo Airflow Passageway also passes on and over the inner side surfaces of the heating coil.

NJOY Exhibit 2008.0873
Juul v. NJOY
IPR2024-00161

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See RX-0130C (Declaration of Yardimici) at RX-0130C.38; JX-0632C (Leinsing Opening Rpt.) at ¶ 443.

8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 25[f]

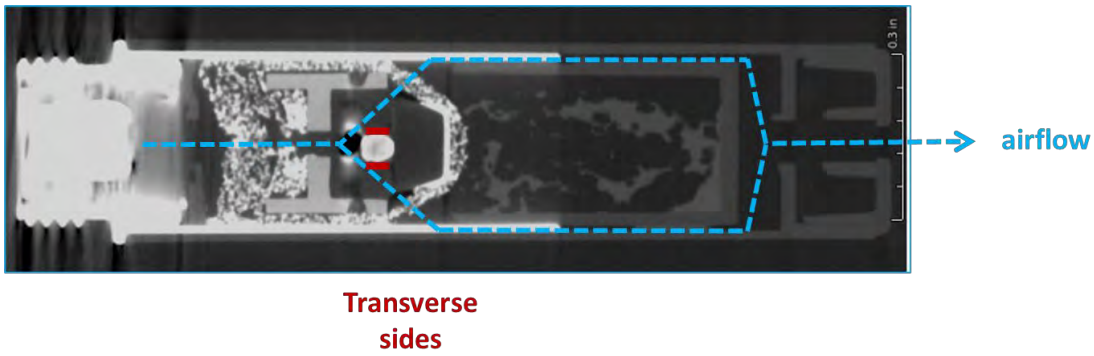
The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 441-443; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-360, 548-612; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044). NJOY and its expert do not dispute that the NJOY NPRO discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 963-980; CX-2726C (Vallee Reb. Rpt.) at Appx. G, ¶ 338.

The evidence will show that the NJOY NPRO discloses or renders obvious this claim limitation, at least as NJOY interprets the claims (e.g., that airflow analysis is not required to determine where the air flows, *see supra* n. 33). Mr. Lensing will opine that a POSITA would understand, since the airflow travels through the airflow passageway and the heating element

NJOY Exhibit 2008.0874
Juul v. NJOY
IPR2024-00161

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extends transversely to the airflow passageway, the airflow must necessarily pass on both transverse sides of the heating element to reach the second aperture. RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO).



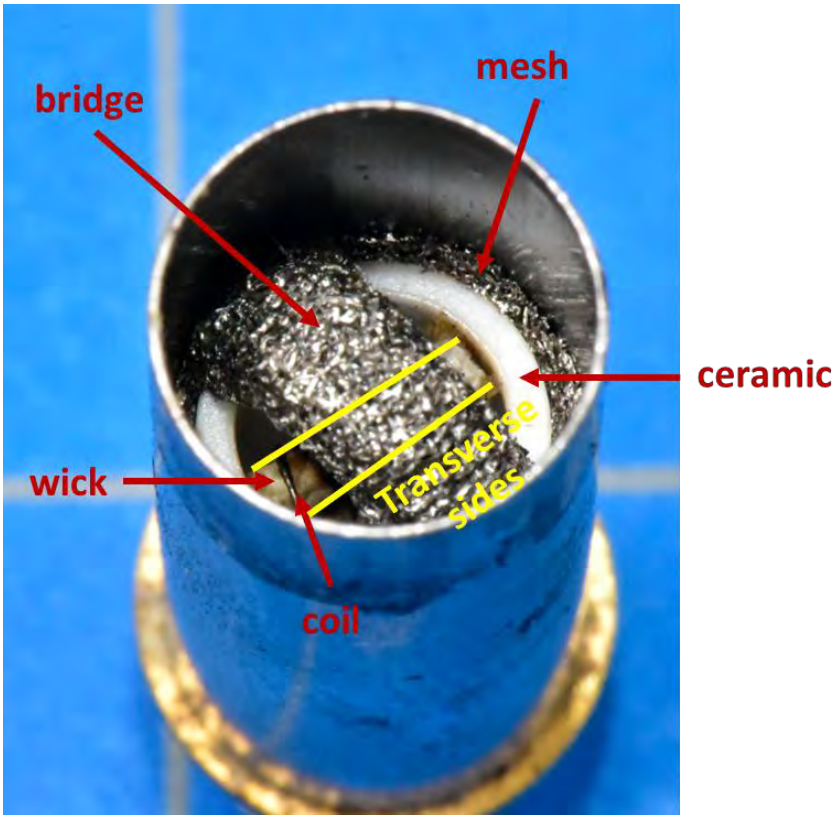
See JX-0404 (CT Scans of NJOY NPRO) at JX-0404.11 (annotated in red and blue); *see also* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 357-360.



See JX-0404 (NPRO Photos) at JX-0404.16 (annotated in red).

NJOY Exhibit 2008.0875
Juul v. NJOY
IPR2024-00161

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See RX-0082 (Photos of NJOY NPRO) at RX-0082.67 (annotated in red).

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 25[f]

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 441-443; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.

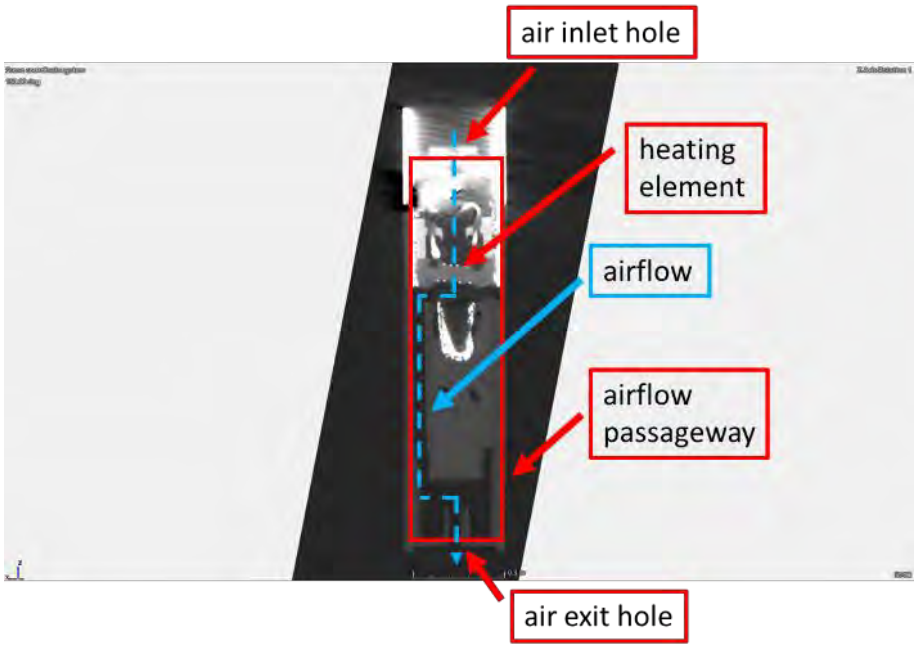
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Juul v. NJOY
IPR2024-00161

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10. Cigarette Electronique – '864 Patent, Claim 25[f]

The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 435-439, 527-532; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).. NJOY and its expert do not dispute that this limitation is met by the Cigarette Electronique. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 937-963; CX-2726C (Vallee Reb. Rpt.) at ¶ 261.

For example, the CT scan below shows the positioning of the heating element relative to the airflow through the airflow passageway. Mr. Leinsing will opine that a POSITA would understand that, since the airflow travels through the airflow passageway and the heating element extends transversely to the airflow passageway, the airflow passes on both transverse sides of the heating element, at least as NJOY interprets the claims (e.g., that airflow analysis is not required to determine where the air flows, *see supra* n. 33).

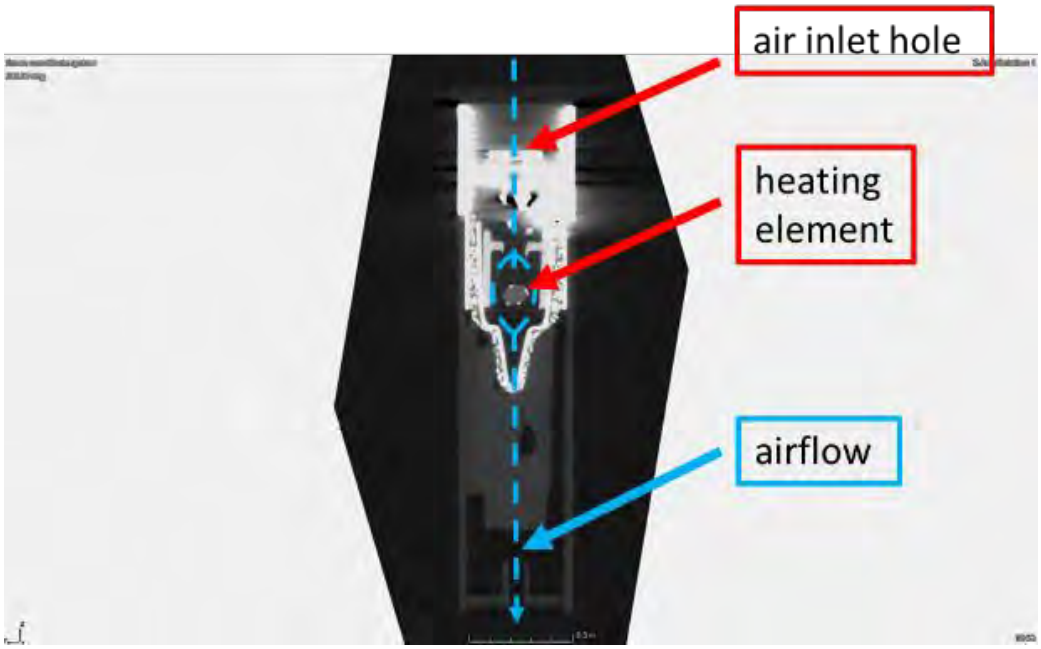


NJOY Exhibit 2008.0877
Juul v. NJOY
IPR2024-00161

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See JX-0401 (Photos of Cigarette Electronique) at JX-0401.5 (annotated in red and blue); *see also* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 437.

For example, the CT scan below shows a different angle of the interior of the housing, such that the direction in which the heating element extends is the same direction in which the viewer is looking (into the page). The CT scan shows that the airflow entering through the first aperture must separate to travel around the heating element and continue through the housing.



See JX-0401 (Photos of Cigarette Electronique) at JX-0401.16 (annotated in red and blue); *see also* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶ 438.

11. Fuma Prototype – '864 Patent, Claim 25[f]

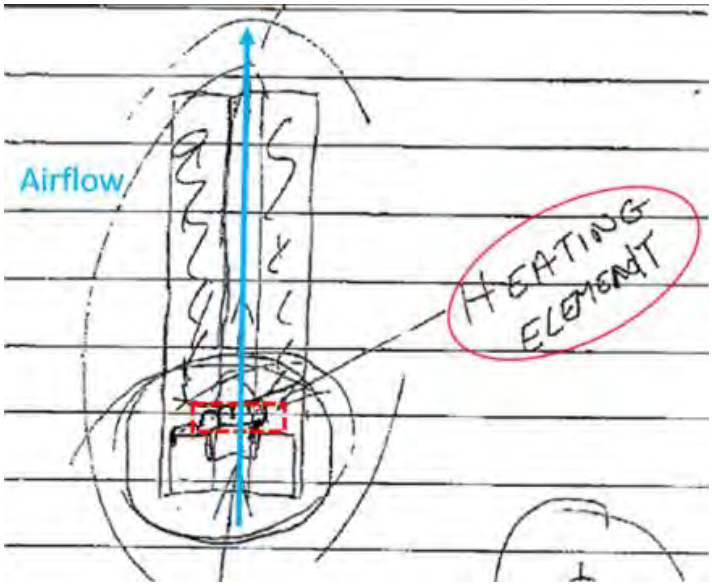
The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 406-407; 330-332; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

For example, under NJOY's interpretation of sides, which allows the side surface of a cylindrical shaped object to have sides, the airflow through the woven spacer passes on both sides

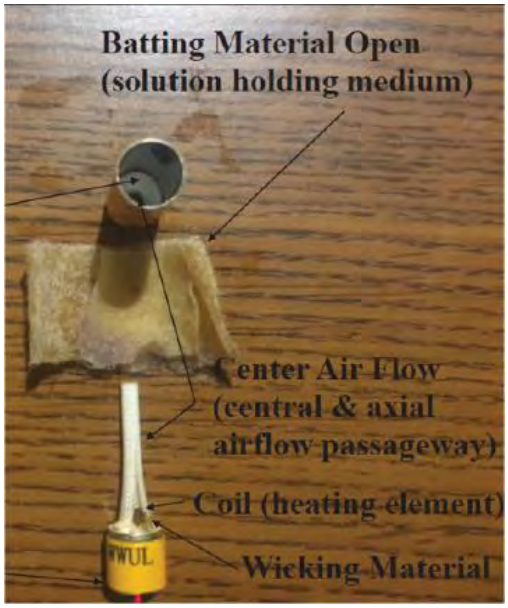
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Juul v. NJOY
IPR2024-00161

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of the heating coil at least as NJOY interprets the claims (e.g., that airflow analysis is not required to determine where the air flows, *see supra* n. 33).



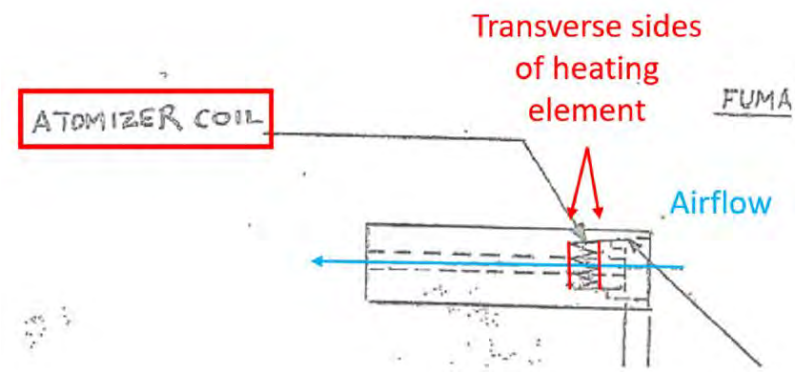
See '864 Priority Chart at 34 (citing CRTP Attachment C).



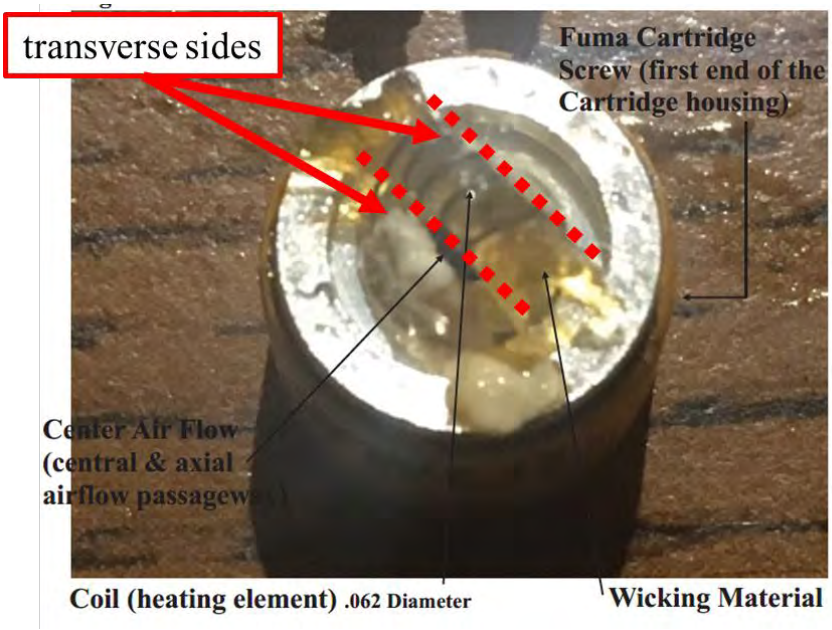
See '864 Priority Chart at 35 (citing CRTP Attachment D at Fig. 11).

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Juul v. NJOY
IPR2024-00161

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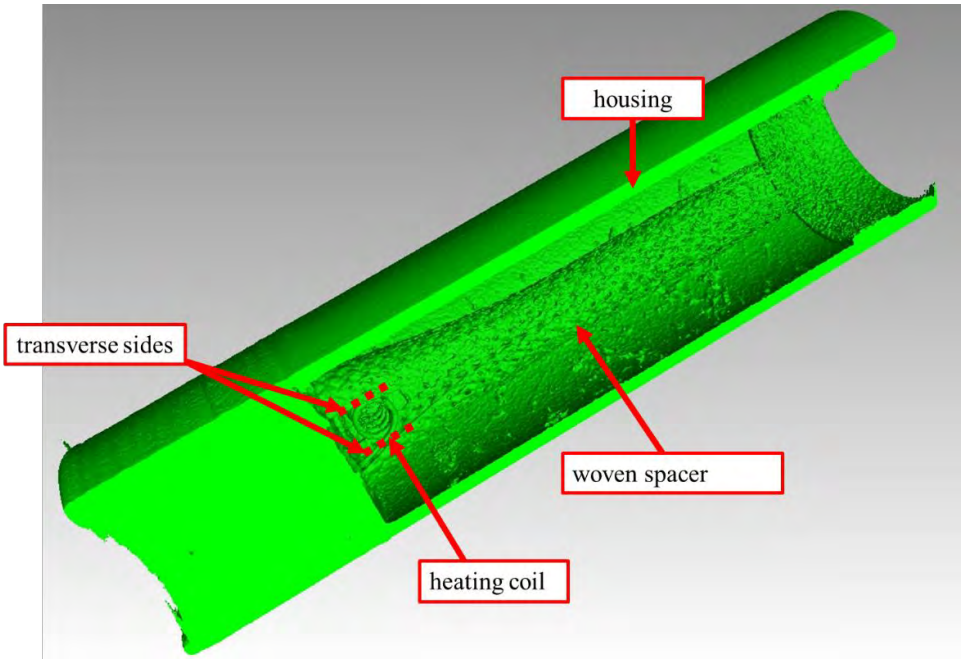


See '864 Priority Chart at 35 (citing CRTP Attachment E at FUMA-INSPECTION-0037).



See CRTP Exhibit A at Fig. 14 (annotated in red).

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See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.5 (annotated in red).

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses this claim element. *See* Conley '864 Declaration at ¶5 (Dependent claim 43).

NJOY also admitted that the Fuma Prototype discloses this claim element. *See* '864 Priority Chart at 34-35.

ii. '864 Patent, claim 25[g and h]: "the heating element being configured to vaporize at least the portion of the solution drawn to the heating element for oral provision to an individual in the airflow"

The term "the portion of the solution" has been construed "as having its plain and ordinary meaning, that is, the words of the claims." Order No. 36 at 25.

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[f and g] of the '864 Patent.

NJOY Exhibit 2008.0881
Juul v. NJOY
IPR2024-00161

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jj. '864 Patent, claim 25[i]: "the heating element being responsive to electrical power received from the power source"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[h] of the '864 Patent.

kk. '864 Patent, claim 25[j]: "an airflow passageway in the housing, at least a portion of the airflow passageway extending centrally and axially with respect to the housing"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[i] of the '864 Patent.

a. '864 Patent, claim 25[k]: "wherein the airflow passageway extends in a straight path from the first aperture to the second aperture"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[j] of the '864 Patent.

b. '864 Patent, claim 25[l]: "with only the heating element obstructing a portion of the airflow through the airflow passageway along the central longitudinal axis of the housing"

1. Xia '610 in view of Wang '554 and Fang '044 and Smoke Fifty-One Duo– '864 Patent, Claim 25[l]

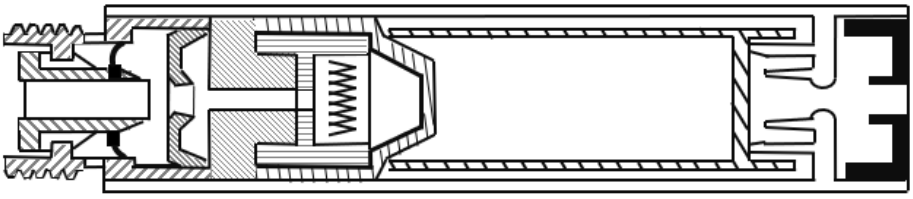
The evidence will show that Xia '610 discloses or renders obvious, alone or in combination with Wang '554 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 896-904, 1151-1153; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

For example, as explained above, Mr. Leinsing will opine that a POSITA would be motivated to move to a central and axial through-hole for air flow by Xia '610 alone, Xia '610 in view of Wang '554, and Xia '610 in view of Fang '044, Xia '610 in view of Smoke Fifty-One Duo, and Xia '610 in view of Wang '554 and Fang '044 and Smoke Fifty-One Duo. *See* JX-0633C

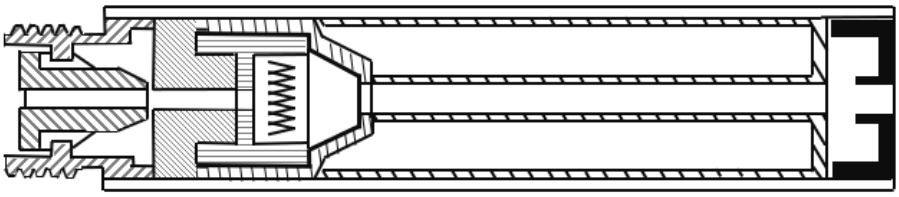
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Juul v. NJOY
IPR2024-00161

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(Leinsing Opening Rpt., Appx. A) at ¶ 897. For example, this modification simplifies the airflow passageway, and to do so would simply require that the liquid storage 12 have a cutout through the middle, and would have several benefits. Along with moving the air intake to the controller portion, this modification greatly simplifies the device, and allows for a larger liquid storage chamber 12 (e.g., by moving the heating chamber leftward). For example, the following images illustrate the difference between Xia '610's original design and an example obvious modification of it:



Original



Modified

See JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 897.

As described above, this modification would improve the manufacturing of the device, would allow the liquid storage 12 to be larger within the same size housing, improves the airflow through the device, and improves thermal insulation to the exterior of the device. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 898.

With this modification, the only thing obstructing the airflow through the airflow passageway along a central longitudinal axis of the device is the heater 9 of Xia '610.

NJOY Exhibit 2008.0883
Juul v. NJOY
IPR2024-00161

[redacted]

2. Wang ’554 in view of Xia ’610 and Fang ’044 and Smoke Fifty-One Duo – ’864 Patent, Claim 25[l]

The evidence will show that Wang ’554 discloses or renders obvious, alone or in combination with Xia ’610 and Fang ’044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 905-906, 1151-1153; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang ‘554); JX-0596 (Xia ‘610); JX-0595 (Fang ‘044); RX-0130C (Declaration of Yardimici). NJOY and its expert do not dispute that this limitation is met by Wang ’554. *See* CX-2110 (Complainant’s First Sup. Validity Contentions (03/12/2024)) at 757-770; CX-2726C (Vallee Reb. Rpt.) at Appx. A-2, ¶ 262.

For example, the evidence will show that Wang ’554 discloses an airflow passageway with only the heating coil obstructing the airflow:

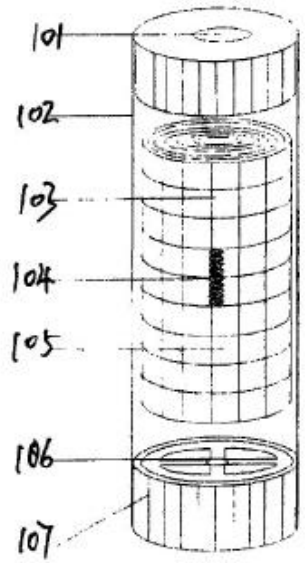


图3

See RX-0005 (Wang ‘554) at FIG 3; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 905.

NJOY Exhibit 2008.0884
Juul v. NJOY
IPR2024-00161

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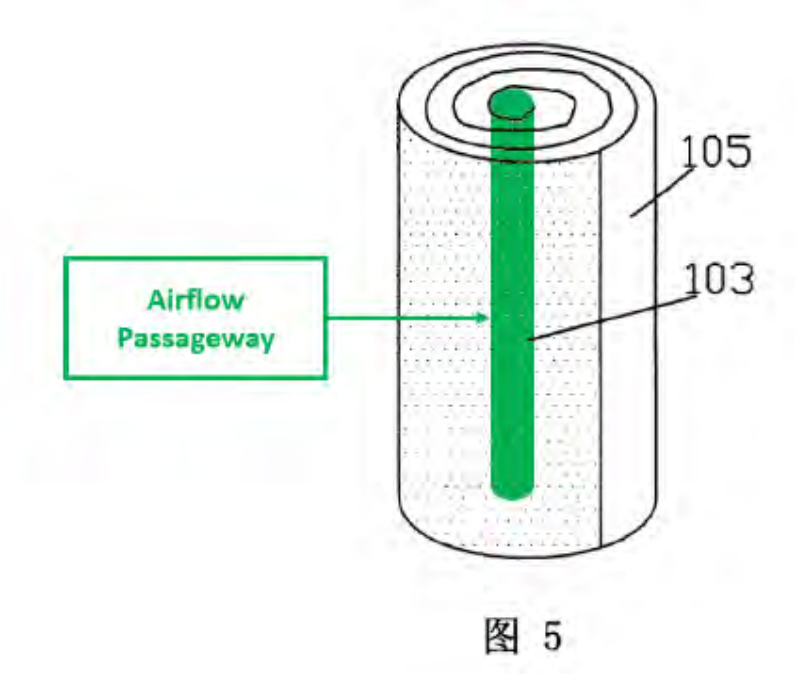


图 5

See RX-0005 (Wang '554) at Fig. 5 (annotated).

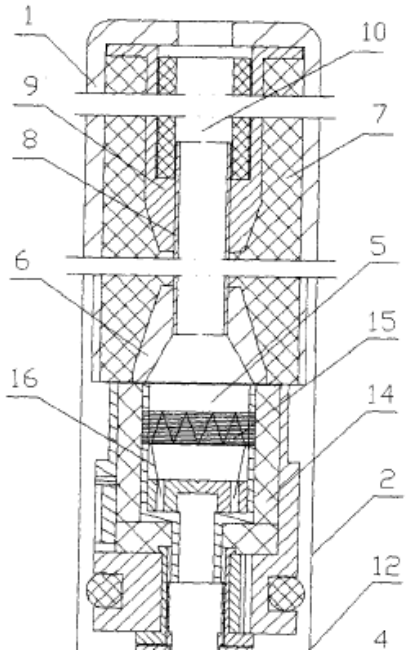
3. Fang '044 in view of Xia '610 and Wang '554 and Smoke Fifty-One Duo – '864 Patent, Claim 25[l]

The evidence will show that Fang '044 discloses or renders obvious, alone or in combination with Xia '610 and Wang '554 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 907, 1151-1153; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici).

For example, the evidence will show that Fang '044 discloses an airflow passageway with only the heating coil obstructing the airflow:

NJOY Exhibit 2008.0885
Juul v. NJOY
IPR2024-00161

[redacted]



See JX-0595 (Fang '044) at FIG. 1*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 907.

4. Wang '927 in view of Wang '554 and NPRO Style – '864 Patent, Claim 25[l]

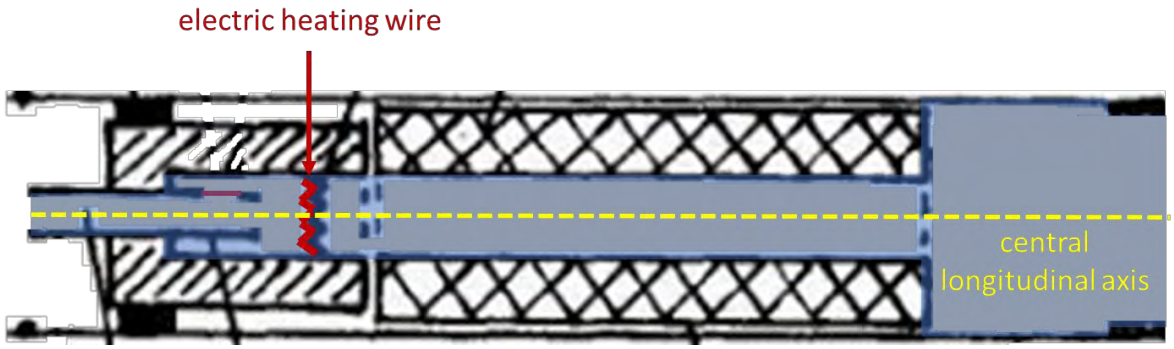
The evidence will show that Wang '927 discloses or renders obvious, alone or in combination with Wang '554 and NPRO Style this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ , 323-324, 463-464; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang '927); RX-0005 (Wang '554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style).

The evidence will show that a POSITA would be motivated to modify the air intake pipe as shown below. *Id*. With the modification, under NJOY's interpretation where the mouthpiece does not need to be part of the cartridge, the electric heating wire (highlighted in red) is the only

NJOY Exhibit 2008.0886
Juul v. NJOY
IPR2024-00161

[redacted]

thing that obstructs a portion of the airflow through the airflow passageway (highlighted in blue) along the central longitudinal axis of the housing. *Id*.



See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end with modified air intake pipe; modified to remove the cigarette holder and the filter tip installed on it) (annotated in red and blue); *see also* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶ 324.

5. Han '364 in view of Fang '044 and NPRO Style – '864 Patent, Claim 25[l]

The evidence will show that Han '364 in view of Fang '044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 330-332, 483-485; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han '364 certified English Translation) ; JX-0595 (Fang '044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit). NJOY and its expert do not dispute that Han '364 discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 893-897. CX-2726C (Vallee Reb. Rpt.) at Appx. C, ¶ 406.

For example, Han '364 only discloses filament coil 6 residing within the airflow passageway. *See* JX-0631 (Han '364 certified English Translation) at [0013]; FIG. 1; *see also* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 330-332. Therefore, Han '364 discloses that only the heating element obstructs a portion of the airflow through the airflow passageway. *Id.*

NJOY Exhibit 2008.0887
Juul v. NJOY
IPR2024-00161

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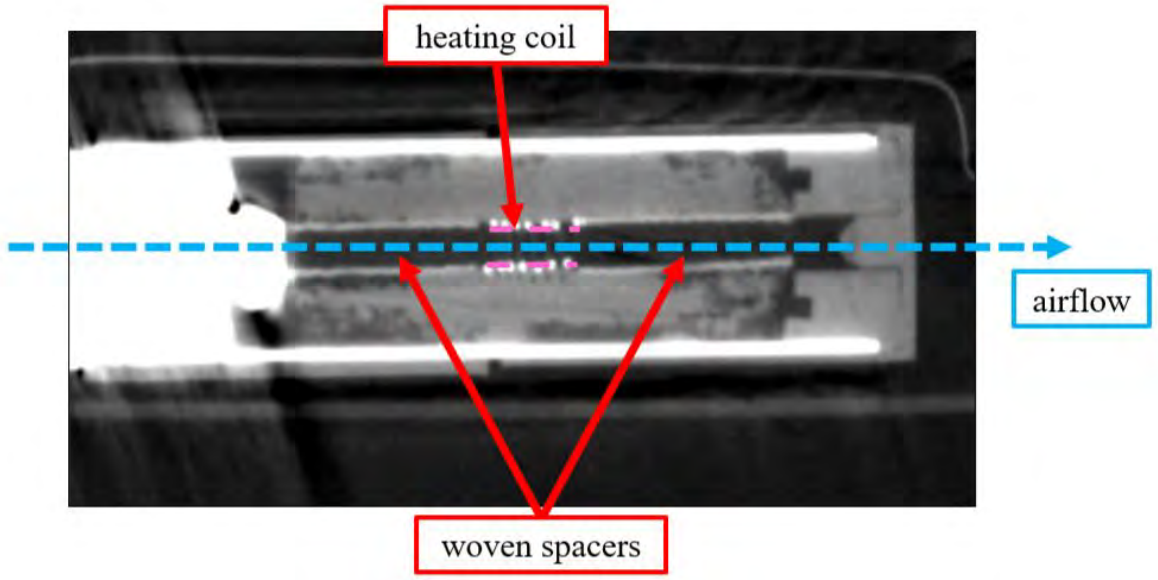
6. Red Dragon in view of Fang ’044 and Wang ’927 – ’864 Patent, Claim 25[l]

The evidence will show that Red Dragon in view of Fang ’044 and Wang ’927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 326-327, 454-455; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang ’044); JX-0594 (Wang ’927).

For example, as shown in the CT scan below, only the heating coil obstructs a portion of the airflow through the Red Dragon Airflow Passageway. Specifically, when the airflow goes through the lower woven spacer and past the wicking material wrapped around the heating coil, the air will also pass through and over the heating coil to reach the upper woven spacer. The wiring of the heating coil obstructs the airflow around the circumference of the Red Dragon Airflow Passageway, but otherwise there are no obstructions within the airflow passageway, as the wicking material is positioned on the outside of the heating coil, bridging the area between the two woven spacers and forming the passageway from the first aperture to the second aperture:

NJOY Exhibit 2008.0888
Juul v. NJOY
IPR2024-00161

[redacted]



See RX-0077 at RX-0077.22 (annotated); RX-0077 (CT Scans of Red Dragon Kit #2) at RX-0077.36 (annotated); *see also* RX-1126C (Evans 03/11/24 Tr.) at 87:4-88:25, 91:14-92:6; JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 326-327.

7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '864 Patent, Claim 25[l]

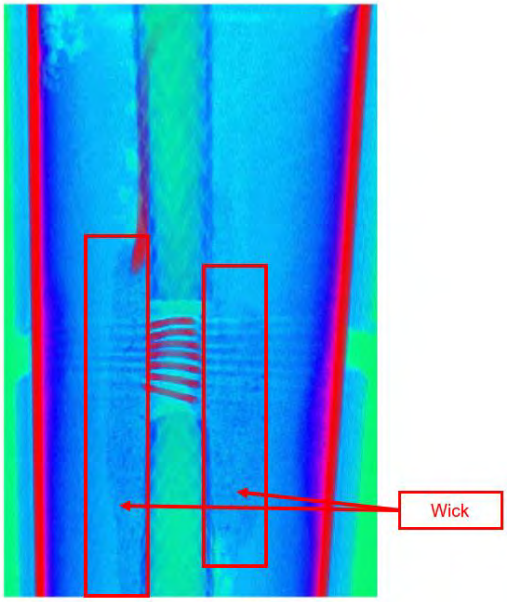
The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 317-319, 449-450; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, as shown in the CT scan below, only the heating coil obstructs a portion of the airflow through the Smoke Fifty-One Duo Airflow Passageway. Specifically, when the airflow goes through the lower woven spacer and past the wicking material wrapped around the heating coil, the air will also pass through and over the heating coil to reach the upper woven spacer. The wiring of the heating coil obstructs the airflow around the circumference of the Smoke Fifty-One Duo Airflow Passageway, but otherwise there are no obstructions within the airflow passageway,

NJOY Exhibit 2008.0889
Juul v. NJOY
IPR2024-00161

[redacted]

as the wicking material in the 8 mg cartridge is positioned on the outside of the heating coil, bridging the area between the two woven spacers and forming the passageway from the first aperture to the second aperture.

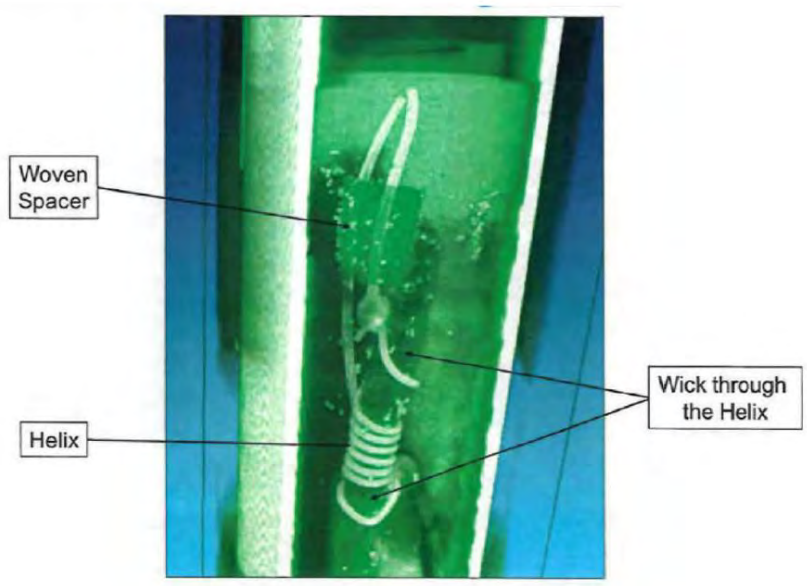


See RX-0130C (Yardimici Declaration) at RX-0130C.68 (annotated in red); *see also* JX-0636C (Leinsing Opening Rpt., Appx. D) at JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶ 318.

In the 16 mg cartridge, a wick separate from the heating coil is present within the coil and would provide some obstruction of the airflow in the airflow passageway. However, under NJOY's interpretation, this wick would be part of the heating element, and thus only the heating element (i.e., collectively the heating coil and wick) would obstruct the airflow passageway:

NJOY Exhibit 2008.0890
Juul v. NJOY
IPR2024-00161

[redacted]



See RX-0130C (Yardimici Declaration) at RX-0130C.45 (annotated in red); *see also* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶ 319.

8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 25[l]

The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 453-454; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 548-612; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044). NJOY and its expert do not dispute that the NJOY NPRO discloses or renders obvious this claim limitation. *See* CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) at 963-980; CX-2726C (Vallee Reb. Rpt.) at Appx. G, ¶ 317-318.

For example, a POSITA would be motivated to move to a central and axial through-hole by the NPRO alone, the NPRO in view of Wang '554, Wang '927, and/or Fang '044. JX-0632C (Leinsing Invalidity Rpt.) at ¶ 570; JX-0595 (Fang '044); RX-0005 (Wang '554); JX-0594 (Wang

NJOY Exhibit 2008.0891
Juul v. NJOY
IPR2024-00161

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’927). In the modified NPRO, only the heating element would obstruct the airflow through the airflow passageway along the central axis of the housing. *Id.* For example, as Mr. Leinsing will explain, this modification simplifies the airflow passageway, and to do so would simply require that the batting material have a cutout or tube through the middle, and would have several benefits. *Id.* This modification greatly simplifies the device, and allows for a larger liquid storage. *Id.*

Mr. Leinsing will also explain that this modification would improve the manufacturing of the device. JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 571. For example, having a central through-hole for an airflow passageway like the proposed modification makes assembly of the solution holding medium easier, as for example, batting or absorbent material can be stuffed into the device around a tube, without needing to worry about leaving the gap between the batting material and the housing. *Id.* This requires less precision in manufacturing and eliminates the need to have parts suspending the batting material within the housing for example. *Id.*

This modification would allow the batting material to be larger within the same size housing, as it could more extend further in both the radial and longitudinal directions. JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 572. For example, with the airflow proceeding through a through-hole in the middle of the batting material, there would no longer be a need to leave a gap between the batting material and the sidewall. *Id.* This means that the liquid storage could occupy more radial space, and extend all the way to the inner edge of the housing, rather than stopping short to leave a gap. *Id.* Though there would be a new gap in the middle of the liquid storage chamber, a POSITA would expect that the total volume of the new gap could be smaller than the total volume of the eliminated gap. *Id.* For example, the airflow would be less turbulent and need to make fewer directional changes, so would flow more easily through a smaller total cross-sectional area. *Id.* This modification also allows the batting material to extend further longitudinally, as it removes

NJOY Exhibit 2008.0892
Juul v. NJOY
IPR2024-00161

the need to have space for the airflow to return to the middle to exit the second aperture. *Id.; see also* JX-0646C (Leinsing Opening Rpt., Appx. S).

This modification also improves the airflow through the device, because there are fewer directional changes and obstacles for the air and vapor to pass on its way to the second aperture. JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 573. For example, having the airflow passageway extend through a through-hole in the middle of the device eliminates the need for the air to change directions around obstacles such as the batting material. *Id.* Having fewer directional changes and obstacles results in less suction being required by the user to draw air and vapor through the device, making it a more enjoyable experience. *Id.* Having fewer directional changes and corners in the trajectory of the airflow also reduces the likelihood of condensation or only partially vaporized e-liquid collecting in corners within the device. *Id.* The collection of liquid in corners of an airflow passageway could result in a sticky residue that could clog the airflow through the device. *Id.*

This modification would also improve thermal insulation to the exterior of the device, something the prior art as a whole, and a POSITA in general would be concerned with. JX-0632C (Leinsing Invalidity Rpt.) at ¶ 574. For example, without thermal insulation between the vapor and the shell of the housing, the housing could heat up. *Id.* This could for example cause the housing of the device to burn a user after repeated use. *Id.* Additionally, adding thermal insulation between the shell and the vapor can better control the temperature of the vapor. *Id.* This is important so that, no matter external conditions, the vapor has more consistent characteristics. *Id.* If, for example, the device was used in cold weather, without insulation between the shell and the vapor, there could be increased condensation of the vapor within the pathway. *Id.* Vapor condensation is undesirable because it reduces the vapor content of the air that the user receives, and also because it increases the risk of what is commonly referred to as "leakage" of liquid or undesirable ingestion

NJOY Exhibit 2008.0893
Juul v. NJOY
IPR2024-00161

of condensation droplets. *Id.* For example, with increased condensation, the vapor condensate could be sucked by the user into their mouth, or following use of the device, could leak out of the mouthpiece and into a user's pocket for example. *Id.* A POSITA would have understood that modifying the NPRO E-Cig to have the air flow through a central through-hole in the batting material would increase the thermal insulation between the shell and the vapor because the batting material itself would function as a thermal insulation barrier. *Id.*

Wang '554, Fang '044 and Wang '927 disclose a central and axial channel through which airflow passes, and a POSITA modifying the NPRO E-Cig in view of Wang '554, Fang '044 and/or Wang '927 would have been motivated to incorporate that design from either of those references for the reasons explained, including improved manufacturing, storage capacity, airflow, and insulation. JX-0632C (Leinsing Invalidity Rpt.) at ¶ 575.

This modification would have had predictable results, and a POSITA making it would have had a reasonable expectation of success. JX-0632C (Leinsing Invalidity Rpt.) at ¶ 576. For example, this modification is the result of a slight difference in the physical location of a gap for air to flow through that does not introduce any uncertainties as to the functionality of the overall device. *Id.* For example, it was known in the art to use tubes or gaps located centrally and axially without any obstacles therein within cartridges, such as disclosed in numerous references including Wang '554, Wang '927 and Fang '044, so a POSITA would have understood that this was a viable and predictable way to design the device. *Id.*

Complainant disagrees that the NJOY NPRO and NCIG device discloses this limitation for two reasons. First, Complainant asserts there are several elements that obstruct the airflow along the central longitudinal axis of the housing. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. G, ¶ 271.

NJOY Exhibit 2008.0894
Juul v. NJOY
IPR2024-00161

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Second, Complainant argues that the airflow passageway is not straight because there are several elements that obstruct the airflow along the central longitudinal axis of the housing. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. G, ¶¶ 272. However, as described in claim 1[j] *supra*, because the airflow passageway is defined by the circular wall of the housing, the airflow passageway extends centrally and axially with respect to the housing from the first aperture of the housing to the second aperture of the housing at least as NJOY interprets the claims with respect to infringement (i.e., that the airflow can go around obstacles and still be "central and axial"). *See* Section IV.G.1.xiii.k (claim 1[j]) *supra*. Further, as modified by a POSITA and as would have been obvious, there would be a through hole airflow passageway with no obstacles.

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '864 Patent, Claim 25[l]

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 453-454; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.

10. Cigarette Electronique – '864 Patent, Claim 25[l]

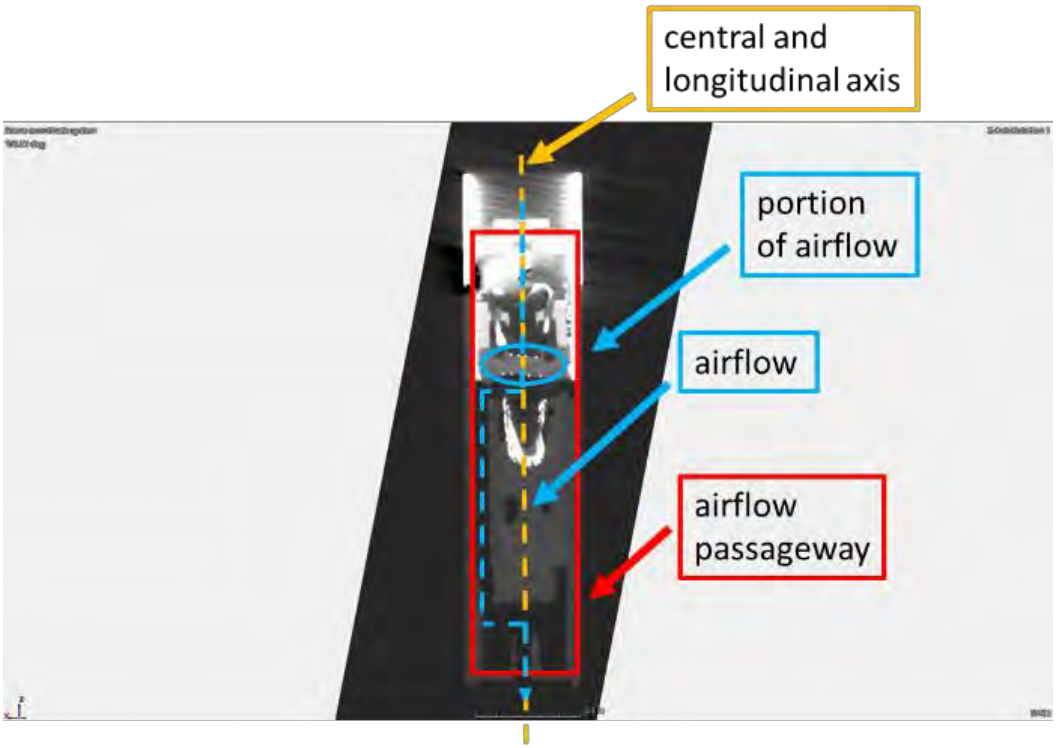
The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 390-398, 541-542; JX-0632C

NJOY Exhibit 2008.0895
Juul v. NJOY
IPR2024-00161

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(Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).

For example, the CT scan below shows the portion of the airflow through the airflow passageway along which only the heating element obstructs the airflow along the central longitudinal axis of the housing.



See JX-0401 (Photos of Cigarette Electronique) at JX-0401.5 (annotated in red, yellow, and blue); *see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 391.

Additionally, in modifying the device to have a through-hole passageway, only the heating element would obstruct the airflow through the airflow passageway along the central axis of the housing. Mr. Leinsing will opine a POSITA would have been motivated to change the Cigarette Electronique to have a central and axial through-hole in view of the Cigarette Electronique Device and the knowledge and skill of a POSITA. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶

NJOY Exhibit 2008.0896
Juul v. NJOY
IPR2024-00161

392. For example, this modification simplifies the airflow passageway, and doing so would simply require that the batting material already present in the Cigarette Electronique have a cutout and tube through the middle, and would have several benefits. This modification greatly simplifies the device, and allows for a larger liquid storage within the cartridge.

Mr. Leinsing will further opine this modification would also improve the manufacturing of the device. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 393. For example, having a central through-hole for an airflow passageway like the proposed modification makes assembly of the solution holding medium easier, as for example, batting or absorbent material can be stuffed into the device around a tube, without needing to worry about leaving the gap between the batting material and the housing. This requires less precision in manufacturing and eliminates the need to have parts suspending the batting material within the housing for example.

Further, this modification would also allow the batting material to be larger within the same size housing, as it could more extend further in both the radial and longitudinal directions. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 394. For example, with the airflow proceeding through a tube in a through-hole in the middle of the batting material, there would no longer be a need to leave a gap between the batting material and the sidewall. This means that the liquid storage could occupy more radial space, and extend all the way to the inner edge of the housing, rather than stopping short to leave a gap. Though there would be a new gap in the middle of the liquid storage chamber, a POSITA would expect that the total volume of the new gap could be smaller than the total volume of the eliminated gap. For example, the airflow would be less turbulent and need to make fewer directional changes, so would flow more easily through a smaller total cross-sectional area. This modification also allows the batting material to extend further longitudinally,

NJOY Exhibit 2008.0897
Juul v. NJOY
IPR2024-00161

as it removes the need to have space for the airflow to return to the middle to exit the second aperture.

This modification also improves the airflow through the device, because there are fewer directional changes and obstacles for the air and vapor to pass on its way to the second aperture. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 395. For example, having the airflow passageway extend through a through-hole in the middle of the device eliminates the need for the air to change directions around obstacles such as the batting material. Having fewer directional changes and obstacles results in less suction being required by the user to draw air and vapor through the device, making it a more enjoyable experience. Having fewer directional changes and corners in the trajectory of the airflow also reduces the likelihood of condensation or only partially vaporized e-liquid collecting in corners within the device. The collection of liquid in corners of an airflow passageway could result in a sticky residue that could clog the airflow through the device.

This modification would also improve thermal insulation to the exterior of the device, something the prior art as a whole, and a POSITA in general would be concerned with. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 396. For example, without thermal insulation between the vapor and the shell of the housing, the housing could heat up. This could for example cause the housing of the device to burn a user after repeated use. As Xia ’610 explained, “[t]he purpose of the heat insulation layer is to avoid potential safety hazards caused by a high temperature of the heater 9.” JX-0596 (Xia ‘610) at JX-0596.11. Additionally, adding thermal insulation between the shell and the vapor can better control the temperature of the vapor. This is important so that, no matter external conditions, the vapor has more consistent characteristics. If, for example, the device was used in cold weather, without insulation between the shell and the vapor, there could be increased condensation of the vapor within the pathway. Vapor condensation

NJOY Exhibit 2008.0898
Juul v. NJOY
IPR2024-00161

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is undesirable because it reduces the vapor content of the air that the user receives, and also because it increases the risk of what is commonly referred to as "leakage" of liquid or undesirable ingestion of condensation droplets. For example, with increased condensation, the vapor condensate could be sucked by the user into their mouth, or following use of the device, could leak out of the mouthpiece and into a user's pocket for example. A POSITA would have understood that modifying the Cigarette Electronique Device to have the air flow through a central through-hole in the batting material would increase the thermal insulation between the shell and the vapor because the batting material itself would function as a thermal insulation barrier.

This modification would have had predictable results, and a POSITA making it would have had a reasonable expectation of success. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 397. For example, this modification is the result of a slight difference in the physical location of a gap for air to flow through that does not introduce any uncertainties as to the functionality of the overall device. For example, it was known in the art to use tubes or gaps located centrally and axially without any obstacles therein within cartridges, such as disclosed in numerous references including Wang '554 and Fang '044, so a POSITA would have understood that this was a viable and predictable way to design the device.

Additionally, in combining the Cigarette Electronique device with Wang '554 or Fang '044, this feature would have been obvious for the same reasons those references disclose or suggest this feature.

Complainant disagrees that the Cigarette Electronique device discloses this limitation for two reasons. First, Complainant asserts there are several elements that obstruct the airflow along the central longitudinal axis of the housing. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. F, ¶ 209. However, Complainant misinterpret the claim language, which only require the only the heating

NJOY Exhibit 2008.0899
Juul v. NJOY
IPR2024-00161

element obstructing a portion of the airflow through the airflow passageway along the central longitudinal axis of the housing.

Second, Complainant argues "a POSITA would understood that the airflow passageway does not extend in a straight path from the first aperture to the second aperture and there are numerous obstructions besides the heating element." *See* CX-2726C (Vallee Reb. Rpt.) at Appx. F, ¶¶ 211. However, as described in claim 1[j] *supra*, Mr. Leinsing will opine that the airflow passageway merely containing obstacles like those that NJOY asserts still enables only the heating element to obstruct a portion of the airflow through the airflow passageway along the central longitudinal axis of the housing". *See* Section IV.G.1.xiii.k (claim 1[j]) *supra*.

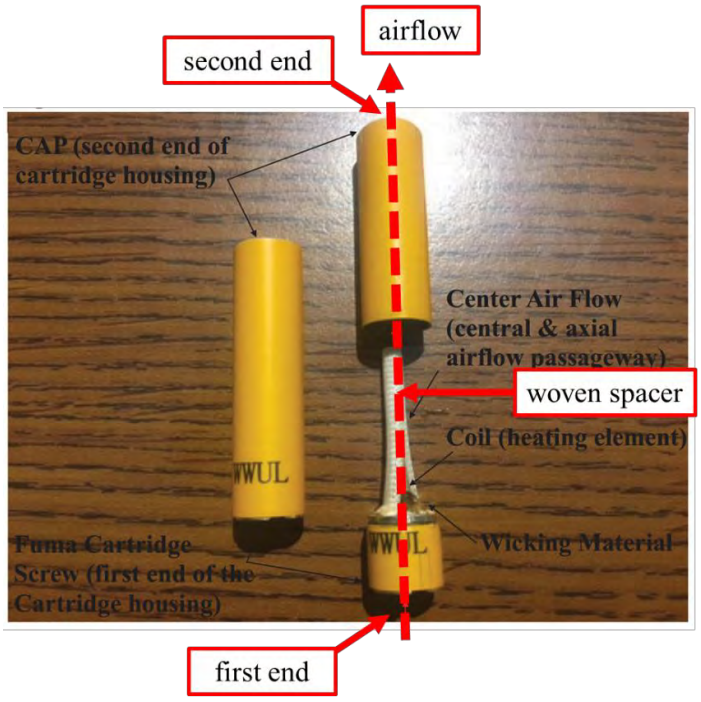
11. Fuma Prototype – '864 Patent, Claim 25[l]

The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 416-417; 296-298; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

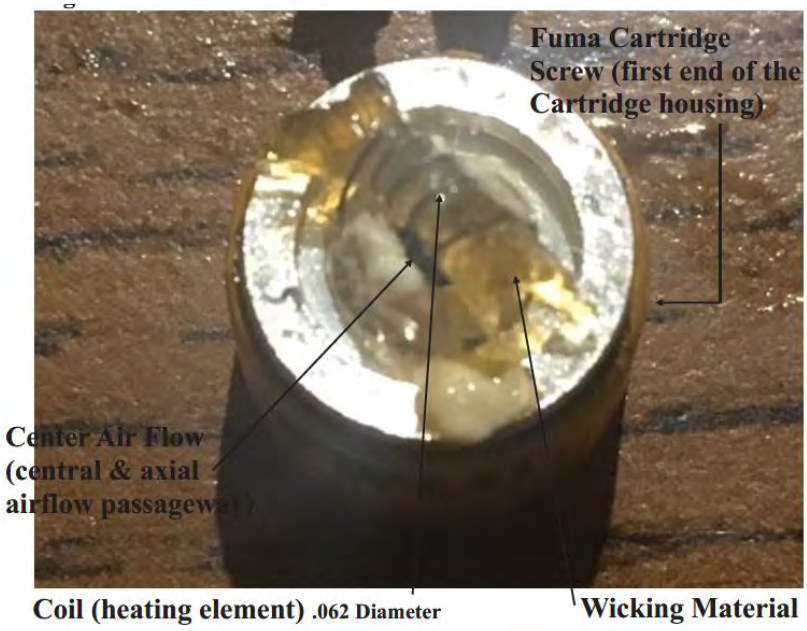
For example, as shown in the image below, only the heating element, including the heating coil and the wick, obstructs a portion of the airflow from the air inlet, through the woven spacer, to the air exit hole. Specifically, when the airflow enters the housing through the air inlet, it will flow around the heating coil and wick, converge after the heating coil, pass through the woven spacer, and reach the air exit hole. Under NJOY's apparent interpretation that the wick in the center of the heating coil is part of the heating element, only the heating element (i.e., the heating coil and the wick) obstructs a portion of the airflow the woven spacer along the central longitudinal axis of the housing.

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Juul v. NJOY
IPR2024-00161

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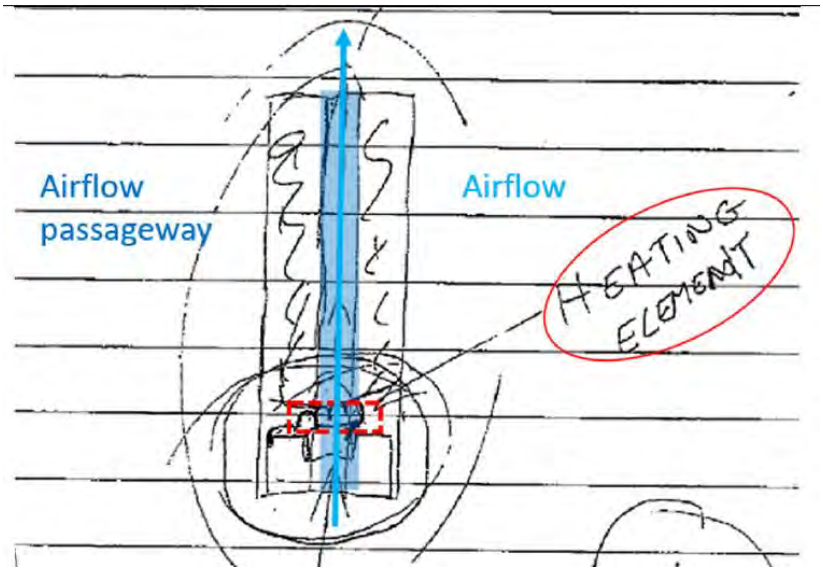


See CRTP Exhibit A at Fig. 6 (annotated in red).

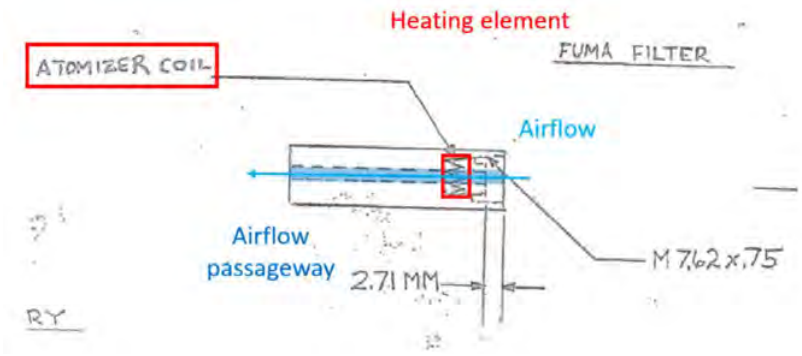


See CRTP Exhibit A at Fig. 14.

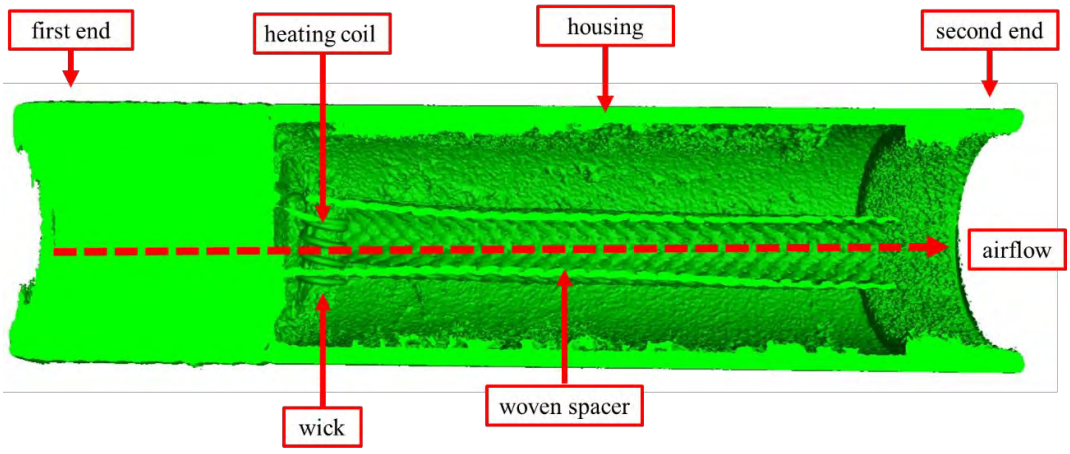
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See '864 Priority Chart at 25 (citing CRTP Attachment C).

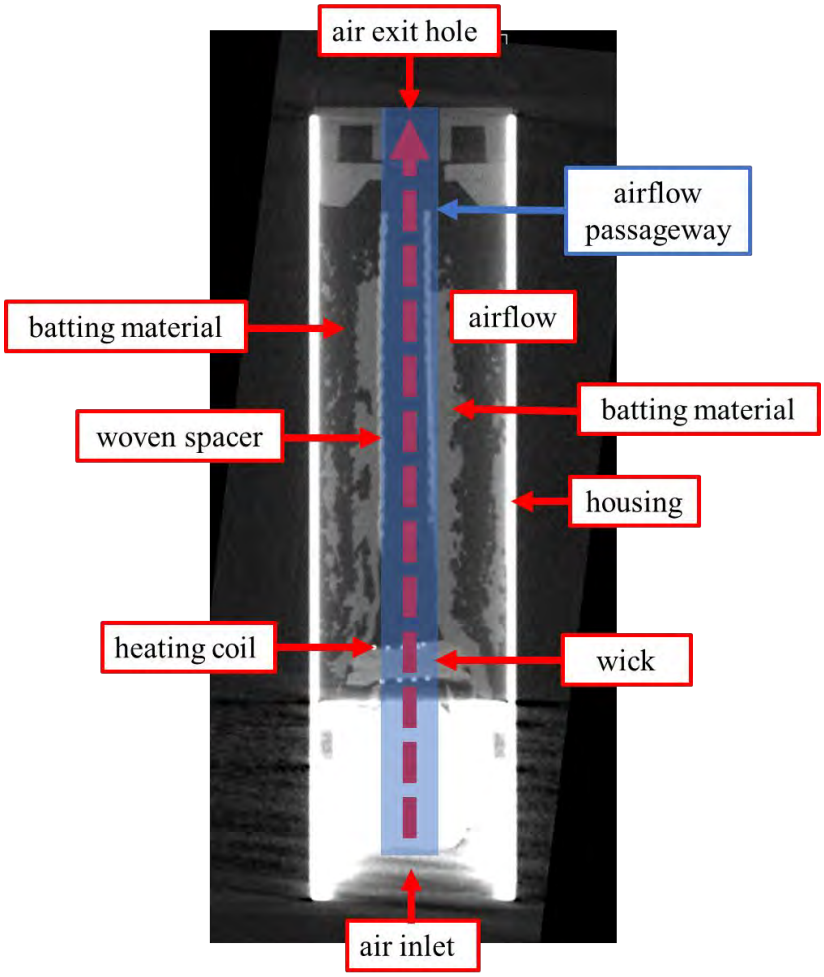


See '864 Priority Chart at 25 (citing CRTP Attachment E at FUMA-INSPECTION-0037).



[redacted]

See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.1 (annotated in red).



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.17 (annotated in red and blue).

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses this claim element. *See* Conley '864 Declaration at ¶5 (Dependent claim 50).

NJOY also admitted that the Fuma Prototype discloses this claim element. *See* '864 Priority Chart at 25-26.

NJOY Exhibit 2008.0903
Juul v. NJOY
IPR2024-00161

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c. ’864 Patent, claim 26: “[t]he cartridge of claim 25, further in combination with a power source adapted to be electrically coupled to the first end of the housing, the power source including a battery”

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 2 of the ’864 Patent.

iii. Lack of Written Description

As Mr. Leinsing will explain, each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the ’864 Patent is invalid for lack of written description as required by 35 U.S.C. § 112.

a. Airflow passageway

Each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the ’864 Patent recites the claim feature of an airflow passageway extending from a first aperture to a second aperture.

NJOY or its expert, Dr. Vallee, may assert that the claimed “airflow passageway” need not comprise a physical structure that begins at the first aperture and extends all the way to the second aperture, forming a passageway of airflow between those two apertures. *See e.g.*, CX-2726C (Vallee Rebuttal Report) at ¶ 438. For instance, they may assert that the airflow passageway can share its physical structure with the housing. *See* CX-2157C (Vallee Opening Report) at ¶ 1000.

Mr. Leinsing will explain that each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the ’864 Patent is invalid for lack of written description for the claim feature of an airflow passageway extending from a first aperture to a second aperture. *See* JX-0632C (Leinsing Opening Report) at ¶¶ 657-659. The ’864 Patent only describes the airflow passageway as a physical structure, separate from the housing, which begins at the first central aperture and extends all the way to the second central aperture, forming a passageway for airflow between those two apertures. *See* JX-0001 (’864 Patent) at Fig. 1 (depicting airflow passageway 134 as its own distinct structure); Figs. 2-3 (depicting airflow passageway using a dotted line to show its own distinct

NJOY Exhibit 2008.0904
Juul v. NJOY
IPR2024-00161

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structure); 6:21-26 (describing that the airflow passageway 214 has a wall); 7:2-14 (describing that the airflow passageway has a wall, the heating element can wrap around the airflow passageway, the airflow passageway can have apertures). The '864 Patent provides no disclosure of a passageway that does not define a physical passageway of airflow between the first and second aperture that would lead a POSITA to conclude that the inventors of the Asserted Patents were in possession of such a device or the entire scope of the claimed invention.

NJOY and its expert, Dr. Vallee, will be unable to prove that there is written description support for an airflow passageway that does not have a physical structure that begins at the first aperture and extends all the way to the second aperture, forming a passageway of airflow between those two apertures. For instance, Dr. Vallee will be unable to show that "a POSITA would have understood that there is no physical structure to the airflow passageway adjacent to the gap 228." CX-2726C (Vallee Rebuttal Report) at ¶ 438. This is inaccurate as the airflow passageway can have apertures in communication with gap 228 as explained by Mr. Leinsing and air can be drawn from the gap into the airflow passageway. *See* CX-0321 (2024-04-07 Leinsing Depo. Tr.) at 77:2-78:13. While Dr. Vallee may be able to show that Mr. Leinsing identifies an airflow passageway in the Fuma prototype that continues beyond the woven tube physical structure, (*see* CX-2726C (Vallee Rebuttal Report) at ¶ 439 (citing JX-0641C (Leinsing Opening Report, Appendix H) at ¶ 30))), it is misplaced as Mr. Leinsing is applying NJOY's interpretation of the airflow passageway (*see* JX-0641C (Leinsing Opening Report, Appendix H) at ¶ 29 ("The Fuma Prototype discloses [the claim limitation] under NJOY's apparent interpretation of the claim limitation and NJOY's construction.")).

b. Airflow path defined centrally and axially requires an airflow passageway defined centrally and axially

Independent claim 9 of the '864 Patent recites:

NJOY Exhibit 2008.0905
Juul v. NJOY
IPR2024-00161

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> "a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing."

NJOY or its expert, Dr. Vallee, may assert that independent claim 9 of the '864 Patent and its recited proximate airflow path portions proximate the first and second apertures defined substantially centrally and axially with respect to the central longitudinal axis of the housing do not require an airflow passageway proximate the first and second apertures defined substantially centrally and axially with respect to the central longitudinal axis of the housing. *See* CX-2157C (Vallee Opening Report) at ¶¶ 1017-1018; *see also* CX-2726C (Vallee Rebuttal Report) at ¶¶ 446-447. That is, under NJOY and Dr. Vallee's interpretation, this claim limitation is met even when there is no airflow passageway for the airflow path proximate apertures.

If NJOY is correct, Mr. Leinsing will explain that independent claim 9, which recites an airflow path is invalid for lack of written description because the specification does not describe such airflow paths without corresponding airflow passageways extending all the way from the first aperture to the second aperture to contain the airflow and ensure it is central and axial. JX-0632C (Leinsing Opening Report) at ¶¶ 660-662. Specifically, all of the disclosed embodiments of the '864 Patent disclose the use of a central and axial passageway, extending all the way from the first aperture to the second aperture, which defines a central/axial airflow path at least proximate to the first/second apertures. *See* JX-0001 ('864 Patent) at Figs. 1-3, 4:35-37, 6:21-24. The '864 Patent fails to provide disclosure of any other structure that can constrain the airflow paths proximate apertures to being central and axial with respect to the longitudinal axis of the housing. The airflow passageway that constrains the airflow path proximate apertures is only disclosed as extending throughout the entirety of the housing from the first aperture to the second aperture. *Id.* The airflow passageway is never described as only being proximate the first/second apertures and not through

NJOY Exhibit 2008.0906
Juul v. NJOY
IPR2024-00161

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the entirety of the housing from the first aperture to the second aperture. Nor would a POSITA understand from the '864 Patent disclosures that the inventors were in possession of such a device.

NJOY and Dr. Vallee will be unable to demonstrate that the '864 Patent has written description support for airflow paths proximate the first and second apertures that do not require an airflow passageway proximate the first/second apertures and defined substantially centrally and axially with respect to the central longitudinal axis of the housing. Dr. Vallee opines that the disclosure of airflow in the Asserted Patents is "not limited to an airflow passageway, let alone a central and axial airflow passageway." CX-2726C (Vallee Rebuttal Report) at ¶ 447. Specifically, Dr. Vallee submits that the Asserted Patents disclose (a) a gap 228 used to mix air and vaporized liquid, (b) apertures within the airflow passageway 214, (c) multiple passageways described in 8:56-60, and (d) Figure 4 not depicting a specific passageway. *See* CX-2157C (Vallee Opening Report) at ¶ 671. *Id.* However, the claimed portions of the airflow path proximate apertures requires the portions of the airflow path to be centrally and axially defined with respect to the central longitudinal axis of the housing. *See* JX-0001 ('864 Patent) at claim 9. Gap 228 and apertures that extend radially outward from the airflow passageway 214 are not central or axially defined with respect to the central longitudinal axis of the housing. *See* JX-0001 ('864 Patent) at Figure 2. As to the multiple passageways described in 8:56-60, these are described as "airflow passageways" and, thus, fails to describe an airflow path that is separate and distinct from the airflow passageway. As to Figure 4 not depicting a specific passageway, it also does not show an airflow path, much less an airflow path that is separate and distinct from the airflow passageway.

c. Interior and solution holding medium

NJOY and Dr. Vallee appear to argue that the claimed "solution-holding medium" need not be distinct from the separately-claimed "interior" of the housing. *See* CX-2726C (Vallee Rebuttal Report) at ¶ 573. As Mr. Leinsing will explain, if they are correct, each of claims 1, 2, 9, 10, 12,

NJOY Exhibit 2008.0907
Juul v. NJOY
IPR2024-00161

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13, 15, 16, 20, 25, and 26 of the '864 Patent is invalid for a lack of written description because it does not describe a solution-holding medium that is merely the same as the "interior" of the housing; rather, it is only ever disclosed as a distinct item. *See* JX-0632C (Leinsing Opening Report) at ¶ 668.

Each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25 and 26 of the '864 Patent separately and distinctly recites an "interior" and a "solution holding medium." *See e.g.*, JX-0001 ('864 Patent) at 17:21-22 (claim 1 reciting "a housing having an interior and a solution holding medium"). Similarly, the '864 Patent only teaches and discloses structures of the solution holding medium that are separate and distinct from the interior of the housing. *See e.g.*, JX-0001 ('864 Patent) at 5:51-54 ("Additionally, as described above, the solution 128 may be placed in an absorbent material, such as cotton, wool, polyester, a batting material, or some other suitable absorbent material."); *id*. at 5:65-6:5 ("Now turning to FIG. 2, a cutaway diagram of an exemplary cartridge 200 for utilization in an electronic personal vaporizer is illustrated. The cartridge 200 comprises a housing 202, which is constructed of a non-metallic material, such as a polymer, wood, ceramic, and/or any combination thereof. The housing 202 comprises an absorbent material 204 that has a liquid solution absorbed therein in a measured dose."); *id*. at 9:34-36 ("At 606, a heating element and liquid solution (e.g., placed in an absorbent material) are caused to be included in the housing."). Nowhere do the applicants of the '864 Patent provide any disclosure of a cartridge device containing a solution holding medium that is not a separate and distinct component from the interior of the housing.

NJOY and Dr. Vallee will be unable to show that the '864 Patent provides written description support for the interior of the housing and the solution holding medium sharing the same structure. For instance, Dr. Vallee may submit that figure 2 depicts the housing and the

NJOY Exhibit 2008.0908
Juul v. NJOY
IPR2024-00161

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solution holding medium sharing a border. *See* CX-2726C (Vallee Rebuttal Report) at ¶ 482. However, figure 2 is not a detailed drawing as to the specific configuration of the internal structures of the components. Further, Mr. Leinsing testified that drawings of elements sharing a line does not mean that they share the same structure. *See* CX-0321 (2024-04-07 Leinsing Depo. Tr.) at 173:18-174:7.

As a result, these claims are invalid for lack of the required written description because the specification would not lead a POSITA to understand that the applicants possessed that entire scope of the claimed invention—the claims would extend beyond the described purported inventions to more broadly ensnare devices not described in the specification, including devices where the solution holding medium that is not a separate and distinct component from the interior of the housing.

d. In [an/the] Airflow: vaporization and oral provisioning

Each asserted independent claim of the ’881 and ’864 Patents requires that something occurs or is located “in” a claimed airflow:

> “an airflow through the housing from the first aperture to the second aperture … the heating element configured to vaporize at least ***a portion of the solution*** for ***oral provision to an individual in the airflow”*** in claims 1 and 9 of the ’864 Patent (JX-0001 at 17:29-30, 17:35-37, 18:60-61, 18:66-19:1); and
>
> “an airflow through the housing … the heating element being configured to vaporize at least ***the portion of the solution*** drawn to the heating element for ***oral provision to an individual in the airflow”*** in claim 25 of the ’864 Patent (JX-0001 at 20:56-58, 20:65-21:1).

Importantly, Dr. Vallee testified that the plain and ordinary meaning of these claim terms require (1) a portion of the solution to be present in the airflow, (2) vaporization in the airflow, and (3) oral provision to an individual in the airflow. *See* RX-1013 (2023-12-21 Vallee Depo. Tr.) at 136:16-138:5, 150:23-154:3.

NJOY Exhibit 2008.0909
Juul v. NJOY
IPR2024-00161

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Under this interpretation as Mr. Leinsing will explain, each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the '864 Patent is invalid for a lack of written description for the claim features listed above. *See* JX-0632C (Leinsing Opening Report) at ¶¶ 682-683; *see also id.* at ¶¶ 103, 147, 158-159. The '864 Patent consistently and only describes the vaporized solution being provided to an individual in an airflow from the second aperture. *See e.g.*, Figs. 1-3. There is no disclosure in the '864 Patent that suggests that vaporized solution is provided orally to an individual between the first and second apertures that would lead a POSITA to conclude that the inventors were in possession of such a device. Thus, each of the claims of the '864 Patent are invalid as failing to meet the written description requirement.

e. Heating Element

Each asserted independent claim of the '881 and '864 Patents recites a heating element configured to vaporize a portion of solution:

> "the heating element being configured to vaporize at least a portion of the solution for oral provision to an individual in the airflow" in claims 1 and 9 of the '864 Patent; and
>
> "the heating element being configured to vaporize at least the portion of the solution drawn to the heating element for oral provision to an individual in the airflow" in claim 25 of the '864 Patent.

While the ALJ has "concluded that 'heating element' in the '881 and '864 patent claims is not subject to § 112, ¶ 6," the ALJ did not construe the term "heating element." Order No. 36 (Construing Disputed Claim Terms) at 50.

NJOY and Dr. Vallee will be unable to show that the '864 Patent has written description support for a heating element wrapped around a wick. *See* CX-2726C (Vallee Rebuttal Report) at ¶¶ 589, 714. Dr. Vallee opines that, because the '864 Patent discloses that "the heating element can comprise a wick, which a POSITA would understand to include a coil containing a wick passing through its windings," the heating element can be wrapped around a wick. *Id.* (citing '864 Patent

NJOY Exhibit 2008.0910
Juul v. NJOY
IPR2024-00161

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at 5:54-55; 6:46-49; 7:9). But that statement says that the heating element comprises a wick, *i.e.*, the wick is part of the heating element and thus the heating element performs the wicking action. It does not disclose a two-piece arrangement, with a heating element and a separate wick.

Under such an interpretation, Mr. Leinsing will explain that each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the '881 Patent is invalid for lack of written description as the '864 Patent does not provide written description for a heating element as defined by NJOY. *See* RX-0632C (Leinsing Opening Report) at ¶¶ 672, 677. The '864 Patent "distinguishes between a separate, non-heating wick that brings solution to a heating means on the one hand, and a heating element that does so itself on the other hand." RX-0632C (Leinsing Opening Report) at ¶ 75.

Further, in connection with Figure 2, which NJOY and Dr. Vallee repeatedly relies on to show various claim features (*see e.g.,* CX-2726C (Vallee Rebuttal Report) at ¶¶ 424, 430, 481), the '864 Patent only ever discloses that the heating element itself as wicking the solution (JX-0004 ('881 Patent) at 6:46-49). That is, the heating element is a one-piece heating element that both wicks and heats the portion of solution. Mr. Leinsing will explain that the only disclosure is a one-part heating element that "comprises" a wick to enable vaporization but that the claims do not cover a two-part heating element where one of the two parts does not generate heat, *i.e.* a heating element and a separate non-heating wick. CX-0321 (2024-04-07 Leinsing Depo. Tr.) at 86:17-87:2.

As Mr. Leinsing will explain, during prosecution, the inventors argued that a configuration where the heating element is in the shape of a coil where a wick passes through the windings of the coil is not part of their invention. Specifically, during prosecution of U.S. Patent Application 14/510,955 (a parent application that later issued as U.S. Patent. No. 9,532,604), the applicants argued that U.S. Patent Application Publication No. US20090272379A1 ("Thorens") does not

NJOY Exhibit 2008.0911
Juul v. NJOY
IPR2024-00161

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disclose the claimed heating element that allows airflow to pass on both transverse sides of the heating element— rather, "Thorens teaches a heating coil that surrounds a wick" and thus "Thorens' heating element is not configured to enable air to pass on both transverse sides thereof." JX-0521 (Prosecution History of the '955 application ('604 Patent)) at JX-0521C.125-126. As Mr. Leinsing will explain, as a result, a POSITA therefore would not know how to make the claimed device, but in any event, a heating coil surrounding a wick does not satisfy the claims. Further, claim 7 of the same applicant response recited "wherein the heating element comprises a wicking material to attract the solution from the solution holding medium to the heating element." *Id.* In connection with claim 7, applicants' argued that "while Thorens teaches a wick in proximity to its heating element, *the heating element of Thorens does not include and form of wicking material* which attracts the solution." *Id*. (emphasis added). In view of arguments made in connection with claim 7, it is clear that the arguments made in connection with claim 5 were directed to the heating element not having a separate wick.

iv. Lack of Enablement

As Mr. Leinsing will explain, each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the '864 Patent is invalid for lack of enablement as required by 35 U.S.C. § 112.

a. Airflow passageway

Each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the '864 Patent recites the claim feature of an airflow passageway extending from a first aperture to a second aperture.

NJOY or its expert, Dr. Vallee, may assert that the claimed "airflow passageway" need not comprise a physical structure that begins at the first aperture and extends all the way to the second aperture, forming a passageway of airflow between those two apertures.[34] *See e.g.*, CX-2726C

[34] Under NJOY's and Dr. Vallee's assertion, diversions in the airflow passageway are permissible. Because the '864 Patent does not provide any disclosure of a passageway that does

NJOY Exhibit 2008.0912
Juul v. NJOY
IPR2024-00161

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(Vallee Rebuttal Report) at ¶ 438. For instance, they may assert that the airflow passageway can share its physical structure with the housing. *See* CX-2157C (Vallee Opening Report) at ¶ 1000.

Mr. Leinsing will explain that each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the '864 Patent is invalid for lack of enablement for the claim feature of an airflow passageway extending from a first aperture to a second aperture. *See* JX-0632C (Leinsing Opening Report) at ¶ 686. The '864 Patent only describes the airflow passageway as a physical structure, separate from the housing, which begins at the first central aperture and extends all the way to the second central aperture, forming a passageway for airflow between those two apertures. *See* JX-0001 ('864 Patent) at Fig. 1 (depicting airflow passageway 134 as its own distinct structure); Figs. 2-3 (depicting airflow passageway using a dotted line to show its own distinct structure); 6:21-26 (describing that the airflow passageway 214 has a wall); 7:2-14 (describing that the airflow passageway has a wall, the heating element can wrap around the airflow passageway, the airflow passageway can have apertures). The '864 Patent provides no disclosure of a passageway that does not define a physical passageway of airflow between the first and second aperture that would enable a POSITA to make and use such a device without undue experimentation.

NJOY and its expert, Dr. Vallee, will be unable to prove that the '864 Patent enables an airflow passageway that does not have a physical structure that begins at the first aperture and extends all the way to the second aperture, forming a passageway of airflow between those two apertures. For instance, Dr. Vallee will be unable to show that "a POSITA would have understood that there is no physical structure to the airflow passageway adjacent to the gap 228." CX-2726C (Vallee Rebuttal Report) at ¶ 531. This is inaccurate as the airflow passageway can have apertures

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not define a physical passageway of airflow between the first and second aperture, a POSITA would conclude that the inventors of the Asserted Patents were not in possession of such a device or the entire scope of the claimed invention.

NJOY Exhibit 2008.0913
Juul v. NJOY
IPR2024-00161

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in communication with gap 228 as explained by Mr. Leinsing and air can be drawn from the gap into the airflow passageway. *See* CX-0321 (2024-04-07 Leinsing Depo. Tr.) at 77:2-78:13. While Dr. Vallee may be able to show that Mr. Leinsing identifies an airflow passageway in the Fuma prototype that continues beyond the woven tube physical structure, (*see* CX-2726C (Vallee Rebuttal Report) at ¶ 532 (citing JX-0641C (Leinsing Opening Report, Appendix H) at ¶ 30)), it is misplaced as Mr. Leinsing is applying NJOY's interpretation of the airflow passageway (*see* JX-0641C (Leinsing Opening Report, Appendix H) at ¶ 29 ("The Fuma Prototype discloses [the claim limitation] under NJOY's apparent interpretation of the claim limitation and NJOY's construction.")).

b. Airflow path defined centrally and axially requires an airflow passageway defined centrally and axially

Independent claim 9 of the '864 Patent recites:

> a first portion of the airflow path proximate the first aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing, and a second portion of the airflow path proximate to the second aperture being defined substantially centrally and axially with respect to the central longitudinal axis of the housing.

NJOY or its expert, Dr. Vallee, may assert that independent claim 9 of the '864 Patent and its recited proximate airflow path portions do not require an airflow passageway proximate the first/second apertures and defined substantially centrally and axially with respect to the central longitudinal axis of the housing. *See* CX-2157C (Vallee Opening Report) at ¶¶ 1017-1018; *see also* CX-2726C (Vallee Rebuttal Report) at ¶¶ 446-447. That is, under NJOY and Dr. Vallee's interpretation, this claim limitation is met even when there is no airflow passageway for the airflow path proximate apertures.

If NJOY is correct, Mr. Leinsing will explain that independent claim 9, which recites an airflow path is invalid for lack of enablement because the specification does not describe such

NJOY Exhibit 2008.0914
Juul v. NJOY
IPR2024-00161

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airflow paths without corresponding airflow passageways extending all the way from the first aperture to the second aperture to contain the airflow and ensure it is central and axial. Without an airflow passageway extending all the way from the first aperture to the second aperture, the specification would not enable a POSITA to understand how to make and such a device without undue experimentation. *See* JX-0632C (Leinsing Opening Report) at ¶¶ 687-689. Specifically, all of the disclosed embodiments of the '864 Patent disclose the use of a central and axial passageway, extending all the way from the first aperture to the second aperture, which defines a central/axial airflow path at least proximate to the first/second apertures. *See* JX-0001 ('864 Patent) at Figs. 1-3, 4:35-37, 6:21-24. The '864 Patent fails to provide disclosure of any other structure that can constrain the airflow paths proximate apertures to being central and axial with respect to the longitudinal axis of the housing. The airflow passageway that constrains the airflow path proximate apertures is only disclosed as extending throughout the entirety of the housing from the first aperture to the second aperture. *Id.* The airflow passageway is never described as only being proximate the first/second apertures and not through the entirety of the housing from the first aperture to the second aperture. Nor would a POSITA understand how to make and use such a device without undue experimentation.

NJOY and Dr. Vallee will be unable to demonstrate that the '864 Patent enables proximate airflow paths that do not require an airflow passageway proximate the first/second apertures and defined substantially centrally and axially with respect to the central longitudinal axis of the housing. Dr. Vallee opines that the disclosure of airflow in the Asserted Patents is "not limited to an airflow passageway, let alone a central and axial airflow passageway." CX-2726C (Vallee Rebuttal Report) at ¶ 539. Specifically, Dr. Vallee submits that the Asserted Patents disclose (a) a gap 228 used to mix air and vaporized liquid, (b) apertures within the airflow passageway 214, (c)

NJOY Exhibit 2008.0915
Juul v. NJOY
IPR2024-00161

multiple passageways described in 8:56-60, and (d) Figure 4 not depicting a specific passageway. *See* CX-2157C (Vallee Opening Report) at ¶ 671. *Id.* However, the claimed portions of the airflow path requires the portions of the airflow path to be centrally and axially defined with respect to the central longitudinal axis of the housing. *See* JX-0001 ('864 Patent) at claim 9. Gap 228 and apertures that extend radially outward from the airflow passageway 214 are not central or axially defined with respect to the central longitudinal axis of the housing. *See* JX-0001 ('864 Patent) at Figure 2. As to the multiple passageways described in 8:56-60, these are described as "airflow passageways" and, thus, fails to describe an airflow path that is separate and distinct from the airflow passageway. As to Figure 4 not depicting a specific passageway, it also does not show an airflow path, much less an airflow path that is separate and distinct from the airflow passageway.

c. Solution holding medium, reservoir

Each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the '864 Patent recites a "solution holding medium" either itself or in a claim from which it depends. As Mr. Leinsing will explain, each of these claims is invalid for lack of enablement as required by 35 U.S.C. § 112. *See* JX-0632C (Leinsing Opening Report) at ¶¶ 691-693.

The ALJ has construed "solution holding medium" to have its "plain and ordinary meaning, that is, a location, container, or mechanism to hold the solution." Order No. 36 (Construing Disputed Claim Terms) at 50. In support, the ALJ stated that "[t]he specification discloses that 'the solution can be suspended in an absorbent material, capsule, or reservoir, wherein such devices may act as a holding medium for the solution 128.'" *Id.*, at 50 (citing '881 Patent at 4:6-9).

The ALJ has also construed "solution holding medium reservoir adapted to hold a solution" to have its "plain and ordinary meaning, which … is a reservoir to hold the solution." *Id.*, at 53. The ALJ has found that claim term "'reservoir' is a structural, not function term, connoting a class

NJOY Exhibit 2008.0916
Juul v. NJOY
IPR2024-00161

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of structures within the context of vaporizer devices." *Id*. Further, the ALJ that the specification confirms that the reservoir is a device. *See id*., at 52.

As Mr. Leinsing will explain, the '864 Patent does not provide the required enabling disclosure for the claimed solution holding medium because they do not disclose sufficient definite and adequate corresponding reservoir structure for performing the recited functions of the claimed solution holding medium. A POSITA reading the '864 Patent would not know how to make or use a reservoir for use in the claimed device without undue experimentation. The word "reservoir" appears only once in the '864 Patent. *See* '864 Patent, at 4:7-11 ("solution can be suspended in an absorbent material, capsule, or reservoir, wherein such devices may act as the holding medium for the solution 128").

As Mr. Leinsing will explain, the '864 Patent does not provide the required enabling disclosure for the "container" that the ALJ has stated is part of the claim term. Especially at the time of the effective fling dates of the asserted patents as alleged by NJOY (July 2010), a POSITA reading the '864 Patent would not know how to make or use a container as a solution-holding medium without undue experimentation. To the extent the specification's discussion of a "reservoir" as a solution-holding medium is the rationale for the inclusion of a "container" in the claim scope, "reservoir" appears only once in the '881 Patent. *See* '881 Patent, at 4:7-9 ("solution can be suspended in an absorbent material, capsule, or reservoir, wherein such devices may act as the holding medium for the solution 128").

As Mr. Leinsing will explain, in light of '864 Patent's failure to explain what is meant by "reservoir," a POSITA would understand the term to refer to some means for holding a liquid with countless potential ways to hold a liquid and would not understand the term to connote any particular structure or features outside of holding liquid. A POSITA, therefore, would have no

NJOY Exhibit 2008.0917
Juul v. NJOY
IPR2024-00161

understanding what structures would work as intended in the claimed invention to hold liquid, and would have to undergo substantial and undue experimentation of structures not described in the specification to create an e-cigarette device with a reservoir. Thus, the claim limitation "solution holding medium reservoir," as well as the limitation "solution holding medium" are not sufficiently enabled by the disclosure of the Asserted Patents.

NJOY and Dr. Vallee will be unable to show that the '864 Patent enables a solution holding medium. For instance, despite Dr. Vallee opining that "it was well known in the field of e-cigarettes that a reservoir can be a solution holding medium," the '864 Patent nonetheless fails to provide any meaningful disclosure as to the structure of the reservoir. CX-2726C (Vallee Rebuttal Report) at ¶ 557. As Mr. Leinsing will explain, there were multiple generations of e-cigarettes where the first generation included cig-a-like devices, the second generation including tank-type devices, and the third generation being modular devices. *See* CX-0321 (2024-04-07 Leinsing Depo. Tr.) at 15:25-16:8. Dr. Vallee appears to attempt to read a tank onto the reservoir. *See* CX-2157C (Vallee Opening Report) at ¶ 708. Mr. Leinsing will explain that nothing in the '864 Patent provides any disclosure of a tank and a POSITA, reading the Asserted Patents, would not know how to make or use a tank for use in a cartridge without undue experimentation. Particularly, the first generation of e-cigarettes had leakage issues for tanks. *See* CX-0321 (2024-04-07 Leinsing Depo. Tr.) at 80:18-82:14; 174:13-175:9. And the '881 Patent fails to provide any enabling disclosure on how to provide a tank without leakage. This is unsurprising given that Mr. Hillenbrandt, an inventor of the Asserted Patents, testified that he did not disclose or contemplate a mediumless tank as the holding medium. *See* RX-1114C (2024-02-13 Hillenbrandt Depo. Tr.) at 258:25-259:3 ("Q. And you didn't disclose or contemplate using a mediumless tank as the holding medium; correct? … A. I don't believe so.").

NJOY Exhibit 2008.0918
Juul v. NJOY
IPR2024-00161

[redacted]

d. Interior and solution holding medium

NJOY and Dr. Vallee appear to argue that the claimed "solution-holding medium" need not be distinct from the separately-claimed "interior" of the housing. *See* CX-2726C (Vallee Rebuttal Report) at ¶ 573. As Mr. Leinsing will explain, if they are correct, each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the '864 Patent is invalid for a lack of enablement because it does not enable a POSITA to make and use such a device without undue experimentation. *See* JX-0632C (Leinsing Opening Report) at ¶ 695.

Each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the '864 Patent separately and distinctly recites an "interior" and a "solution holding medium." *See e.g.*, JX-0001 ('864 Patent) at claim 1. Similarly, the '864 Patent only teaches and discloses structures of the solution holding medium that are separate and distinct from the interior of the housing. *See e.g.*, JX-0001 ('864 Patent) at 5:51-54; 5:65-6:5; 9:34-36. Nowhere do the applicants of the '864 Patent provide any disclosure of a cartridge device containing a solution holding medium that is not a separate and distinct component from the interior of the housing that would enable a POSITA to make and use such a device without undue experimentation.

e. Airflow passing both transverse sides of heating element

As Mr. Leinsing will explain, each of the claims 25 and 26 of the '864 Patent is invalid as it requires airflow to pass on transverse sides of the heating element and the '864 Patent does not enable such a claim feature. *See* JX-0632C (Leinsing Opening Report) at ¶ 699.

NJOY and Dr. Vallee may contend that the scope of the Asserted Patent claims cover heating elements in the shape of a coil, where a wick passes through the windings of the coil. *See* CX-2157C (Vallee Opening Report) at ¶ 714. But during prosecution, the inventors stated that such a configuration does not disclose this claim limitation. During prosecution of U.S. Patent Application 14/510,955 (a parent application that later issued as U.S. Patent. No. 9,532,604), the

NJOY Exhibit 2008.0919
Juul v. NJOY
IPR2024-00161

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applicants argued that U.S. Patent Application Publication No. US20090272379A1 ("Thorens") does not disclose the claimed heating element that allows airflow to pass on both transverse sides of the heating element— rather, "Thorens teaches a heating coil that surrounds a wick" and thus "Thorens' heating element is not configured to enable air to pass on both transverse sides thereof." JX-0521 (Prosecution History of the '955 application ('604 Patent)) at JX-0521C.125-126. As Mr. Leinsing will explain, as a result, a POSITA therefore would not know how to make the claimed device, but in any event, a heating coil surrounding a wick does not satisfy the claims.

NJOY and Dr. Vallee will be unable to show that the '864 Patent enables a wick passing through the windings of a coil. *See* CX-2726C (Vallee Rebuttal Report) at ¶ 589. Dr. Vallee opines that, because the '864 Patent disclose that "the heating element can comprise a wick, which a POSITA would understand to include a coil containing a wick passing through its windings." *Id*. (citing '864 Patent at 5:54-55; 6:46-49; 7:9). However, Mr. Leinsing will explain that the only disclosure is a one-part heating element that "comprises" a wick to enable vaporization but that the claims do not cover a two-part heating element, *i.e.* a heating element and a separate wick. CX-0321 (2024-04-07 Leinsing Depo. Tr.) at 86:17-87:2; *see also* JX-0632C (Leinsing Opening Report) at ¶ 75. Further, while the '864 Patent may disclose that "[a] wicking material may be used to in order to channel the liquid or gel to the heating element," this again does not disclose a wick passing through the windings of the heating element. JX-0001 ('864 Patent) at 5:54-55.

NJOY and Dr. Vallee will also be unable to show that the prosecution history discussed above is inapplicable. Dr. Vallee opines that:

> the applicants' basis for distinguishing Thorens was not that it "Thorens teaches a heating coil that surrounds a wick" (this is just a description of Thorens), but rather that (1) "Thorens' heating coil does not extend transversely in an axially central passageway through a housing" and (2) "Thorens' heating element is not configured to enable air to pass on both transverse sides thereof."

NJOY Exhibit 2008.0920
Juul v. NJOY
IPR2024-00161

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CX-2726C (Vallee Rebuttal Report) at ¶ 592. However, as will be explained by Mr. Leinsing, Dr. Vallee admits that Thorens discloses a heating coil that surrounds a wick and that this disclosure was part of applicants' argument relating to claim 5 distinguishing from Thornes. Further, claim 7 of the same applicant response recited "wherein the heating element comprises a wicking material to attract the solution from the solution holding medium to the heating element." JX-0521 (Prosecution History of the '955 application ('604 Patent)) at JX-0521C.125-126. In connection with claim 7, applicants' argued that "while Thorens teaches a wick in proximity to its heating element, the heating element of Thorens does not include and form of wicking material which attracts the solution." *Id*. In view of arguments made in connection with claim 7, it is clear that the arguments made in connection with claim 5 were directed to the heating element not having a separate wick.

f. In [an/the] Airflow: vaporization and oral provisioning

Each asserted independent claim of the '881 and '864 Patents requires that something occurs or is located "in" a claimed airflow:

> "an airflow through the housing from the first aperture to the second aperture … the heating element configured to vaporize at least ***a portion of the solution*** for ***oral provision to an individual in the airflow"*** in claims 1 and 9 of the '864 Patent (JX-0001 at 17:29-30, 17:35-37, 18:60-61, 18:66-19:1); and
>
> "an airflow through the housing … the heating element being configured to vaporize at least ***the portion of the solution*** drawn to the heating element for ***oral provision to an individual in the airflow"*** in claim 25 of the '864 Patent (JX-0001 at 20:56-58, 20:65-21:1).

Importantly, Dr. Vallee testified that the plain and ordinary meaning of these claim terms require (1) a portion of the solution to be present in the airflow, (2) vaporization in the airflow, and (3) oral provision to an individual in the airflow. *See* RX-1013 (2023-12-21 Vallee Depo. Tr.) at 136:16-138:5, 150:23-154:3.

NJOY Exhibit 2008.0921
Juul v. NJOY
IPR2024-00161

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Under this interpretation as Mr. Leinsing will explain, each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the '864 Patent is invalid for a lack of enablement for the claim features listed above. *See* JX-0632C (Leinsing Opening Report) at ¶ 701; *see also See* JX-0632C (Leinsing Opening Report) at ¶¶ 103, 147, 158-159, 682-683. The '864 Patent consistently and only describes the vaporized solution being provided to an individual in an airflow from the second aperture. *See* JX-0001 ('864 Patent) at Figs. 1-3. There is no disclosure in the '864 Patent that that would enable a POSITA to make or use a device in which vaporized solution is provided orally to an individual between the first and second apertures. Thus, each of the claims of the '864 Patent are invalid as non-enabled.

Under Dr. Vallee's interpretation as Mr. Leinsing will explain, each of claims 1, 16, 18, 19, and 26 of the '881 Patent is invalid for a lack of enablement for the claim features listed above. *See* JX-0632C (Leinsing Opening Report) at ¶¶ 103, 147, 158-159, 682-683; *see also* CX-1031C (Leinsing Rebuttal Report) at ¶¶ 145-156. The '881 Patent consistently and only describes that vaporization of the portion of the solution occurs in the airflow between the first and second apertures. *See* JX-0004 ('881 Patent) at Figs. 1-3. There is no disclosure in the '881 Patent that suggests that vaporization of the portion of the solution occurs in an airflow from the second aperture that would lead a POSITA to make and use such a device without undue experimentation. Thus, each of the claims of the '881 Patent are invalid as failing to meet the enablement requirement.

v. Indefiniteness

As Mr. Leinsing will explain, each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the '864 Patent is indefinite and therefore invalid under 35 U.S.C. § 112.

NJOY Exhibit 2008.0922
Juul v. NJOY
IPR2024-00161

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a. Interior and solution holding medium

As Mr. Leinsing will explain, each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the '864 Patent is invalid for indefiniteness for the alleged claim feature of an interior of the housing being part of the same structure as a solution holding medium. *See* JX-0632C (Leinsing Opening Report) at ¶ 711.

Each of claims 1, 2, 9, 10, 12, 13, 15, 16, 20, 25, and 26 of the '864 Patent separately and distinctly recites an "interior" and a "solution holding medium." *See e.g*., JX-0001 ('864 Patent) at claim 1 ("a housing having an interior and a solution holding medium"). Similarly, the '864 Patent only teaches and discloses structures of the solution holding medium that are separate and distinct from the interior of the housing. *See e.g.*, JX-0001 ('864 Patent) at 5:51-54; 5:65-6:5; 9:34-36. Nowhere do the applicants of the '864 Patent provide any disclosure of a cartridge device containing a solution holding medium that is not a separate and distinct component from the interior of the housing.

NJOY and Dr. Vallee may contend otherwise, asserting that the interior and the solution holding medium can be, at least in part, the same structure as the housing and/or the solution holding medium. Under this apparent construction, Mr. Leinsing will explain that these claims are indefinite because a POSITA would not be able to ascertain with reasonable certainty that the separately and distinctly claimed "interior" and "solution holding medium" can be satisfied by the same structure.

NJOY and Dr. Vallee will be unable to show that these claims are definite as to the interior of the housing and the solution holding medium sharing the same structure. For instance, Dr. Vallee may submit that figure 2 depicts the housing and the solution holding medium sharing a border. *See* CX-2726C (Vallee Rebuttal Report) at ¶ 625. However, figure 2 is not a detailed drawing as to the specific configuration of the internal structures of the components. Further, Mr.

NJOY Exhibit 2008.0923
Juul v. NJOY
IPR2024-00161

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Leinsing testified that drawings of elements sharing a line does not mean that they share the same structure. *See* CX-0321 (2024-04-07 Leinsing Depo. Tr.) at 173:18-174:7.

2. The '881 Patent

i. Anticipation / Obviousness

a. '881 Patent, Claim 1[pre]: "An apparatus comprising"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[pre] of the '864 Patent.

b. '881 Patent, Claim 1[a]: "a power source"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 2 of the '864 Patent.

c. '881 Patent, Claim 1[b]: "wherein the power source includes a battery"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 2 of the '864 Patent.

d. '881 Patent, Claim 1[c]: "wherein the power source includes an electrically conductive portion"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 2 of the '864 Patent.

e. '881 Patent, Claim 1[d]: "a cartridge having a housing that comprises an interior"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claims 1[pre] and 1[a] of the '864 Patent.

NJOY Exhibit 2008.0924
Juul v. NJOY
IPR2024-00161

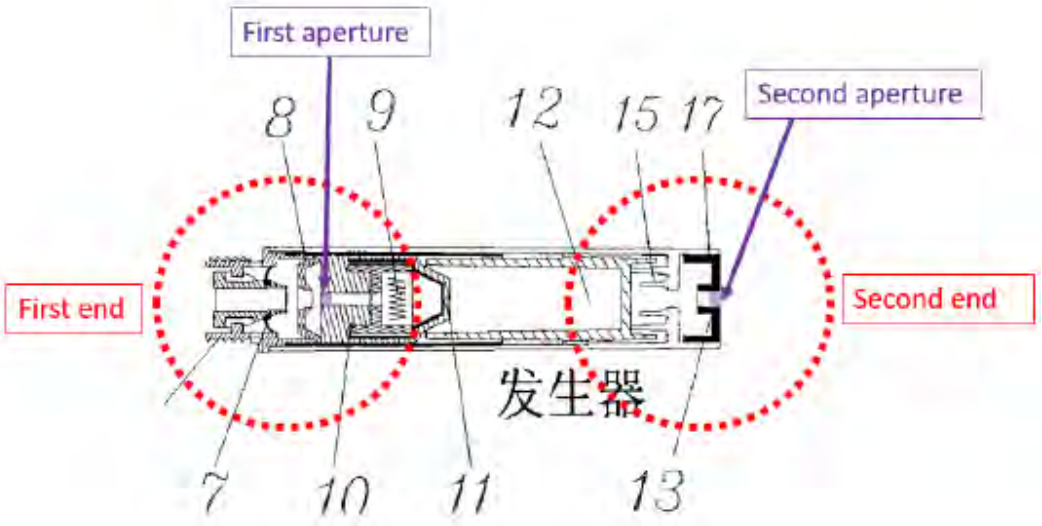
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f. '881 Patent, Claim 1[e]: "wherein the housing includes a first end and a second end that is opposite the first end, wherein the housing includes a first aperture on the first end and a second aperture on the second end"

The evidence will show that the prior art discloses or renders obvious this limitation for the largely the same reasons that it discloses or renders obvious claim 1[b] of the '864 Patent. In addition to the requirements of claim 1[b] of the '864 patent, this limitation requires that the apertures be "on" the first and second ends respectively, rather than "proximate," and the evidence will show that the prior art renders that aspect as well.

1. Xia '610 in view of Wang '554 and Fang '044 and Smoke Fifty-One Duo– '881 Patent, Claim 1[e]

The evidence will show that Xia '610 discloses or renders obvious, alone or in combination with Wang '554 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 73-76; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).



See JX-0596 (Xia '610) at FIG. 2; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 652-653.

NJOY Exhibit 2008.0925
Juul v. NJOY
IPR2024-00161

[redacted]

The identified second aperture is on the end of the housing.

Additionally, the identified first aperture is on the end of the claimed housing as NJOY interprets the claims. For example, with respect to infringement, NJOY asserted that an aperture in an internal component of a cartridge can satisfy the requirement of serve as the claimed housing. *See e.g.,* CX-2157C (Vallee Opening Rpt.) at ¶¶737-744; ([redacted]); CX-2157C (Vallee Opening Rpt.) at ¶¶ 1645-52 (identifying the (1) the exterior structure of the Cartridge Base, (2) External Stainless Tube, and (3) Mouth End Cap form the VUSE Solo Cartridge's housing); RX-1531C (19-cv-00260, 120_04 -Vallee Ex. D) at RX-1531C.60-61; RX-1529C (19-cv-00260, Dkt. 120-9 ('881 chart versus Vuse Ciro)) at RX-1529C.6-7. Although NJOY no longer asserts that the JUUL1 Pod infringes this claim, NJOY and its expert Dr. Vallee have made clear their understanding of the scope of this claim. *Id.*

Additionally, to the extent not disclosed, as explained with respect to '864 patent claim 1[b], Mr. Leinsing will opine that it would have been obvious to modify Xia '610 alone, in view of Wang '554, in view of Fang '044, and in view of Smoke Fifty-One Duo to move Xia '610's central aperture that is annotated in the above figures to the left of the cartridge, such that it is located at the end. *See, e.g.,* JX-0632C (Leinsing Opening Rpt.) at ¶¶ 231-240. Mr. Leinsing will opine that a POSITA would be motivated to make this modification because having the aperture further to the left could allow the design to move the rest of the internal components leftward, resulting in more available space for the liquid storage 12 with the same external dimensions. *Id.* This could result in increased storage of vaporizing liquid, and therefore improved customer experience through a reduction in the frequency of refills/replacements of the cartridge portions.

NJOY Exhibit 2008.0926
Juul v. NJOY
IPR2024-00161

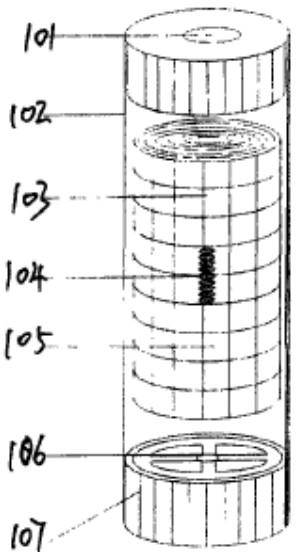
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Complainant asserts that such modifications would require a substantial redesign of Xia '610. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-1, ¶ 31. Specifically, the redesign would require an entirely new actuation mechanism and a new method of blocking the back flow of liquid into the battery portion. *Id.* However, as Mr. Leinsing will opine, these are the very changes that improve the design and motivate the modification: the new actuation mechanism is more reliable and the improved backflow prevention increases liquid storage.

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '881 Patent, Claim 1[e]

The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 79-83; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

The identified apertures are on the ends of the end caps as disclosed in Wang '554. For example, as shown in Figure 3, Wang '554's cartridge has a first end and a second end that is opposite the first end as well as a first aperture 101 on the first end and a second aperture 106 on the second end of the housing:



NJOY Exhibit 2008.0927
Juul v. NJOY
IPR2024-00161

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See RX-0005 (Wang '554) at Fig. 3; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 659.

Additionally, to the extent not disclosed, as explained with respect to '864 patent claim 1[b], Mr. Leinsing will opine that it would have been obvious to modify Wang '554 so that the threaded male conductor is on the cartridge and a threaded female conductor is on the battery section. S*ee* JX-0632C (Leinsing Opening Rpt.) at ¶ 275. For example, the evidence will show that the use of male or female threaded conductors are simply design choices and well known in the art. *See e.g.,* Xia '610 (showing that the cartridge uses a male conductor and the battery section uses a female conductor); Han '364 (showing that the cartridge uses a male conductor and the battery section uses a female conductor); NPRO Style (showing that the cartridge uses a male conductor and the battery section uses a female conductor); Cigarette Electronique (showing that the cartridge uses a female conductor and the battery section uses a male conductor); s*ee also* JX-0632C (Leinsing Opening Rpt.) at ¶ 275.

3. Fang '044 in view of Xia '610 and Wang '554 and Smoke Fifty-One Duo – '881 Patent, Claim 1[e]

The evidence will show that Fang '044 discloses or renders obvious, alone or in combination with Xia '610 and Wang '554 this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 84-85; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici).

NJOY Exhibit 2008.0928
Juul v. NJOY
IPR2024-00161

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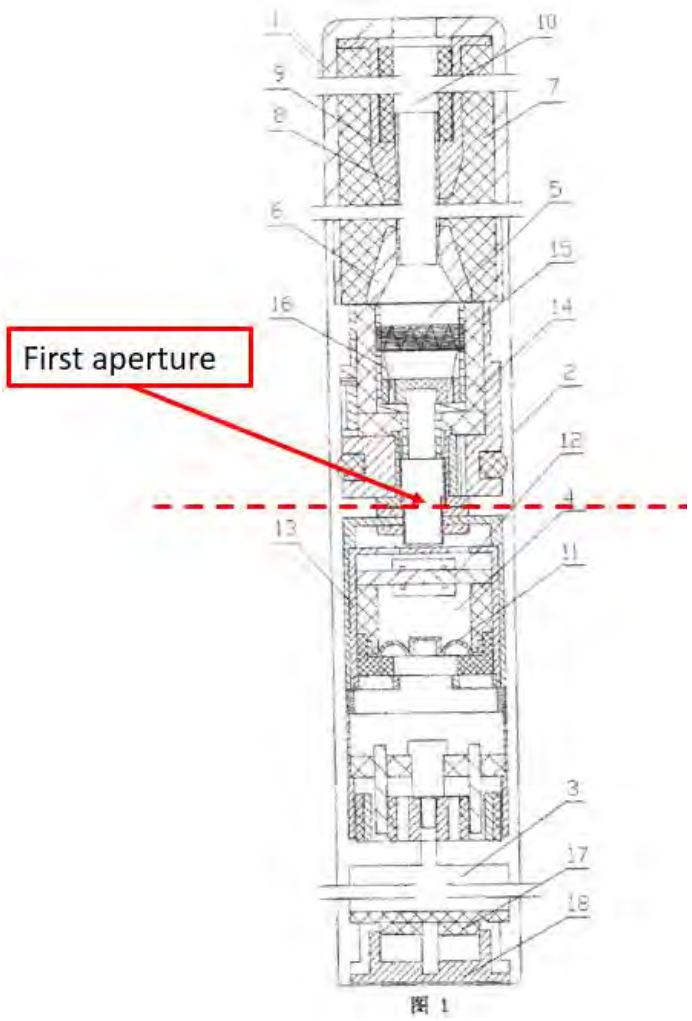


图 1

See JX-0632C (Leinsing Opening Rpt.) at ¶ 311.

For example, as explained with respect to '864 patent claim 1[b], in making a split between the power portion and the cartridge portion a POSITA would be motivated to make a threaded male conductor on the cartridge and a threaded female conductor is on the battery section. This results in the apertures in Fang '044 being located at a first and second end of the housing respectively.

Complainant asserts that "Mr. Leinsing does not provide any information regarding whether the added electrically conductive portion comprises an aperture, where any aperture is located at, or the size of the aperture." *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-3, ¶ 33.

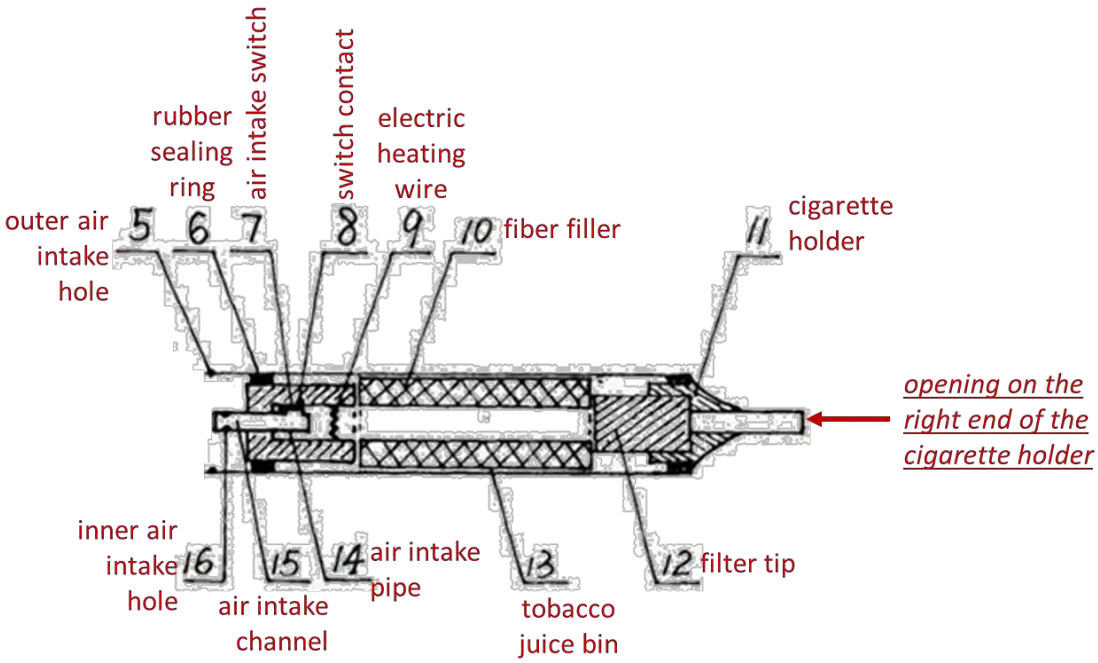
NJOY Exhibit 2008.0929
Juul v. NJOY
IPR2024-00161

[redacted]

However, as Mr. Leinsing will opine, a POSITA would be motivated to keep the airflow passageway disclosed in Fang, and merely introduce a split and use electrically conductive threading; there is no need to change the existence, location, or size of the aperture from that disclosed in Fang already (and therefore there is no need to explain those, as they are well explained in Fang already, including through its figures).

4. Wang '927 in view of Wang '554 and NPRO Style – '881 Patent, Claim 1[e]

The evidence will show that Wang '927 in view of Wang '554 and NPRO Style discloses or renders obvious this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 22-26; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang '927); RX-0005 (Wang '554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style).



See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end) (annotated in red); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 341.

NJOY Exhibit 2008.0930
Juul v. NJOY
IPR2024-00161

[redacted]

For example, Wang '927's air intake hole 16 is on the first end of the housing as NJOY interprets the claims (e.g., by including any components near the end as potentially part of the housing, such as [redacted]). JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5. Additionally, to the extent not disclosed, as explained with respect to '864 patent claim 1[b], Mr. Leinsing will opine that it would have been obvious to modify the inner air intake hole as disclosed in Fig. 1 of Wang '927 (illustrated in Fig. A – Wang '927 below) so that an inner air intake hole is in the center on the left end of the air intake pipe (illustrated in Fig. B – Wang '927 below). *See* JX-0632C (Leinsing Opening Rpt.) at ¶ 337. JX-0594 (Wang '927) at Fig. 1, JX-0594.3-5.

Wang '927's second aperture (whether the aperture in the mouthpiece or the aperture into which the mouthpiece is inserted) is similarly on the second end of the housing. *Id*.

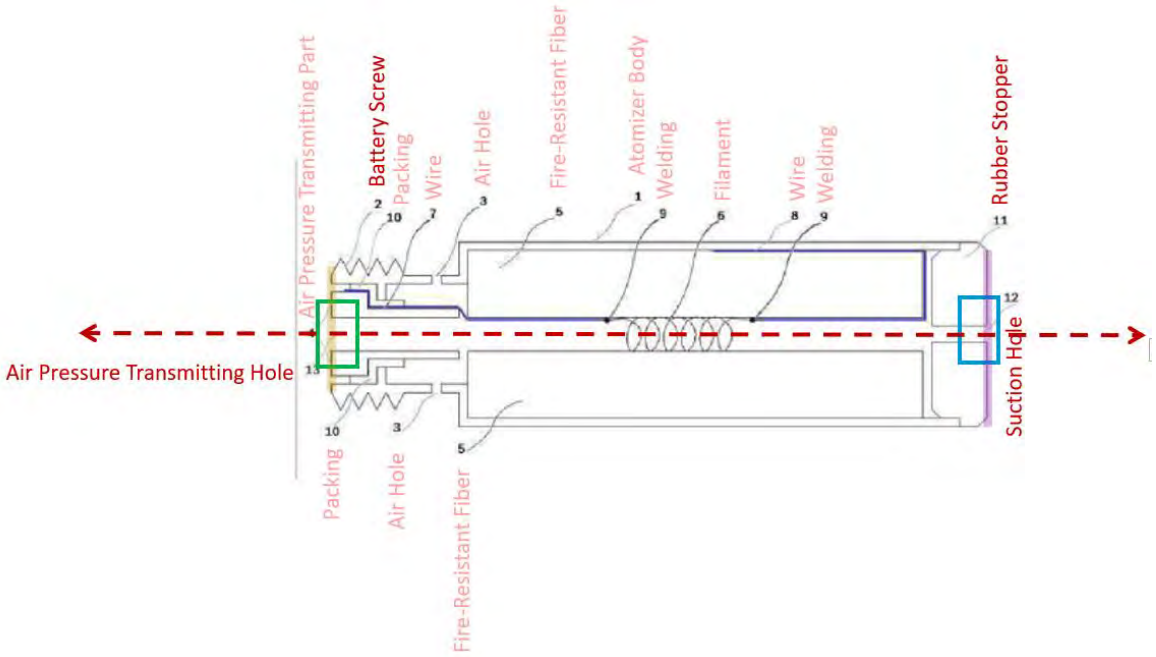
5. Han '364 in view of Fang '044 and NPRO Style – '881 Patent, Claim 1[e]

The evidence will show that Han '364 in view of Fang '044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 25-30; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han '364 certified English Translation) ; JX-0595 (Fang '044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit).

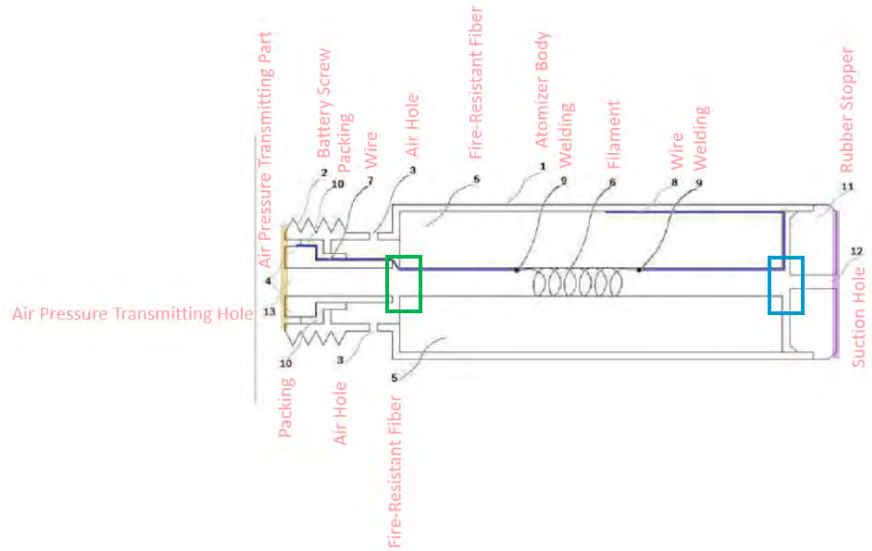
For example, Han '364 discloses first and second ends having first and second apertures. For example, Han '364 discloses a cylindrical cartridge including two ends. *See* JX-0631 (Han '364 certified English Translation) at [0003], [0009], [0013]; Claim 3; *see also* JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶ 365. Additionally, as shown below in Han '364, FIG. 1, Han '364 discloses a first end (annotated in yellow); a second end (annotated in purple); a first aperture on the first end (annotated in green); and a second aperture on the second end (annotated in blue):

NJOY Exhibit 2008.0931
Juul v. NJOY
IPR2024-00161

[redacted]



Additionally and/or alternatively, under NJOY's interpretation of "the first/second aperture on the [first/second end]", Han '364 also discloses a first and second aperture as annotated below:



See JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶ 27.

[redacted]

Under NJOY's interpretation, the first aperture is "on" the first end in that the first aperture in that it is positioned on the portion of the cartridge that comprises the first end, and the second aperture is positioned on the portion of the cartridge that comprises the second end.

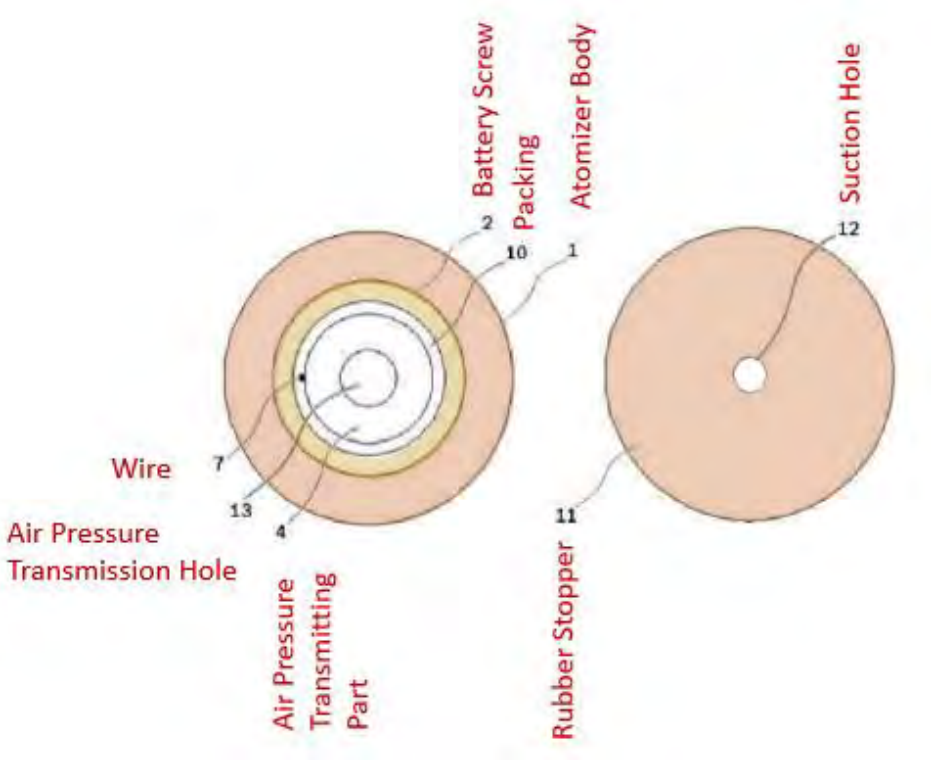
While the rubber stopper 11 is removeable from the rest of the atomizer body 1, this is consistent with the written description of the Asserted Patents, which states that "housing 120 may comprise the cartridge wall and a single end-cap" and that "[t]he first end 122 and the second end 124 may be or include end caps." *See* '881 Patent at 3:58-59, 5:32-33; *see also* JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶ 29. Further, the Asserted Patents disclose, "the first and second ends 206 and 208 can be removeable caps[.]" *See* '881 Patent at 6:4-5. Thus, the rubber stopper 11 is still consistent with the Asserted Patent's disclosure which allows for a removable end cap to form an end of the housing.

Complainant asserts that the air pressure transmitting hole 13 is not an aperture in the housing because the air pressure transmitting hole 13 is in air pressure transmitting part 4 and not the orange (atomizer body 1 and the rubber stopper 11), and yellow (battery screw 2). *See* CX-2726C (Vallee Reb. Rpt.) at Appx. C, ¶ 29. However, as Mr. Leinsing will opine, the identified aperture is part of the claimed "housing" at least as NJOY interprets the claims and the "housing." For example, the asserted patents explain that the housing can comprise end caps. For example, the specification states that "housing 120 may comprise the cartridge wall and a single end-cap" and that "[t]he first end 122 and the second end 124 may be or include end caps." *See* '881 Patent at 3:58-59, 5:32-33; *see also* JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶ 260. Further, the Asserted Patents disclose, "the first and second ends 206 and 208 can be removeable caps[.]" *See* '881 Patent at 6:4-5; *see also* JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶ 260. Additionally, this is in line with how NJOY interprets the claims and the "housing" at least for infringement, for

NJOY Exhibit 2008.0933
Juul v. NJOY
IPR2024-00161

[redacted]

example by pointing to the electrical contact tabs as part of the claimed "housing" despite being separate parts from the tank.



JX-0632C (Leinsing Invalidity Rpt.) at ¶369.

Complainant further argues that the green and blue boxes that Mr. Leinsing has identified as the first and second aperture do not meet the claim requirements. *See* Vallee Reb. Rpt. at Appx. C, ¶¶ 31-33. Specifically, Complainant argues that (1) the green box is not an aperture in the housing nor at the end of the housing but rather an aperture in the liquid storage, and (2) the second aperture identified by the blue box is not on the second end. However, as Mr. Leinsing will opine, the identified aperture is part of the claimed "housing" at least as NJOY interprets the claims and the "housing." For example, the asserted patents explain that the housing can comprise end caps. For example, the specification states that "housing 120 may comprise the cartridge wall and a single end-cap" and that "[t]he first end 122 and the second end 124 may be or include end caps."

NJOY Exhibit 2008.0934
Juul v. NJOY
IPR2024-00161

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See '881 Patent at 3:58-59, 5:32-33; *see also* JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶ 260. Further, the Asserted Patents disclose, "the first and second ends 206 and 208 can be removeable caps[.]" *See* '881 Patent at 6:4-5; *see also* JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶ 260. Additionally, this is in line with how NJOY interprets the claims and the "housing" at least for infringement, for example by pointing to the electrical contact tabs as part of the claimed "housing" despite being separate parts from the tank.

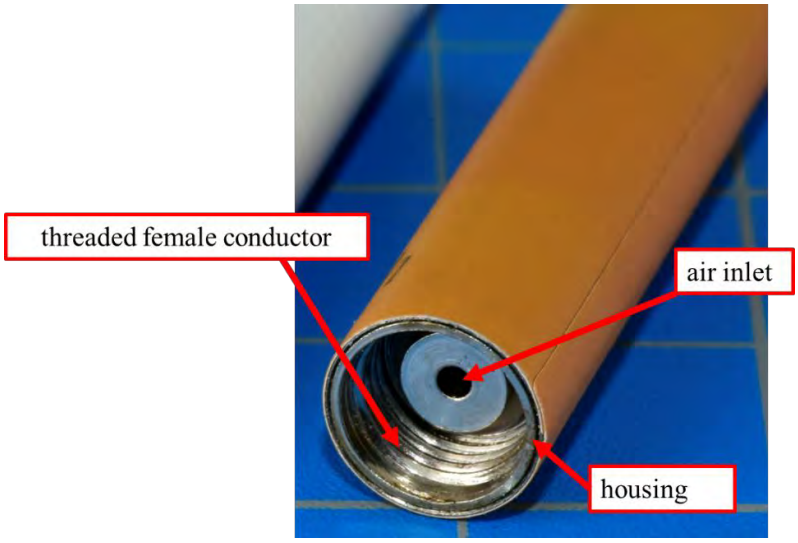
6. Red Dragon in view of Fang '044 and Wang '927 – '881 Patent, Claim 1[e]

The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 25-30; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, the air inlet hole is on the first end of the housing as NJOY interprets the claims (e.g., by including any components near the end as potentially part of the housing, such as [redacted]).

NJOY Exhibit 2008.0935
Juul v. NJOY
IPR2024-00161

[redacted]



See RX-0074 (Photos of Red Dragon Kit #1) at RX-0074.45 (annotated in red) (showing the first end); JX-0632C (Leinsing Opening Rpt.) at ¶ 488. *See also* RX-1126C (Evans 03/11/24 Tr.) at 86:25-88:25.

The air exit hole is on the second end.



See RX-0074 (Photos of Red Dragon Kit #1) at RX-0074.26 (annotated in red) (showing the second end); JX-0632C (Leinsing Opening Rpt.) at ¶ 490*; see also* RX-1126C (Evans 03/11/24 Tr.) at 86:25-88:25.

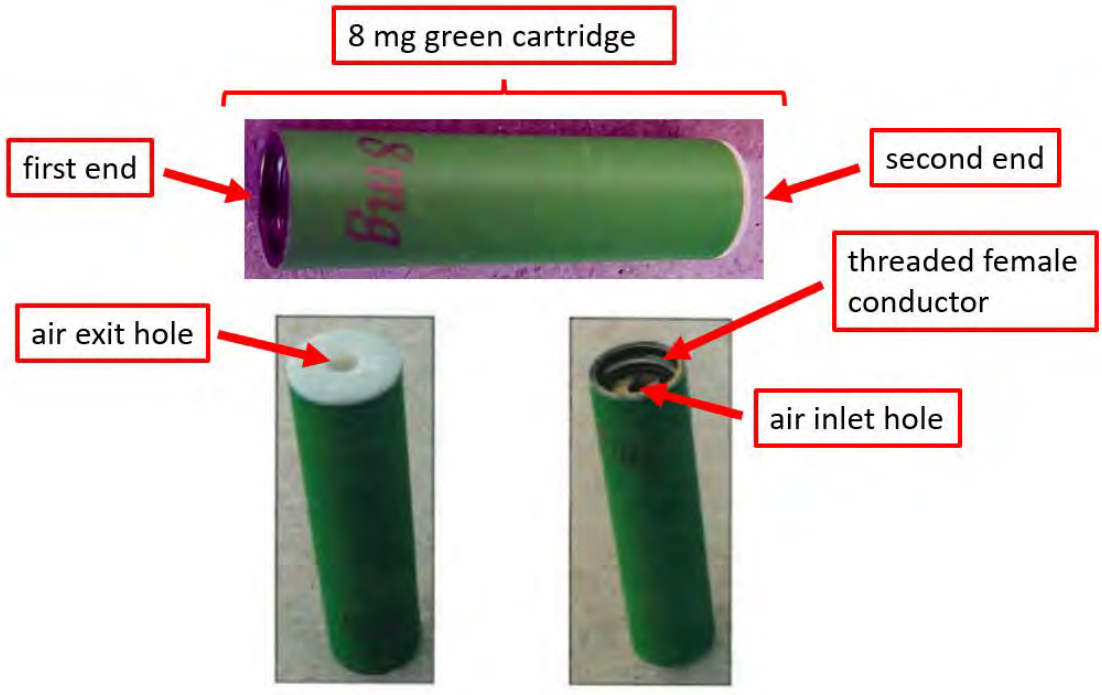
NJOY Exhibit 2008.0936
Juul v. NJOY
IPR2024-00161

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7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '881 Patent, Claim 1[e]

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 22-26; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, the air inlet hole is on the first end of the housing as NJOY interprets the claims (e.g., by including any components near the end as potentially part of the housing, such as [redacted]). The air exit hole is on the second end.



See JX-0632C (Leinsing Opening Rpt.) at ¶440.

NJOY Exhibit 2008.0937
Juul v. NJOY
IPR2024-00161

[redacted]

8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 1[e]

The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 26-32; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044).

The NJOY NPRO also discloses an opening where air coming into the housing converges on the first end.



JX-0404 (NPRO Photos) at JX-0404.16 (annotated in red); JX-0632C (Leinsing Opening Rpt.) at ¶ 563.

This first aperture is on the first end of the housing as NJOY interprets the claims (e.g., by including any components near the end as potentially part of the housing, such as [redacted]). The second aperture is on the second end.

Complainant asserts that the first aperture is not at the first end but rather in the interior of the cartridge. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. G, ¶ 27. However, as Mr. Leinsing will explain, this limitation is met at least as NJOY interprets the claims and the extent of the "ends"

NJOY Exhibit 2008.0938
Juul v. NJOY
IPR2024-00161

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of the device (including a general area of the cartridge, rather than e.g., a furthest surface, *see supra,* n. 26).

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 1[e]

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 26-32; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.



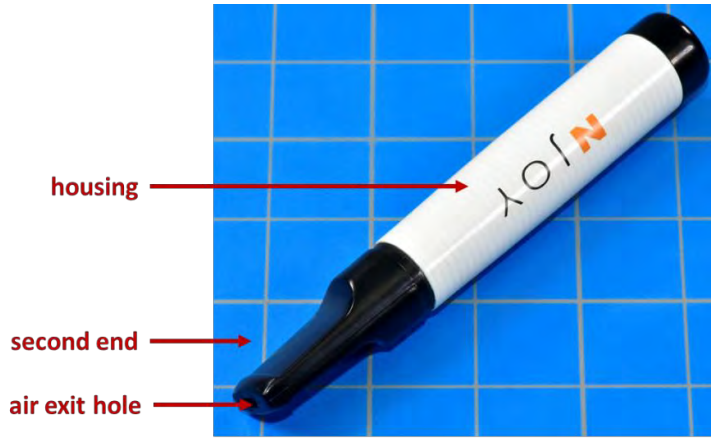
RX-0084 (Photos of NJOY NCIG) at RX-0084.62 (annotated in red).



NJOY Exhibit 2008.0939
Juul v. NJOY
IPR2024-00161

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JX-0402 (CT Scans of NJOY NCIG) at JX-0402.16 (annotated in red and blue).

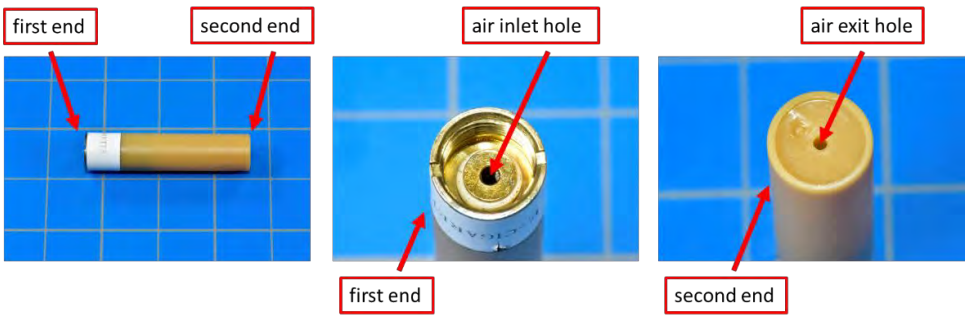


RX-0084 (Photos of NJOY NCIG) at RX-0084.63 (annotated in red).

10. Cigarette Electronique – '881 Patent, Claim 1[e]

The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 32-37; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).

For example, the first aperture is on the first end of the housing as NJOY interprets the claims (e.g., by including any components near the end as potentially part of the housing, such as [redacted]). *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶ 32-37.



[redacted]

See RX-0072 (Photos of Cigarette Electronique) at RX-0072.32 (annotated in red), RX-0072.34 (annotated in red), JLI-RX-0072.36 (annotated in red).

To the extent that it is determined that a first aperture must be on an end to meet the claim limitations as under JLI's interpretation, a POSITA would be motivated to swap the threaded conductors in the Cigarette Electronique device so that the threaded male conductor is on the cartridge and a threaded female conductor is on the battery section. JX-0632C (Leinsing Opening Rpt.) at ¶ 523-524. The use of male or female threaded conductors are simply design choices and well known in the art. See e.g., Xia '610 (showing that the cartridge uses a male conductor and the battery section uses a female conductor); Han '364 (showing that the cartridge uses a male conductor and the battery section uses a female conductor); NPRO Style (showing that the cartridge uses a male conductor and the battery section uses a female conductor); Wang '554 (showing that the cartridge uses a female conductor and the battery section uses a male conductor). Additionally, a POSITA would have been motivated to include a threaded male connector on the cartridge portion for several reasons including decreased risk of shorts, less collection of dust than with a female connector, and safer charging accessories. JX-0632C (Leinsing Opening Rpt.) at ¶ 523.

Further, a POSITA would have been motivated to look to a prior art reference or system like Xia '610 to modify the Cigarette Electronique device. As discussed above, Xia '610 uses a male threaded conductor for the cartridge and a female threaded conductor for the battery section JX-0632C (Leinsing Opening Rpt.) at ¶ 524.

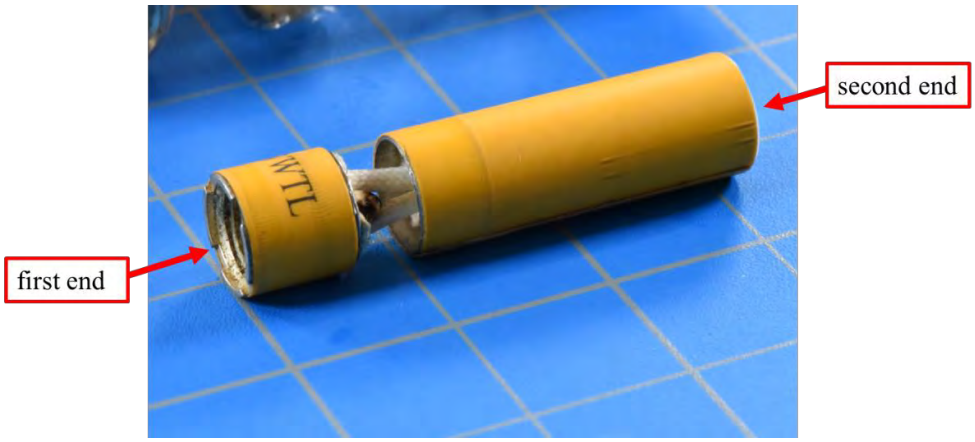
11. Fuma Prototype – '881 Patent, Claim 1[e]

The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 25-27; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

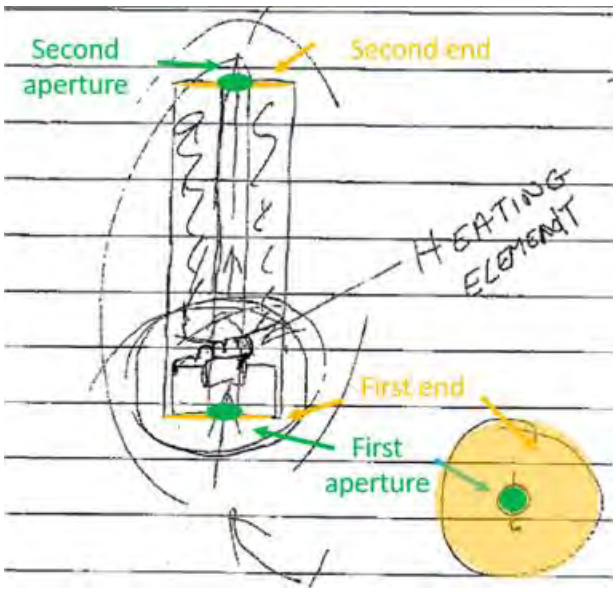
NJOY Exhibit 2008.0941
Juul v. NJOY
IPR2024-00161

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For example, the housing of the Fuma Cartridge includes the first aperture (i.e., the air inlet) on the first end (i.e., Fuma Cartridge's screw end) and the second aperture (i.e., the exit hole) on the second end (i.e., Fuma Cartridge's cap end), wherein the first and second apertures are in the housing. *See e.g.*, '881 Priority Chart at 7-9.



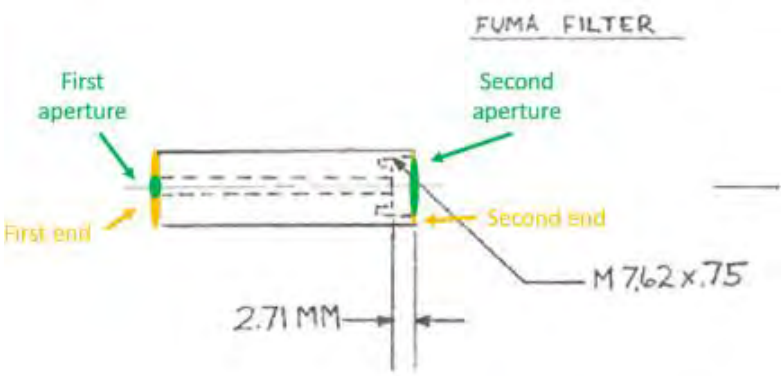
See RX-0078 (Photos of Fuma Starter Kit) at RX-0078.19 (annotated in red).



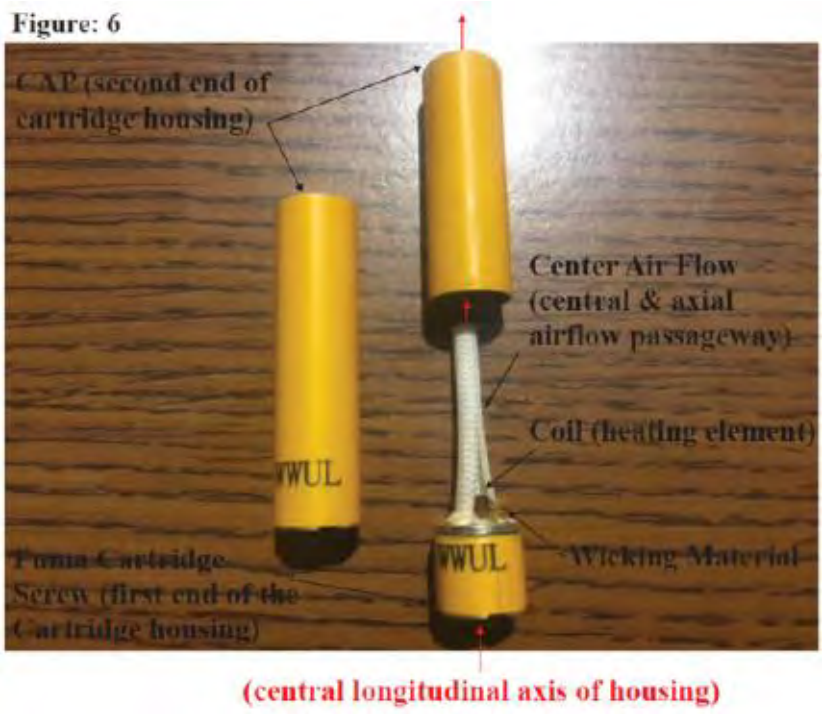
See '881 Priority Chart at 7 (citing CRTP Attachment C).

NJOY Exhibit 2008.0942
Juul v. NJOY
IPR2024-00161

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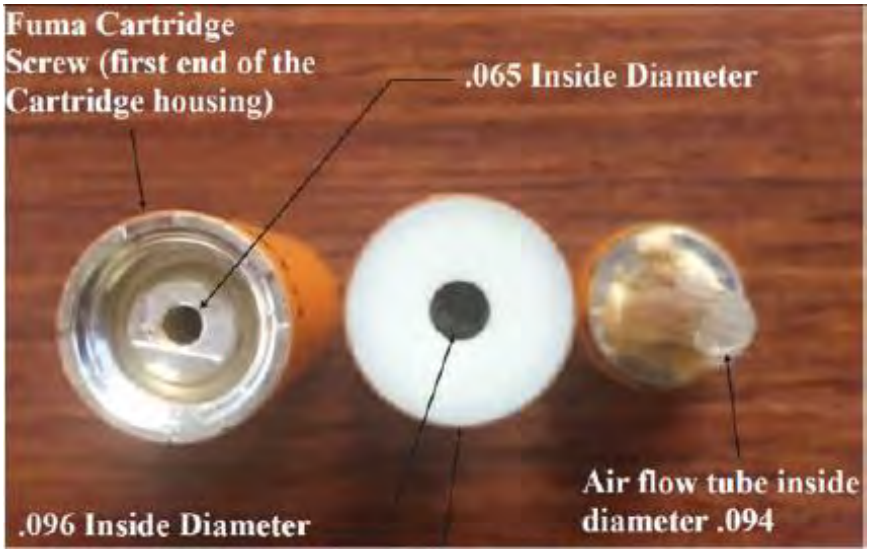


See '881 Priority Chart at 7 (citing CRTP Attachment E at FUMA-INSPECTION-0036).

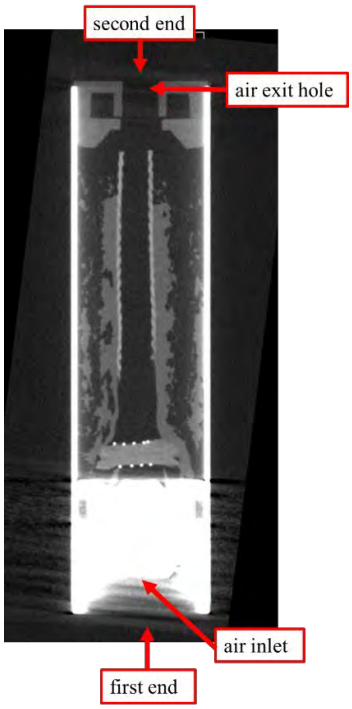


See '881 Priority Chart at 8 (citing CRTP Attachment D at Fig. 6).

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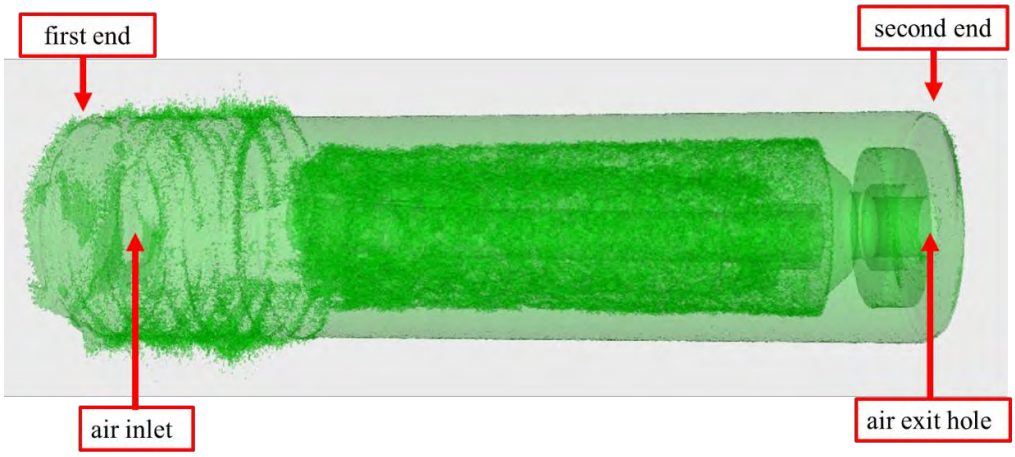
See '881 Priority Chart at 9 (citing CRTP Attachment D at Fig. 15).



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.17 (annotated in red).

NJOY Exhibit 2008.0944
Juul v. NJOY
IPR2024-00161

[redacted]



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.41 (annotated in red).

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses claim element 1(e). *See* Conley '881 Declaration at ¶5 (Independent claim 21 - Recitation 2).

NJOY also admitted that the Fuma Prototype discloses claim element 1e. *See* '881 Priority Chart at 7-9.

g. '881 Patent, Claim 1[f]: "wherein the housing includes an airflow passageway that extends centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[i] and claim 1[j] of the '864 Patent.

h. '881 Patent, Claim 1[g]: "wherein the airflow passageway is configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[j] of the '864 Patent.

NJOY Exhibit 2008.0945
Juul v. NJOY
IPR2024-00161

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i. ’881 Patent, Claim 1[h]: “wherein the first end of the housing includes an electrically conductive portion that is adapted to mechanically and electrically couple to the electrically conductive portion of the power source”

The term “electrically conductive portion” has been construed to mean “a portion that is electrically conductive.” Order No. 36 at 5.

The evidence will show that the prior art discloses or renders obvious this limitation for the largely the same reasons that it discloses or renders obvious claim 1[c] of the ’864 Patent. In addition to the requirements of claim 1[c] of the ’864 patent, this limitation requires that the electrically conductive portion be “adapted to mechanically and electrically couple,” rather than just “electrically couple,” and the evidence will show that the prior art renders that aspect as well.

1. Xia ’610 in view of Wang ’554 and Fang ’044 and Smoke Fifty-One Duo– ‘881 Patent, Claim 1[h]

The evidence will show that Xia ’610 discloses or renders obvious, alone or in combination with Wang ’554 and Fang ’044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 113-119; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia ‘610); JX-0595 (Fang ‘044); RX-0130C (Declaration of Yardimici).

Xia ’610 explains that “connecting conductor B6 and the connecting conductor A5 are in threaded connection or clamping groove connection through the hollow contact copper caps.” JX-0596 (Xia ‘610) at JX-0596.12*; see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 669. Xia ’610’s description that the “connecting” conductors perform the connecting through threaded connection or clamping groove connection demonstrates that they also perform mechanical coupling.

Additionally, Xia ’610 discloses this limitation at least as NJOY interprets the claims (including by allowing different components to perform the mechanical coupling and the electrical

NJOY Exhibit 2008.0946
Juul v. NJOY
IPR2024-00161

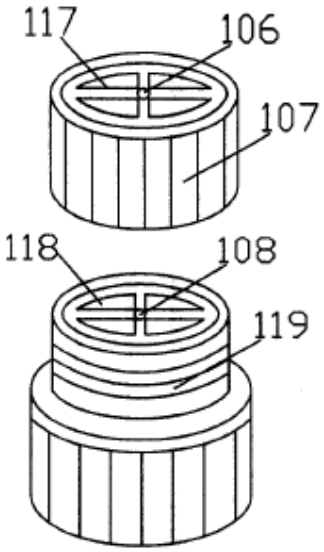
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coupling, such as [redacted]). For example, Xia '610's generator portion is mechanically coupled to the battery portion via threaded connection.

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '881 Patent, Claim 1[h]

The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 120-124; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

For example, Wang '554 states that the ends of the cigarette holder portion and the cigarette rod portion respectively fix the two portions together for use: "The output end 109 of the cigarette rod matches the input end 106 of the cigarette holder, and two poles are isolated by an insulating material, and are connected with the input end 107 of the cigarette holder, respectively, thereby connecting to the electric heater 104 of the cigarette holder. At the same time, it plays a role in being fixed with the cigarette holder as a whole." RX-0005 (Wang '554) at RX-0005.6-7; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 675.



[redacted]

See RX-0005 (Wang '554) at Fig. 4; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 676.

Additionally, Wang '554 discloses this limitation at least as NJOY interprets the claims (including by allowing different components to perform the mechanical coupling and the electrical coupling, such as [redacted]). For example, Wang '554's cigarette holder portion is coupled to the battery portion via threaded connection.

3. Fang '044 in view of Xia '610 and Wang '554 and Smoke Fifty-One Duo – '881 Patent, Claim 1[h]

The evidence will show that Fang '044 discloses or renders obvious, alone or in combination with Xia '610 and Wang '554 this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 125-126; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici).

Mr. Leinsing will opine that in making Fang '044 a cartridge configuration, a POSITA would have been motivated to include an electrically conductive portion on the first end of the housing of the cartridge portion, to connect to the heating coil. Additionally, in making Fang '044 a cartridge configuration, a POSITA would have been motivated to include a mechanically connective portion, so that the cartridge portion and the power portion could be connected for use and disconnected to replace the cartridge portion. Neither portion has a substantial use without being mechanically and electrically connected to the other. Further, both because it is the most simple design and in view of other references, such as Xia '610 and Wang '554 and Smoke Fifty-One Duo, a POSITA would have been motivated to make the same connective portions both the mechanical and electrical connection, such as using metal threaded connectors as was known in the art.

NJOY Exhibit 2008.0948
Juul v. NJOY
IPR2024-00161

[redacted]

Additionally, Fang ’044 discloses this limitation at least as NJOY interprets the claims (including by allowing different components to perform the mechanical coupling and the electrical coupling, such as [redacted]). For example, even not using electrically conductive threading, there would necessarily be a mechanical coupling between the two pieces of the two-piece electronic cigarette.

Complainant asserts that a POSITA would not have been motivated to modify Fang ’044 to include metal threaded connectors because it would “introduce weakness into the device, compromise the pressure sensor, and add cost and complexity into the device.” *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-3, ¶ 57. However, as Mr. Leinsing will opine, the benefits of making exchangeable cartridge configuration are numerous, and outweigh these alleged drawbacks. Additionally, Dr. Vallee provides no justification or explanation why a threaded portion would be weaker than a thin-walled (indeed according to Dr. Vallee, hollow walled) design. Nor does Dr. Vallee sufficiently explain how or why the pressure sensor would be “compromised” where it remains unchanged and is wholly in the battery portion.

4. Wang ’927 in view of Wang ’554 and NPRO Style – ‘881 Patent, Claim 1[h]

The evidence will show that Wang ’927 in view of Wang ’554 and NPRO Style discloses or renders obvious this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 37-39; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang ’927); RX-0005 (Wang ’554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style).

For example, as explained above with respect to ’864 Patent claim 1[a], the evidence will show that a POSITA would have been motivated to modify Wang ’927 to add threaded connections that would be adapted to electrically and mechanically couple to the power source . JX-0594 (Wang

NJOY Exhibit 2008.0949
Juul v. NJOY
IPR2024-00161

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’927) at Fig. 1, JX-0594.1-5; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶¶ 327-330; Section IV.G.1.xiii.b.4.

Additionally, Wang ’927 discloses this limitation at least as NJOY interprets the claims (including by allowing different components to perform the mechanical coupling and the electrical coupling, such as [redacted]). JX-0594 (Wang ’927) at Fig. 1, JX-0594.1-5. For example, even not using electrically conductive threading, there would necessarily be a mechanical coupling between the two pieces of the two-piece electronic cigarette. *Id.*

Complainant disagrees that a POSITA would have been motivated to modify the device because of the added expense and complexity to the device. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. B, ¶¶ 80-81. However, as Mr. Leinsing will opine, two-piece designs were often more cost effective approaches favored by consumers, and the benefits outweighed the drawbacks of introducing this improvement. .

5. Han ’364 in view of Fang ’044 and NPRO Style – ’881 Patent, Claim 1[h]

The evidence will show that Han ’364 in view of Fang ’044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 40-43; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han ’364 certified English Translation) ; JX-0595 (Fang ‘044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit).

For example, Han ’364 discloses “a screw part (2) made of electrically conductive brass (as known as Shinju)” that is designed to screw into the battery component 14; the battery component 14 also includes electrical contacts (e.g., such as a positive pole) to electrically connect filament 6 within the cartridge to the battery 14. *See* JX-0631 (Han ’364 certified English Translation) at [0013], [0017], [0034]; *see also* JX-0632C (Leinsing Invalidity Rpt.) at ¶ 362.

NJOY Exhibit 2008.0950
Juul v. NJOY
IPR2024-00161

[redacted]

To the extent NJOY disputes that Han ’364 explicitly discloses that the electrically conductive portion of screw part 2 is coupled to the electrically conductive portion of battery component 14 to the cartridge, Mr. Leinsing will opine that a person of ordinary skill in the art would have understood this implicitly through reviewing the disclosure of Han ’364. *See* JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶ 42. For example, a person of ordinary skill in the art reviewing Han ’364 would have understood inherently that battery 14 would have an electrically conductive portion (e.g., to allow electricity to be supplied to the filament 6). *Id.* Further, Han ’364 refers to the electrically conductive portion of the cartridge as a “screw for connecting to the battery part.” *See* JX-0631 (Han ’364 certified English Translation) at [0034]. A person of ordinary skill in the art would have also inherently understood through this disclosure that screw 2 is configured to couple to the battery part 1. Further, the fact that the cartridge and battery part 14 are connected via a “screw” would provide sufficient information to a person of ordinary skill in the art to understand that Han ’364 describes a mechanical and electrical coupling of the cartridge to the battery part 14. *See* JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶ 42.

Complainant asserts that Han ’364 does not disclose that the first end of the housing is electrically coupled to the electrically conductive portion of the power source. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. C, ¶ 57-58. Rather, the electrical coupling may be at a place other than the end. *Id.* However, as Mr. Leinsing will opine, a person of ordinary skill in the art would have understood this implicitly through reviewing the disclosure of Han ’364. Further, to the extent not disclosed, it would have been obvious to include the electrical contacts on the end as explained

6. Red Dragon in view of Fang ’044 and Wang ’927 – ‘881 Patent, Claim 1[h]

The evidence will show that Red Dragon in view of Fang ’044 and Wang ’927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 34-36; JX-

NJOY Exhibit 2008.0951
Juul v. NJOY
IPR2024-00161

[redacted]

0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927).

The first end of the housing includes an electrically conductive threaded female conductor. *See* RX-0074 (Photos of Red Dragon Kit #1) at RX-0074.45 ; *see also* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶¶ 258-260. The threaded female conductor is adapted to couple to the battery section through the threaded male conductor. *Id*.

Additionally, Red Dragon discloses this limitation at least as NJOY interprets the claims (including by allowing different components to perform the mechanical coupling and the electrical coupling, such as [redacted]). For example, even not using electrically conductive threading, there would necessarily be a mechanical coupling between the two pieces of the two-piece electronic cigarette.

7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '881 Patent, Claim 1[h]

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 34-36; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, the first end of the housing includes an electrically conductive threaded female conductor. *See, e.g.,* RX-0130C (Yardimici Declaration) at RX-0130C.37 ; RX-1558C (RJR Smoke Fifty-One Duo '881 Chart) at ITC1372_000008068; *see also* JX-0636C (Leinsing

NJOY Exhibit 2008.0952
Juul v. NJOY
IPR2024-00161

[redacted]

Opening Rpt., Appx. D) at ¶¶ 247-249. The threaded female conductor is adapted to couple to the battery section through the threaded male conductor. *Id.*

Additionally, Smoke Fifty-One Duo discloses this limitation at least as NJOY interprets the claims (including by allowing different components to perform the mechanical coupling and the electrical coupling, such as [redacted]). For example, even not using electrically conductive threading, there would necessarily be a mechanical coupling between the two pieces of the two-piece electronic cigarette.

8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 1[h]

The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 41-43; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044).

The NJOY NPRO's first end of the housing is adapted to electrically and mechanically couple to the power source. *See, e.g.,* JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009) at JX-0482.4; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); *see also* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 256-258. The threaded conductors are electrically conductive to allow current to pass from the battery in the power source to the atomizer/vaporizer in the cartridge. *Id.* The threaded conductors also mechanically connect the NPRO cartridge with the NPRO device. *Id.*

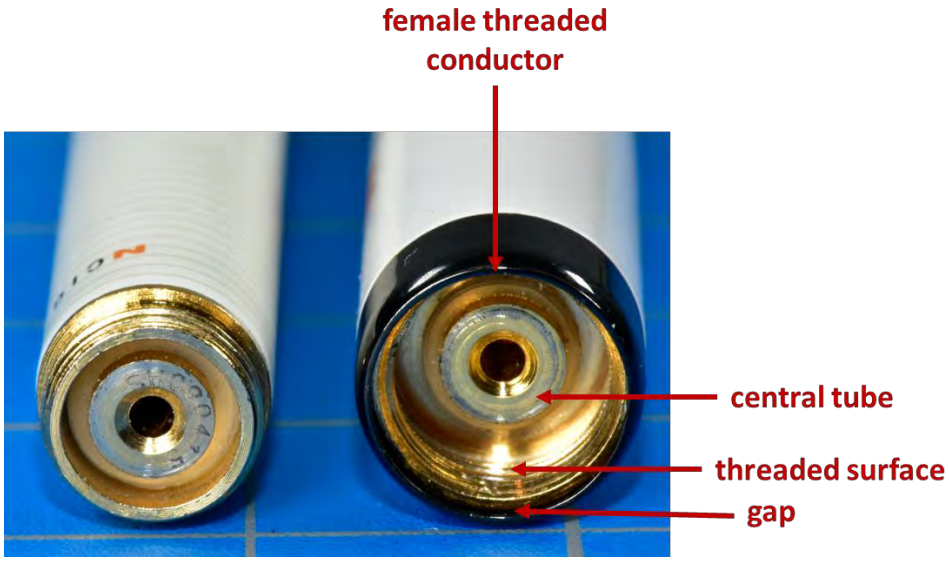
9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 1[h]

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang

NJOY Exhibit 2008.0953
Juul v. NJOY
IPR2024-00161

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'044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 41-43; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.



RX-0084 (Photos of NJOY NCIG) at RX-0084.52 (annotated in red).

10. Cigarette Electronique – '881 Patent, Claim 1[h]

The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 46-48; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).

For example, the Cigarette Electronique uses conductive threaded connection between the two portions. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶ 46-48.

Additionally, the Cigarette Electronique discloses this limitation at least as NJOY interprets the claims (including by allowing different components to perform the mechanical coupling and

[redacted]

the electrical coupling, such as [redacted]). For example, even not using electrically conductive threading, there would necessarily be a mechanical coupling between the two pieces of the two-piece electronic cigarette. *Id.*

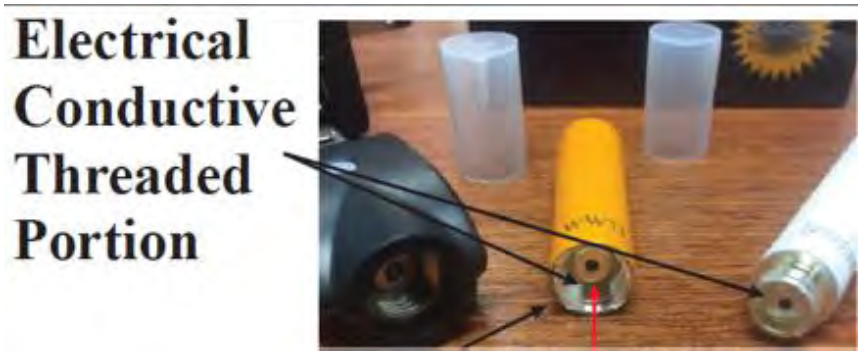
11. Fuma Prototype – '881 Patent, Claim 1[h]

The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 38-40; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

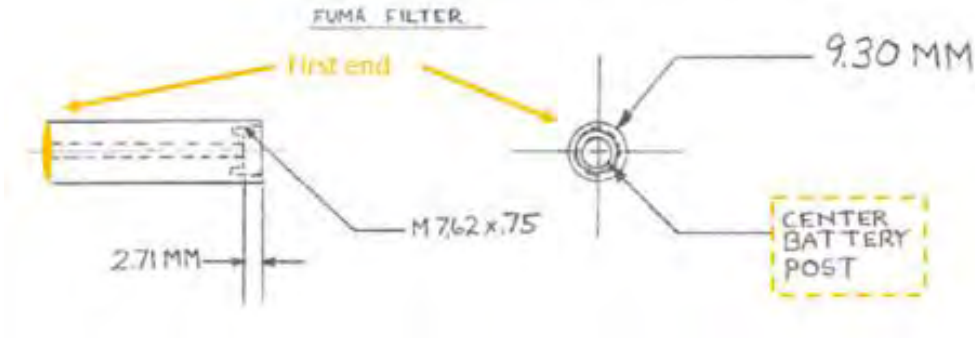
Additionally, the Fuma Prototype discloses this limitation at least as NJOY interprets the claims (including by allowing different components to perform the mechanical coupling and the electrical coupling, such as [redacted]). For example, the first end of the housing includes the threaded female conductor that is adapted to mechanically and electrically couple to the threaded male conductor of the Fuma Battery. Specifically, the electrically conductive threaded portion of the threaded female conductor mechanically couples to the electrically conductive threaded portion of the threaded male conductor so that the Fuma Cartridge can be securely attached to the Fuma Battery. When the Fuma Cartridge is screwed onto the Fuma Battery, the electrically conductive threaded surface of the threaded female conductor electrically couples to the electrically conductive threaded surface of the threaded male conductor to allow current from or to the battery to pass through to power the heating coil. Similarly, when the Fuma Cartridge is screwed onto the Fuma Battery, the central tube of the threaded female conductor electrically couples to the central tube of the threaded male conductor to allow current to or from the battery to pass through and power the heating coil.

NJOY Exhibit 2008.0955
Juul v. NJOY
IPR2024-00161

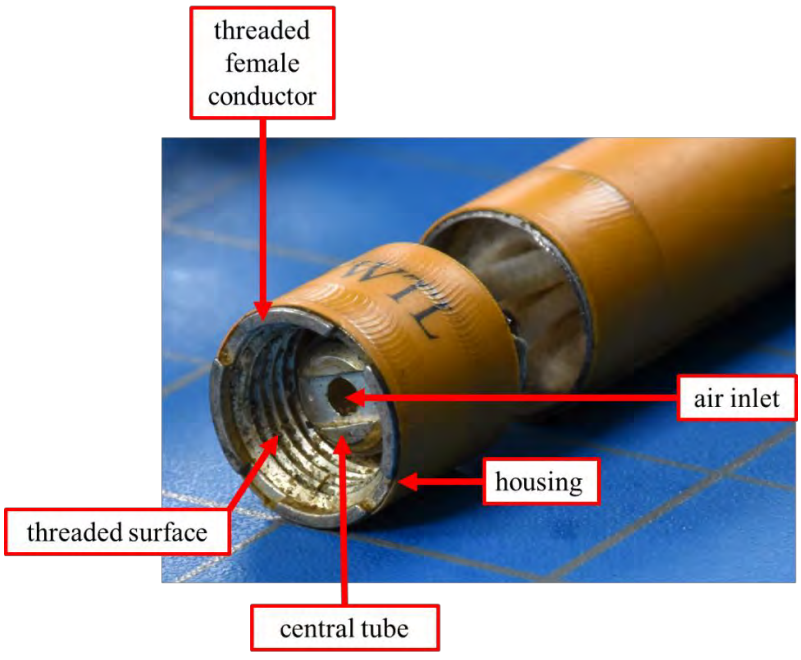
[redacted]



See '881 Priority Chart at 13 (citing CRTP Attachment D at Fig. 2).

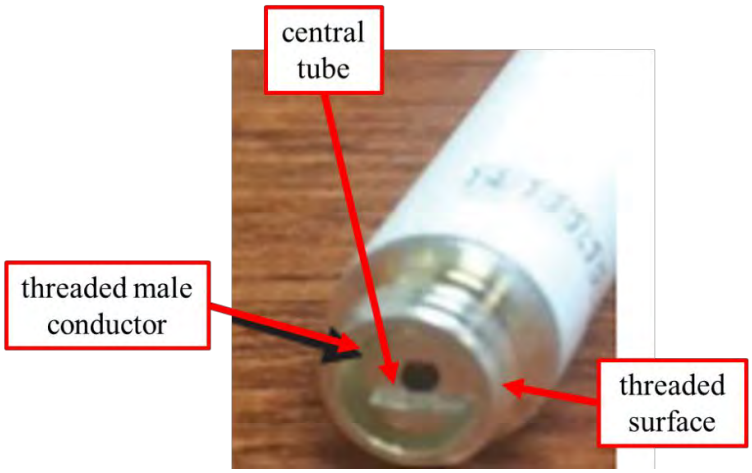


See '881 Priority Chart at 14 (citing CRTP Attachment E at FUMA-INSPECTION-0036).



See RX-0078 (Photos of Fuma Starter Kit) at RX-0078.19 (annotated in red).

[redacted]



See CRTP Attachment D at Fig. 2.

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses claim element 1(h). *See* Conley '881 Declaration at ¶5 (Independent claim 21 - Recitation 2).

NJOY also admitted that the Fuma Prototype discloses claim element 1h. *See* '881 Priority Chart at 13-14.

j. '881 Patent, Claim 1[i]: "wherein the housing includes a solution holding medium adapted to hold a solution in the interior of the housing"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[a] of the '864 Patent.

k. '881 Patent, Claim 1[j]: "wherein the housing includes a heating element located in the interior of the housing, wherein the heating element extends transversely across the airflow passageway"

The evidence will show that the prior art discloses or renders obvious this limitation for the largely the same reasons that it discloses or renders obvious claim 1[e] of the '864 Patent. In addition to the requirements of claim 1[e] of the '864 patent, this limitation requires that the heating element extend "transversely across the airflow passageway," rather than "transversely to a central longitudinal axis," and the evidence will show that the prior art renders that aspect as well.

NJOY Exhibit 2008.0957
Juul v. NJOY
IPR2024-00161

[redacted]

CX-2110 (Complainant's First Sup. Validity Contentions (03/12/2024)) assert that "the '881 Patent's claims require a heating element that extends transversely *across the airflow passageway*." NJOY First Supplemental Validity Contentions (3/12/2024) at 314 (emphasis in original). Thus, it appears that NJOY agrees with JLI that the heating element must extend from one point on the side surface of the airflow passageway to a second point on the side surface the airflow passageway and the second point is across the first point, for the heating element to extend "across the airflow passageway" as claimed. *See, e.g.,* JX-0632C (Leinsing Opening Rpt.) at ¶¶ 263-265.

1. Xia '610 in view of Wang '554 and Fang '044 and Smoke Fifty-One Duo– '881 Patent, Claim 1[j]

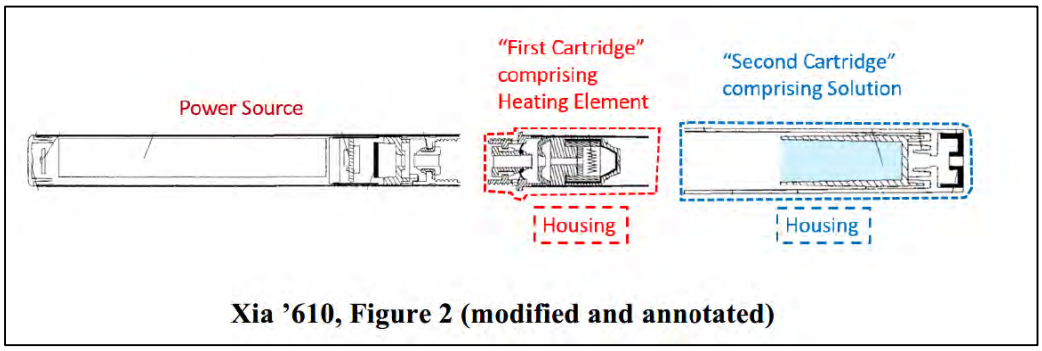
The evidence will show that Xia '610 discloses or renders obvious, alone or in combination with Wang '554 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 175-179; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

For example, Mr. Leinsing will opine that modifying the heating element to extend across the airflow passageway would require merely extending the heating element further to the walls of the chamber in which it sits. *See* JX-0632C (Leinsing Opening Rpt.) at ¶ 263. Doing so would allow the coil to be larger, and therefore have increased heating capacity, holding other things constant. This would also not cause any issues, because a POSITA would understand that the heating chamber in Xia '610 is ceramic or could be made ceramic, and therefore would not be negatively affected by having the heating coil in contact with it. *Id.* The lead wires for the coil could still extend, as they do in Xia's illustrations, toward the conductive portions at the first end of the device, after the coil reaches and touches the sidewalls of the heating chamber.

NJOY Exhibit 2008.0958
Juul v. NJOY
IPR2024-00161

[redacted]

Complainant asserts that Xia '610 does not comprise a cartridge with both the heating element and solution holding medium but is rather a three-piece design with (1) a first cartridge comprising a heating element ("atomizer") and (2) a second cartridge comprising a solution ("replaceable cartridge"). *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-1, ¶ 85. The below represents a version of Figure 2 of Xia that NJOY's expert modified to indicate his allegations regarding Xia, which JLI and Mr. Leinsing disagree with:



Xia '610, Figure 2 (modified and annotated)

See CX-2726C (Vallee Reb. Rpt.) at Appx. A-1, ¶ 85.

Dr. Vallee is incorrect that there is a first and second cartridge; Xia's cartridge is a single unit, described and illustrated as a single "generator" portion. However, as Mr. Leinsing will opine, the disclosure of a three piece design at least renders obvious a two-piece design because of the known benefits of two-piece designs, including increased convenience for users, disposal of atomizers as they lose functionality due to repeated use, and more. *See, e.g.,* JX-0632C (Leinsing Opening Rpt.) at ¶¶ 47-56, 302, 329. Furthermore, Dr. Vallee has testified that two-piece designs were known before the invention of the asserted patents to have advantages over three-piece designs, including lower cost and greater user convenience. *See, e.g.,* RX-1015C (Vallee 4/12/24 Tr.) at 409:25-411:15. Even three piece-designs required frequent replacement of the atomizers.

[redacted]

[redacted]. *See, e.g.,* RX-1015C (Vallee 4/12/24 Tr.) at 411:23-412:8. Dr. Vallee admitted that,

NJOY Exhibit 2008.0959
Juul v. NJOY
IPR2024-00161

[redacted]

contrary to his opinions in his report, a POSITA would have had a reasonable expectation of success in making a two-piece design from a disclosed three-piece electronic cigarette. *See, e.g.,* RX-1015C (Vallee 4/12/24 Tr.) at 414:18-417:18; Vallee Reb. Rpt., Appx. A-1 at ¶ 15.

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '881 Patent, Claim 1[j]

The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 180-183; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

For example, Mr. Leinsing will opine that in rotating the heating element to a horizontal configuration, a POSITA would have been motivated to extend it to the edges of the organic fiber. For example, this allows for more direct contact between the heating element and the solution, and allows the heating element to be larger within the same space. It is also more keeping in line with Wang '554's original design, in which most of the heating coil was in direct contact with the organic fiber.

3. Fang '044 in view of Xia '610 and Wang '554 and Smoke Fifty-One Duo – '881 Patent, Claim 1[j]

The evidence will show that Fang '044 discloses or renders obvious, alone or in combination with Xia '610 and Wang '554 this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 184-186; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici).

For example, Fang '044 discloses the use of an electric heating film wire 16 wound on the temporary oil storage device 15. JX-0595 (Fang '044) at JX-0595.5; *see also* JX-0632C (Leinsing

NJOY Exhibit 2008.0960
Juul v. NJOY
IPR2024-00161

[redacted]

Opening Rpt.) at ¶ 319. Fang '044 illustrates the heating wire as extending fully across the airflow passageway in figures 1 and 2:

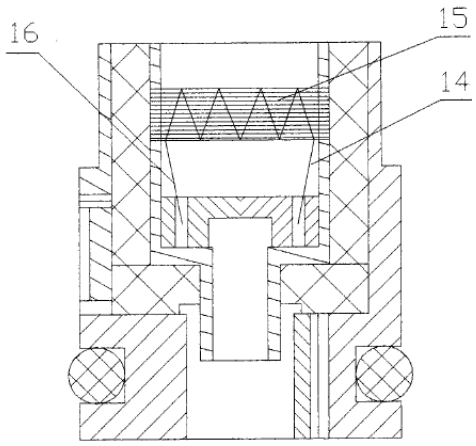


图 2

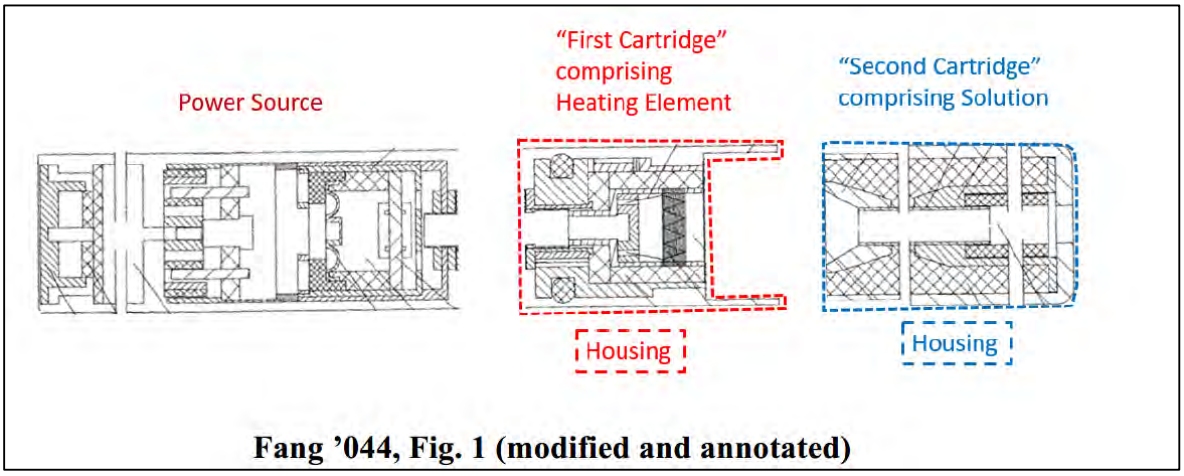
See JX-0595 (Fang '044) at FIG. 2; *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 319.

Additionally, Fang '044 discloses this limitation at least as NJOY interprets the claims (e.g., including by allowing just the wicking material to extend fully across the airflow passageway and still satisfying the claims, such as [redacted]). *See, e.g.,* CX-2157C (Vallee Opening Rpt.) at ¶¶734-744 For example, temporary oil storage device 15 also extends fully across the airflow passageway.

Similar to Xia '610, Complainant asserts that Fang '044 does not comprise a cartridge with both the heating element and solution holding medium but is rather a three-piece design with (1) a first cartridge comprising a heating element 126 and (2) a second cartridge comprising a solution 128. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-3, ¶ 66. The below represents a version of Figure 4 of Fang that NJOY's expert modified to indicate his allegations, which JLI and Mr. Leinsing disagree with:

NJOY Exhibit 2008.0961
Juul v. NJOY
IPR2024-00161

[redacted]



Fang '044, Fig. 1 (modified and annotated)

See CX-2726C (Vallee Reb. Rpt.) at Appx. A-3, ¶ 68.

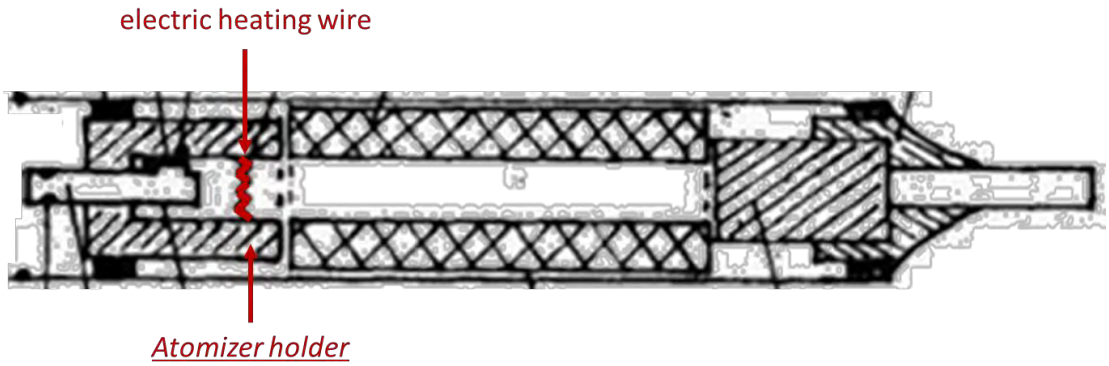
4. Wang '927 in view of Wang '554 and NPRO Style – '881 Patent, Claim 1[j]

The evidence will show that Wang '927 in view of Wang '554 and NPRO Style discloses or renders obvious this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 49-52; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang '927); RX-0005 (Wang '554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style).

For example, Wang '927 discloses the use of electric heating wire 9 and illustrates it as extending fully crosswise across the airflow passageway in FIG. 1, from one point on the atomizer holder to the other end. *Id.*

NJOY Exhibit 2008.0962
Juul v. NJOY
IPR2024-00161

[redacted]



See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end) (annotated in red); *see also* JX-0632C (Leinsing Opening Rpt.) at ¶ 356.

5. Han '364 in view of Fang '044 and NPRO Style – '881 Patent, Claim 1[j]

The evidence will show that Han '364 in view of Fang '044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 54-57; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han '364 certified English Translation) ; JX-0595 (Fang '044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit).

For example, Mr. Leinsing will opine that in rotating the heating element to a horizontal configuration, a POSITA would have been motivated to extend it to the edges of the organic fiber. For example, this allows for more direct contact between the heating element and the solution, and allows the heating element to be larger within the same space. It is also more keeping in line with Han '364's original design, in which most of the heating coil was in direct contact with the organic fiber.

6. Red Dragon in view of Fang '044 and Wang '927 – '881 Patent, Claim 1[j]

The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 47-53; JX-

NJOY Exhibit 2008.0963
Juul v. NJOY
IPR2024-00161

[redacted]

0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, Mr. Leinsing will opine that in rotating the heating element to a horizontal configuration, a POSITA would have been motivated to extend it to the edges of the organic fiber. For example, this allows for more direct contact between the heating element and the solution, and allows the heating element to be larger within the same space. It is also more keeping in line with Red Dragon's original design, in which most of the heating coil was in direct contact with the organic fiber.

7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '881 Patent, Claim 1[j]

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 47-52; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, Mr. Leinsing will opine that in rotating the heating element to a horizontal configuration, a POSITA would have been motivated to extend it to the edges of the organic fiber. For example, this allows for more direct contact between the heating element and the solution, and allows the heating element to be larger within the same space. It is also more keeping in line with Smoke Fifty-One Duo's original design, in which most of the heating coil was in direct contact with the organic fiber.

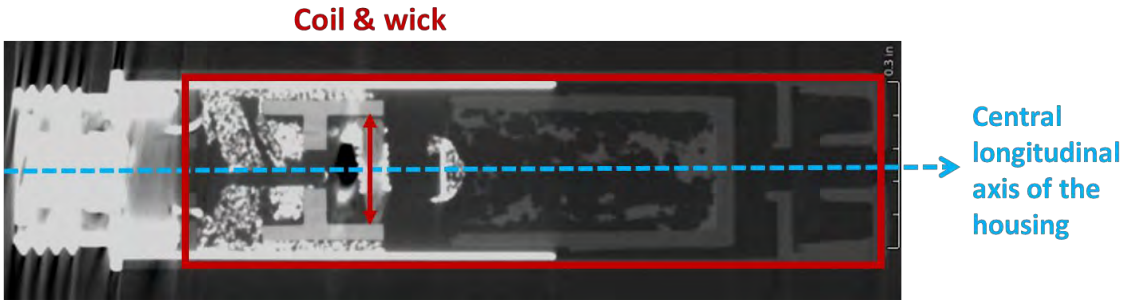
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Juul v. NJOY
IPR2024-00161

[redacted]

8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 1[j]

The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 54-56; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044).

The heating coil with the wick extends crosswise across the ceramic base, at least as NJOY interprets the claims (e.g., including by allowing just the wicking material to extend fully across the airflow passageway and still satisfying the claim, such as [redacted]). *See, e.g.,* RX-0082 (Photos of NJOY NPRO) at RX-0082.67; JX-0404 (NPRO Photos) at JX-0404.16 (annotated); *see also* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶¶ 262-266. For example, the coil and wick extend fully across the ceramic base.



JX-0404 (NPRO Photos) at JX-0404.16 (annotated in red and blue).

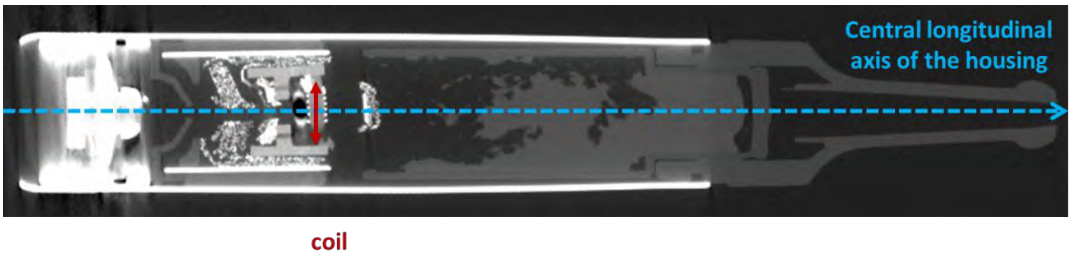
[redacted]



RX-0082 (Photos of NJOY NPRO) at RX-0082.67; *See also* Bonet Depo. Tr. at 259:14-16.

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 1[j]

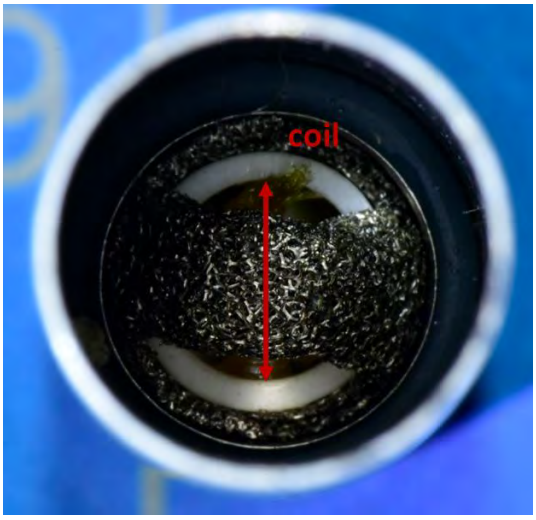
For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 54-56; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.



JX-0402 (CT Scans of NJOY NCIG) at JX-0402.16 (annotated in red and blue).

NJOY Exhibit 2008.0966
Juul v. NJOY
IPR2024-00161

[redacted]



RX-0084 (Photos of NJOY NCIG) at RX-0084.87 (annotated in red).

10. Cigarette Electronique – '881 Patent, Claim 1[j]

The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 69-82; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).

The heating coil with the wick extends across the ceramic base, transverse to the central longitudinal axis of the housing, at least as NJOY interprets the claims (e.g., including by allowing just the wicking material to extend fully across the airflow passageway and still satisfying the claim, such as [redacted]). *See, e.g.,* JX-0632C (Leinsing Opening Rpt.) at ¶ 583.

To the extent that the Cigarette Electronique does not disclose this limitation, it would have been obvious to make the heater extend across the entire airflow passageway, from one point on the side surface to a second point on the side surface. *See* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶ 317. For example, this would increase the size of the heater within the same space, and

NJOY Exhibit 2008.0967
Juul v. NJOY
IPR2024-00161

[redacted]

would not have any negative effects because the ceramic surround can accommodate the heating. *Id.*

This modification would have had predictable results, and a POSITA making it would have had a reasonable expectation of success. For example, this modification is the result of a slight difference in the physical orientation of a heating element that does not introduce any uncertainties as to the functionality of the overall device. For example, it was known in the art to use heating elements oriented in different directions within cartridges, such as disclosed in numerous references including Wang '554 and/or Fang '044, so a POSITA would have understood that this was a viable and predictable way to design the device. *See* JX-0640C (Leinsing Opening Rpt., Appx. G) at ¶ 318.

Complainant asserts that a POSITA would not have been motivated to modify a three-piece e-cigarettte to create a two-piece e-cigarette. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. F, ¶ 44-49. However, Dr. Vallee has testified that two-piece designs were known before the invention of the asserted patents to have advantages over three-piece designs, including lower cost and greater user convenience. See, e.g., RX-1015C (Vallee 4/12/24 Tr.) at 409:25-411:15. Even three piece-designs required frequent replacement of the atomizers. [redacted] See, e.g., RX-1015C (Vallee 4/12/24 Tr.) at 411:23-412:8. Dr. Vallee admitted that, contrary to his opinions in his report, a POSITA would have had a reasonable expectation of success in making a two-piece design from a disclosed three-piece electronic cigarette. See, e.g., RX-1015C (Vallee 4/12/24 Tr.) at 414:18-417:18; Vallee Reb. Rpt., Appx. A-1 at ¶ 15.

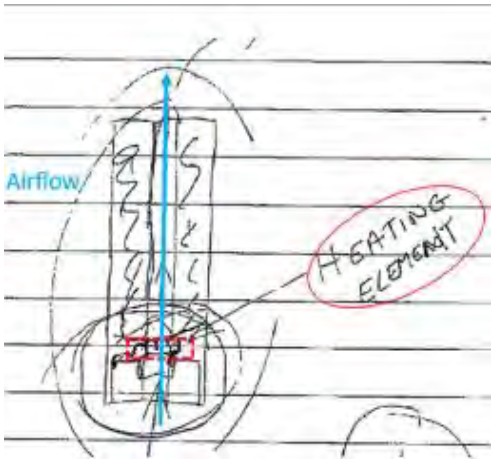
NJOY Exhibit 2008.0968
Juul v. NJOY
IPR2024-00161

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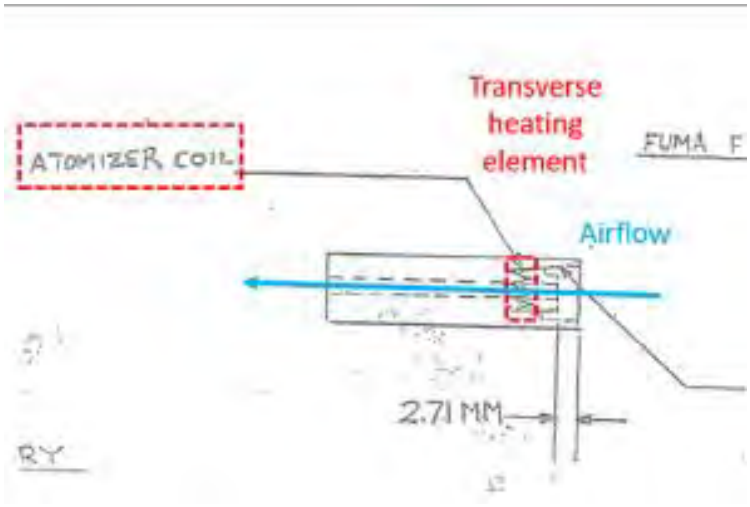
11. Fuma Prototype – '881 Patent, Claim 1[j]

The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 48-50; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

For example, the housing includes a heating coil wrapped around a wick located in the interior of the housing. The heating coil and the coil extend crosswise across the airflow passageway.



See '881 Priority Chart at 16 (citing CRTP Attachment C).



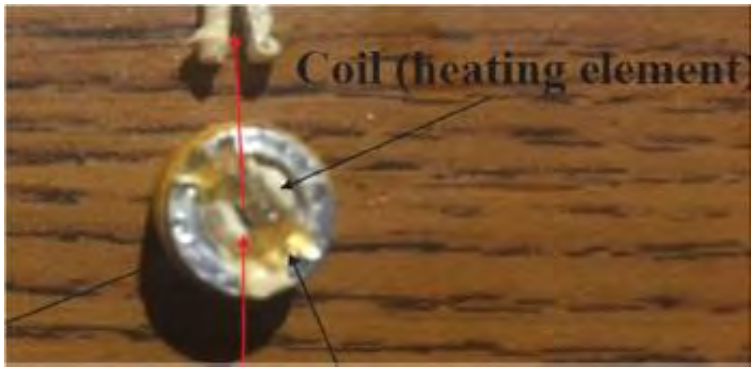
See '881 Priority Chart at 17 (citing CRTP Attachment E at FUMA-INSPECTION-0037.

NJOY Exhibit 2008.0969
Juul v. NJOY
IPR2024-00161

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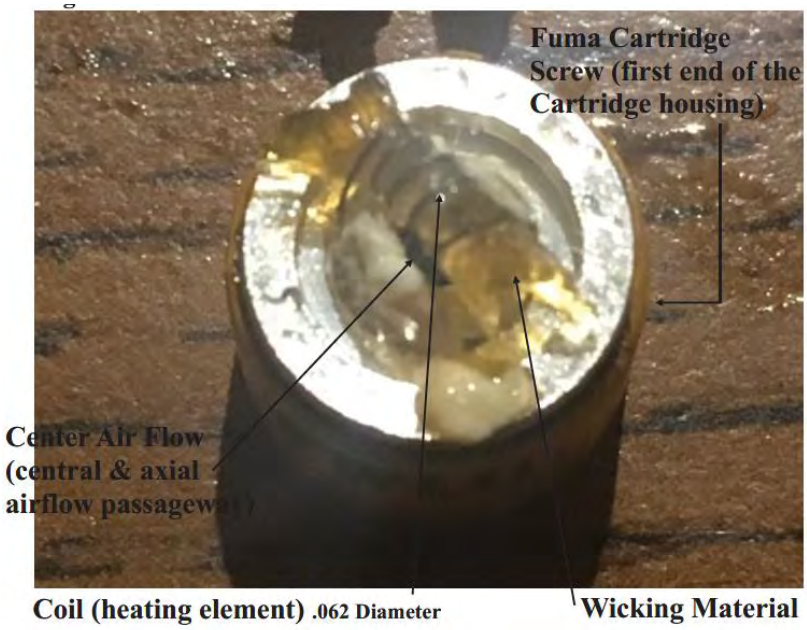


See '881 Priority Chart at 18 (citing CRTP Attachment D at Fig. 6).

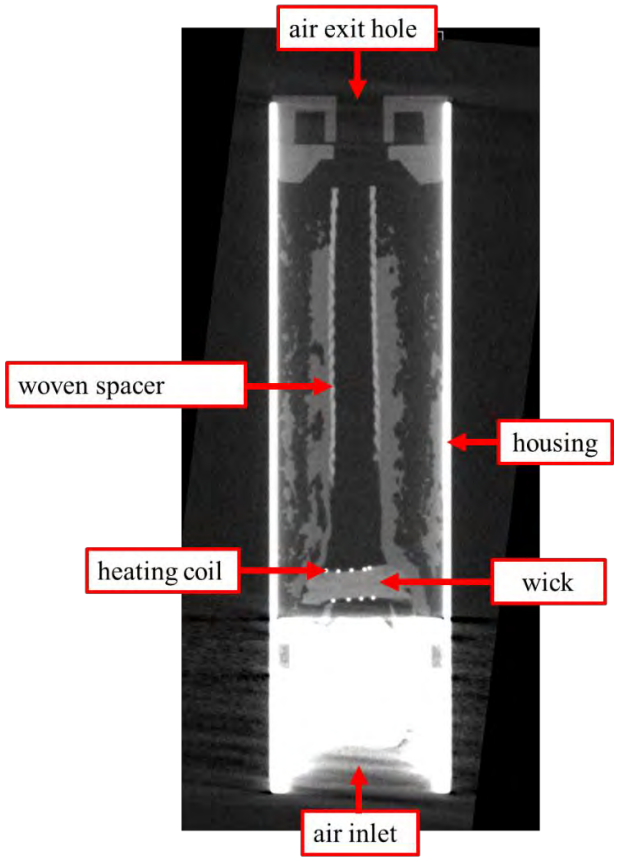


See '881 Priority Chart at 18 (citing CRTP Attachment D at Fig. 13).

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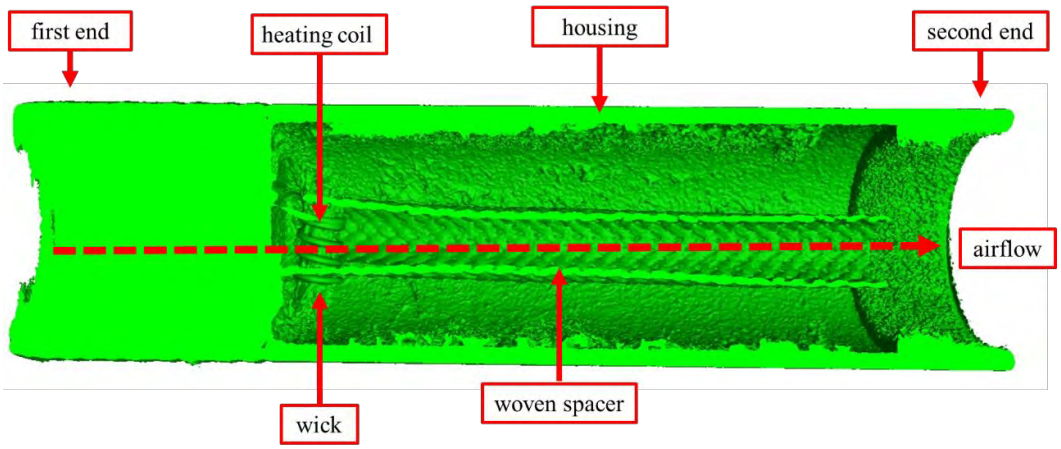
See CRTP Exhibit A at Fig. 14.



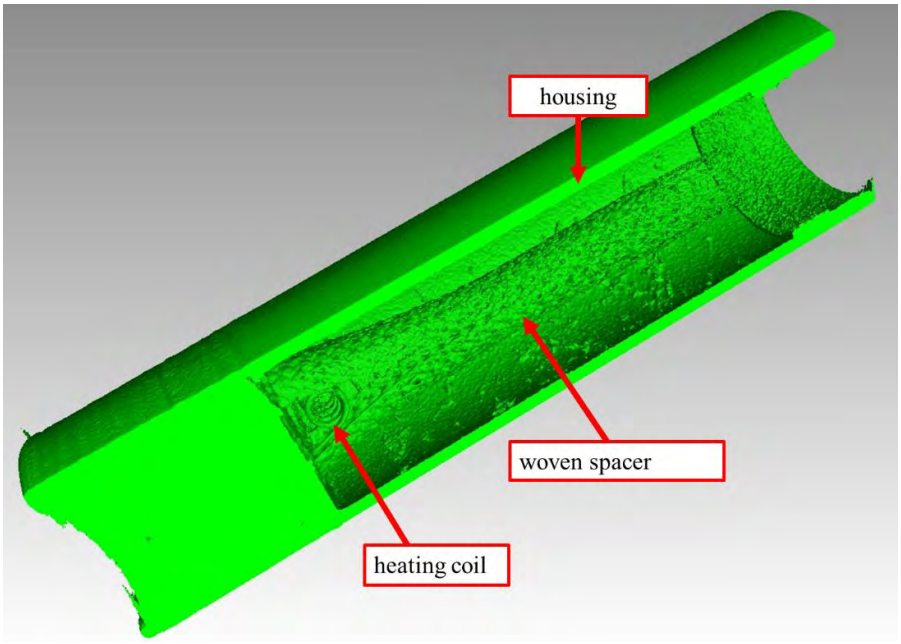
NJOY Exhibit 2008.0971
Juul v. NJOY
IPR2024-00161

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See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.17 (annotated in red).



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.1 (annotated in red).



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.5 (annotated in red).

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses claim element 1(j). *See* Conley '881 Declaration at ¶5 (Independent claim 21 - Recitation 2).

NJOY also admitted that the Fuma Prototype discloses claim element 1j. *See* '881 Priority Chart at 16-18.

NJOY Exhibit 2008.0972
Juul v. NJOY
IPR2024-00161

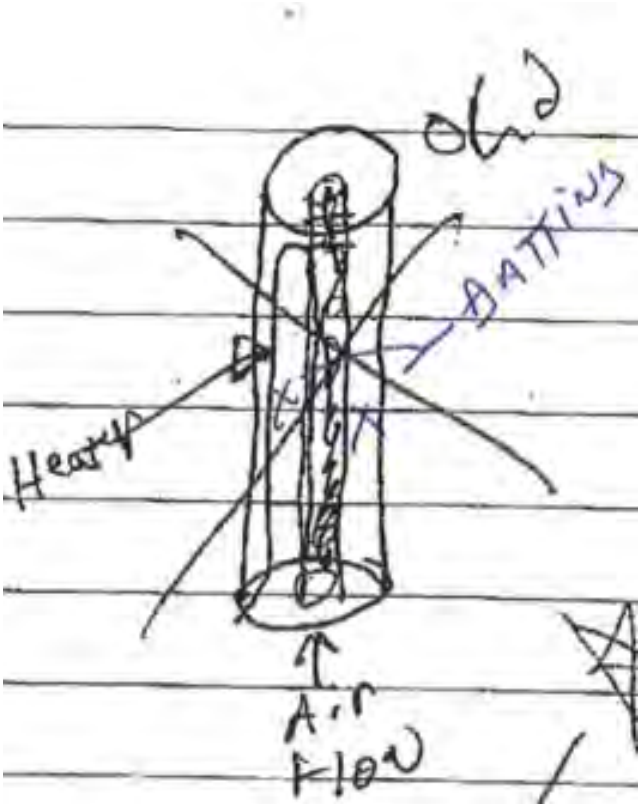
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l. ‘881 Patent, Claim 1[k]: “wherein the airflow through the passageway passes on both transverse sides of the element”

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 25[f] of the ’864 Patent.

m. ‘881 Patent, Claim 1[l]: “wherein the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end,”

First named inventor, Gregory Conley, also testified multiple prior art e-cigarettes existed in which the solution-holding medium surrounded the airflow passageway, further confirming this was a well-known concept. JX-0548 (Conley RJRV Tr.) at 46:19-52:12, 40:12-14, 42:13-19.



See JX-0548 (Conley RJRV Tr.) Ex. 2A (describing prior art “old” device, with “batting” surrounding airflow passageway).

NJOY Exhibit 2008.0973
Juul v. NJOY
IPR2024-00161

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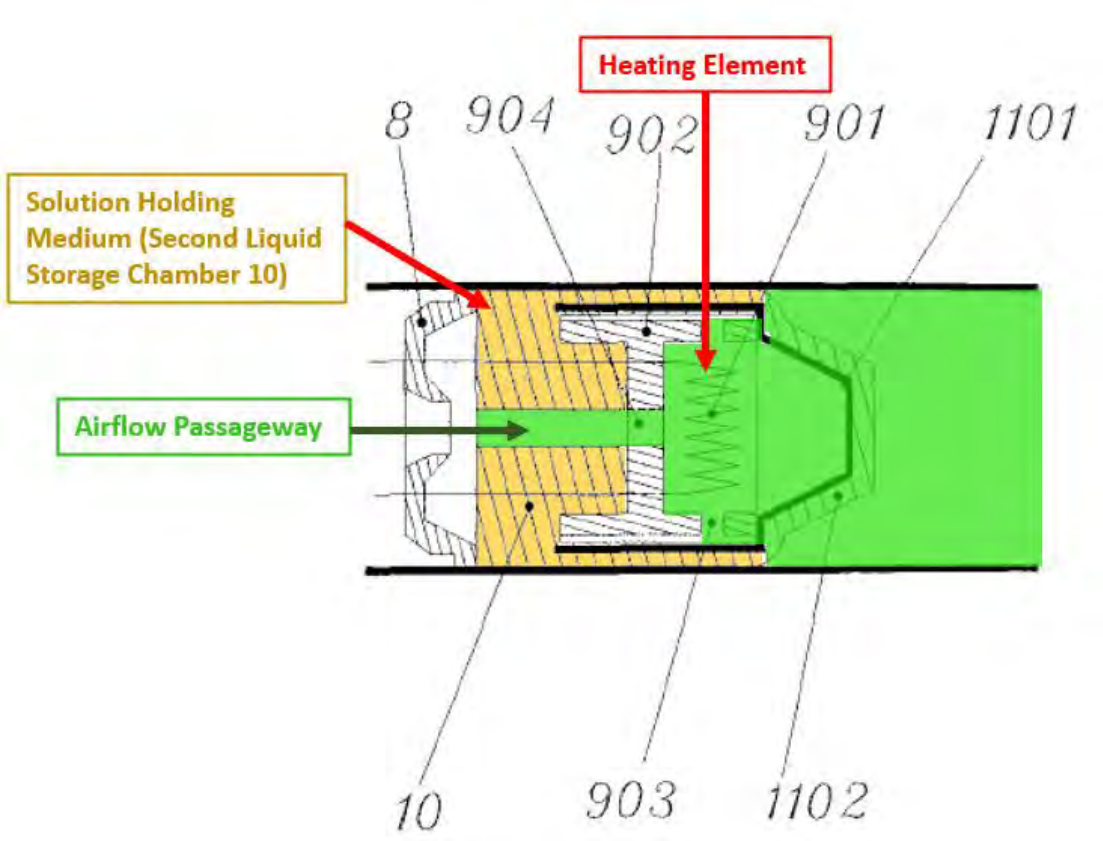
1. Xia ’610 in view of Wang ’554 and Fang ’044 and Smoke Fifty-One Duo– ‘881 Patent, Claim 1[l]

The evidence will show that Xia ’610 discloses or renders obvious, alone or in combination with Wang ’554 and Fang ’044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 202-206; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia ‘610); JX-0595 (Fang ‘044); RX-0130C (Declaration of Yardimici).

Xia ’610’s airflow passageway includes the space surrounding the heater as explained above, and Xia ’610’s solution holding medium includes liquid storage chamber 12 and secondary liquid storage chamber 10. As illustrated in Figure 4 for example, Xia ’610’s solution holding medium 10 surrounds the left portion of the airflow passageway as illustrated and the portion of the airflow passageway in which the heating coil sits in the interior of the housing. Moreover, the airflow passageway surrounds a portion of the airflow passageway that is “intermediate of the first end of the second end” because it is in a location that is between them under NJOY’s interpretation (e.g., allowing merely part of the airflow passageway to be merely partially surrounded). For example, not only is the entire solution holding medium 10 intermediate of the first and second ends of the cartridge but the airflow passageway it surrounds is also: “chemical liquid flows from the liquid storage chamber 12 into the secondary liquid storage chamber 10 through the liquid-guiding mechanism 11, the heater 9 is wrapped with the liquid-guiding mechanism 11.” JX-0596 (Xia ‘610) at JX-0596.10; FIG. 4; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 203.

NJOY Exhibit 2008.0974
Juul v. NJOY
IPR2024-00161

[redacted]



See JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 203.

Dr. Vallee asserts that that solution holding medium does not surround the airflow passageway intermediate of the first and second apertures because the airflow passageway in Xia '610 would extend further and cover the secondary-liquid-chamber 10. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-1, ¶ 97. Firstly, Dr. Vallee's opinion is conclusory and provides no reasons why the airflow passageway would extend to the secondary-liquid-chamber 10, which is part of the claimed "solution holding medium." Dr. Vallee cannot re-define Respondent's positions and argue against those.

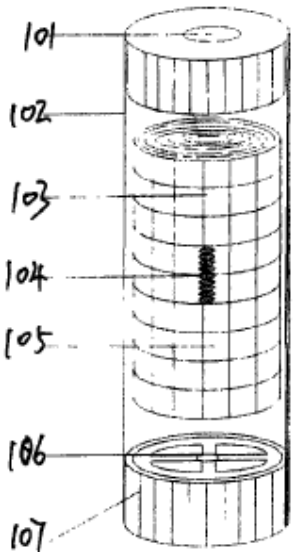
NJOY Exhibit 2008.0975
Juul v. NJOY
IPR2024-00161

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2. Wang ’554 in view of Xia ’610 and Fang ’044 and Smoke Fifty-One Duo – ‘881 Patent, Claim 1[l]

The evidence will show that Wang ’554 discloses or renders obvious, alone or in combination with Xia ’610 and Fang ’044 this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 207-209; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang ‘554); JX-0596 (Xia ‘610); JX-0595 (Fang ‘044); RX-0130C (Declaration of Yardimici).

Because the fiber 105 surrounds and defines the airflow passageway, and it surrounds the heater 104 for the entire length of the heater, which is in a location “intermediate of the first end and the second end” as claimed. Wang ’554 describes the fiber as “wound around” the heater: “[t]he interior of the shell 102 provides a space for the electric heater 104 and the tobacco extract 103 and organic fiber 105 wound around it.” RX-0005 (Wang ‘554) at RX-0005.7; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 209.



See RX-0005 (Wang ‘554) at Fig. 3; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 209.

Complainant asserts that the fiber does not surround the airflow passageway because a portion of the airflow passageway goes alongside the outside of the fiber. *See* CX-2726C (Vallee

NJOY Exhibit 2008.0976
Juul v. NJOY
IPR2024-00161

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Reb. Rpt.) at Appx. A-2, ¶ 72. However, as Mr. Leinsing will opine, this would have been an obvious modification. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 778. Instead of requiring the air to flow through the fiber, a more defined central passageway would increase airflow through the cartridge, and decrease the likelihood that the air would acquire liquid drops when passing through the fiber material, which would be undesirable for a user to receive when sucking. Moreover, at least as NJOY interprets the claims and "surrounds the airflow passgeway," (e.g., allowing just a portion of the airflow passageway to be surrounded[35]), this limitation is met because the portion of the airflow passageway that goes within the fiber is surrounded.

3. Fang '044 in view of Xia '610 and Wang '554 and Smoke Fifty-One Duo – '881 Patent, Claim 1[l]

The evidence will show that Fang '044 discloses or renders obvious, alone or in combination with Xia '610 and Wang '554 this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 210-213; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici).

Fang '044 discloses a solution holding medium in the form of oil conservator 7 and at least oil storage device 14. Both the oil storage device 14 and the oil conservator 7 surround the airflow passageway in a region intermediate of the first end and the second end, as claimed under NJOY's interpretation (e.g., allowing merely part of the airflow passageway to be surrounded).

[35] For example, [redacted].

NJOY Exhibit 2008.0977
Juul v. NJOY
IPR2024-00161

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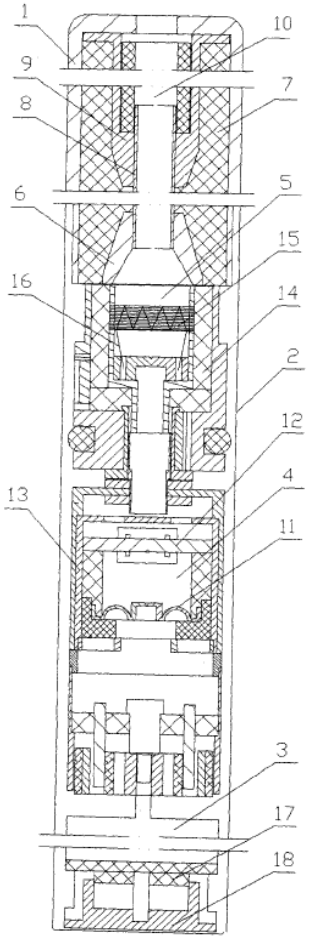


图 1

See JX-0595 (Fang '044) at FIG. 1; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 211.

Based on their "two cartridge" assertion in claim 1[j], Dr. Vallee incorrectly argues that the oil storage device 14 does not surround the airflow passageway and the heating element. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-3, ¶ 73*; see also* Section IV.G.2.i.k (claim 1[j]). Specifically, because the oil storage device 14 is not part of the sucker, which Dr. Vallee claims as the "Second Cartridge", the oil storage device does not surround the airflow passageway and heating element. *Id.* However, as described in claim 1[j], Dr. Vallee is incorrect that there is a first a second cartridge. *Id.*

NJOY Exhibit 2008.0978
Juul v. NJOY
IPR2024-00161

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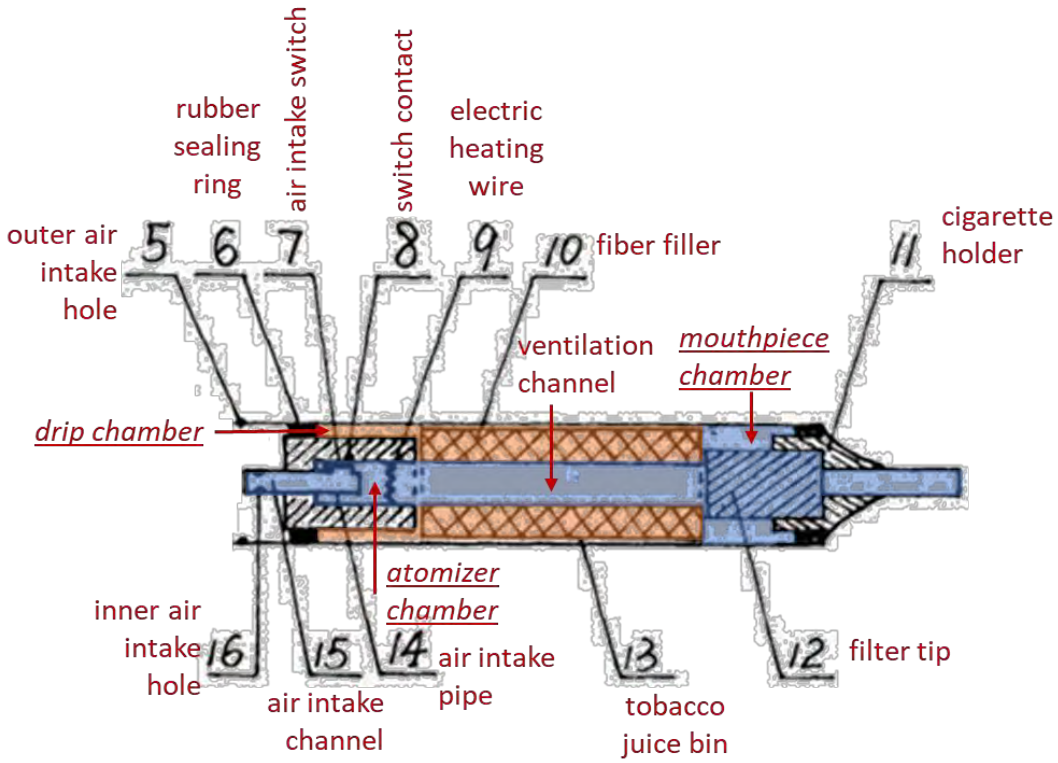
4. Wang ’927 in view of Wang ’554 and NPRO Style – ‘881 Patent, Claim 1[l]

The evidence will show that Wang ’927 in view of Wang ’554 and NPRO Style discloses or renders obvious this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 57-59; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang ’927); RX-0005 (Wang ’554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style).

For example, as shown in the illustration below, the fiber filler surrounds the ventilation channel under NJOY’s interpretation (e.g., allowing merely part of the airflow passageway to be merely partially surrounded). *Id*. Further, it would be obvious and beneficial to a POSITA to extend include fiber filler in the drip chamber as indicated in the figure below. *See id*.; JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶ 59. For example, including fiber filler in the drip chamber would prevent leakage of tobacco juice from the cartridge. JX-0594 (Wang ’927) at Fig. 1 and JX-0594.3-5. Further, add fiber filler to the drip chamber would prevent the heated vapor or heat from the electric heating wire from heating up the inner wall of the casing, which is typically a highly conductive thin metal, as is in Wang ’927 and in many other prior art devices. *Id*. The solution holding medium acts as a barrier and insulator, which reduces heat loss and the sensation of the device warming. *Id*. Therefore, the user will not feel the device being heated, as the solution is vaporized. *Id*. Such a solution also maintains the temperature of the vapor in a more predictable and consistent way in colder environments. *Id*. Lastly, the additional surface area exposure of the liquid to the atomizer holder/wick allows for improve fluid flow rate to assure the fluid is delivered to the electric heating wire for vaporization. *Id*. This is also shown in other prior art where a metal mesh brings fluid from the top of the bridge to the wall of the vaporization chamber. *Id*.

NJOY Exhibit 2008.0979
Juul v. NJOY
IPR2024-00161

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See JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end) (annotated in red, orange, and blue); *see also* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶ 59.

Complainant disagrees with these modifications as such additions would add both cost and weight to the device. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. B, ¶ 94. However, as Dr. Leinsing will explain, these are more than outweighed by the added benefit of the changes, and adding any beneficial components to any device will likely increase the weight and/or cost, but there is still motivation to improve devices. For example, by that logic, no new features would be added to any devices of any kind because adding components increases cost and weight.

5. Han '364 in view of Fang '044 and NPRO Style – '881 Patent, Claim 1[l]

The evidence will show that Han '364 in view of Fang '044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 62-64; JX-

NJOY Exhibit 2008.0980
Juul v. NJOY
IPR2024-00161

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0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han '364 certified English Translation) ; JX-0595 (Fang '044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit).

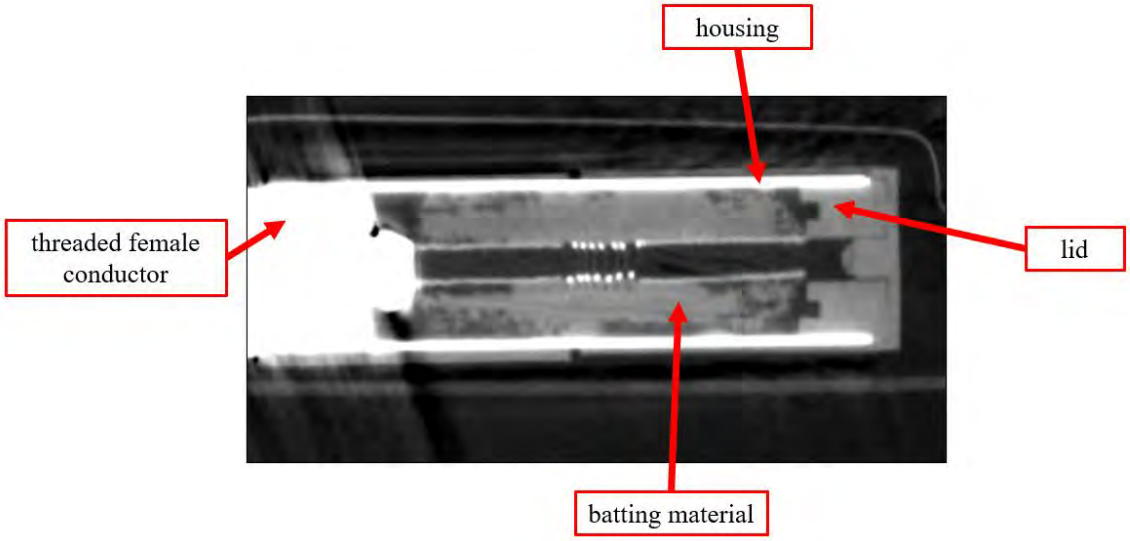
For example, Han '364 discloses fire-resistant fiber 5 and filling fiber 44, both of which surround both filament 6/49 (i.e., the heating element) and the airflow passageway. *See* JX-0631 (Han '364 certified English Translation) at [0013]-[0014]. Han '364 also discloses fiber containing liquid 35, wire mesh 21, and projected wire mesh 22, all of which cumulatively surround both the filament 23 and the airflow passageway. *See id.*, at [0014]; *see also* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 377-381.

6. Red Dragon in view of Fang '044 and Wang '927 – '881 Patent, Claim 1[l]

The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 57-59; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927).. For example, the batting material in the RD surrounds the heating coil, wicking material, and woven spacers under NJOY's interpretation of "surround". *See, e.g.,* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶ 60.

NJOY Exhibit 2008.0981
Juul v. NJOY
IPR2024-00161

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See RX-0077 at RX-0077.22 (annotated); *see also* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶ 60.

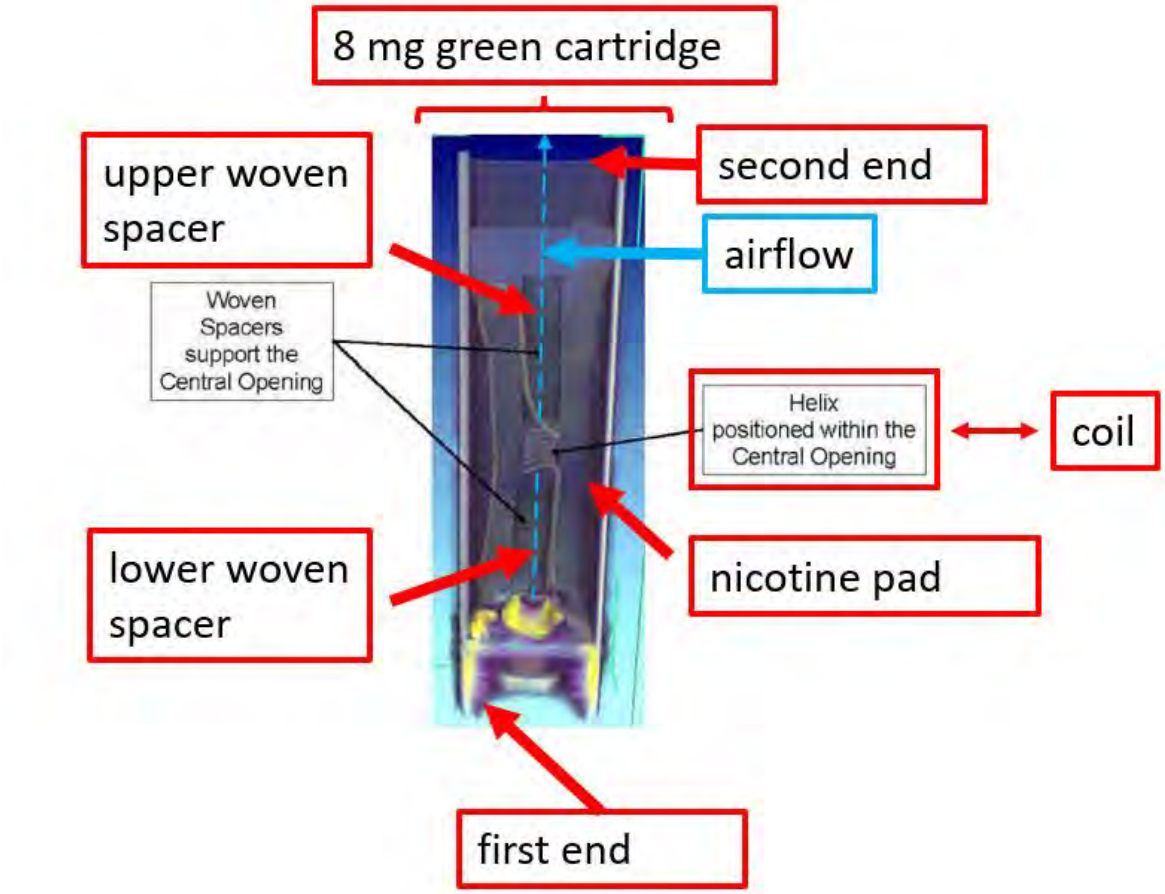
7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '881 Patent, Claim 1[l]

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 57-59; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927).

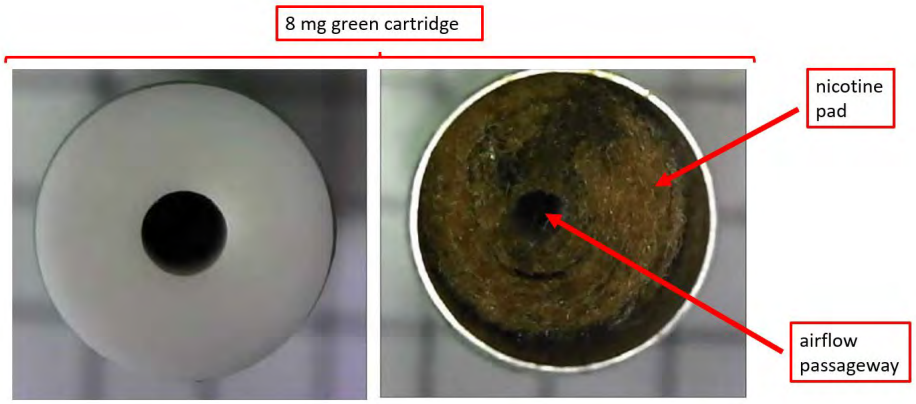
For example, the nicotine pad surrounds the woven spacers, wicking material, and heating coil under NJOY's interpretation of "surround". *See, e.g,* JX-0636C (Leinsing Invalidity Rpt., Appx. D) at ¶ 58.

NJOY Exhibit 2008.0982
Juul v. NJOY
IPR2024-00161

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See RX-0130C (Declaration of Yardimici) at RX-0130C.29; *see also* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶ 58.



See RX-0130C (Declaration of Yardimici) at RX-0130C.30; *see also* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶ 58.

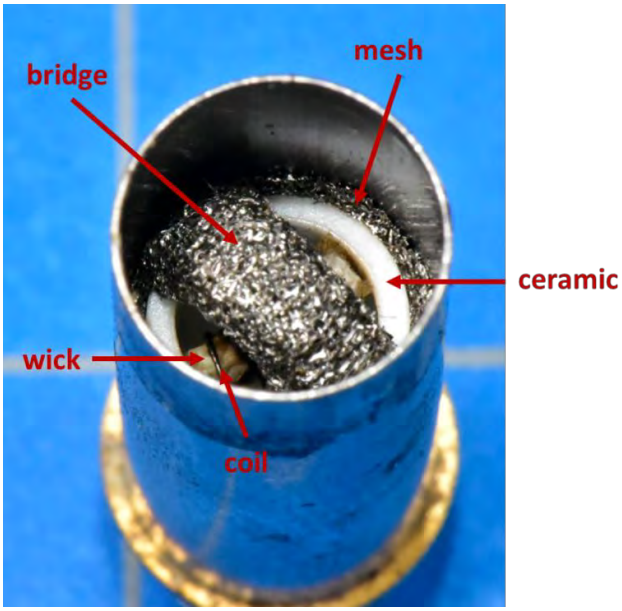
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Juul v. NJOY
IPR2024-00161

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8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 1[l]

The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 60-63; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044).

The mesh surrounds a portion of the airflow passageway and the heating coil and therefore discloses this limitation under NJOY's interpretation (e.g., allowing merely part of the airflow passageway to be merely partially surrounded). *Id.*



See RX-0082 (Photos of NJOY NPRO) at RX-0082.67 (annotated in red); *see also* JX-0640C (Leinsing Opening Rpt., Appx. F) at ¶ 62.

Additionally, as explained above with respect to '864 Patent claim 25[l], a POSITA would have been motivated to modify the NPRO to include a central through hole in which air would

NJOY Exhibit 2008.0984
Juul v. NJOY
IPR2024-00161

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flow. *See e.g.,* Section IV.G.1.xiii.mm *supra*. With such modifications, the modified solution holding medium would also surround the airflow passageway and the heating element under NJOY's interpretation. *Id*.

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 1[l]

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 60-63; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.

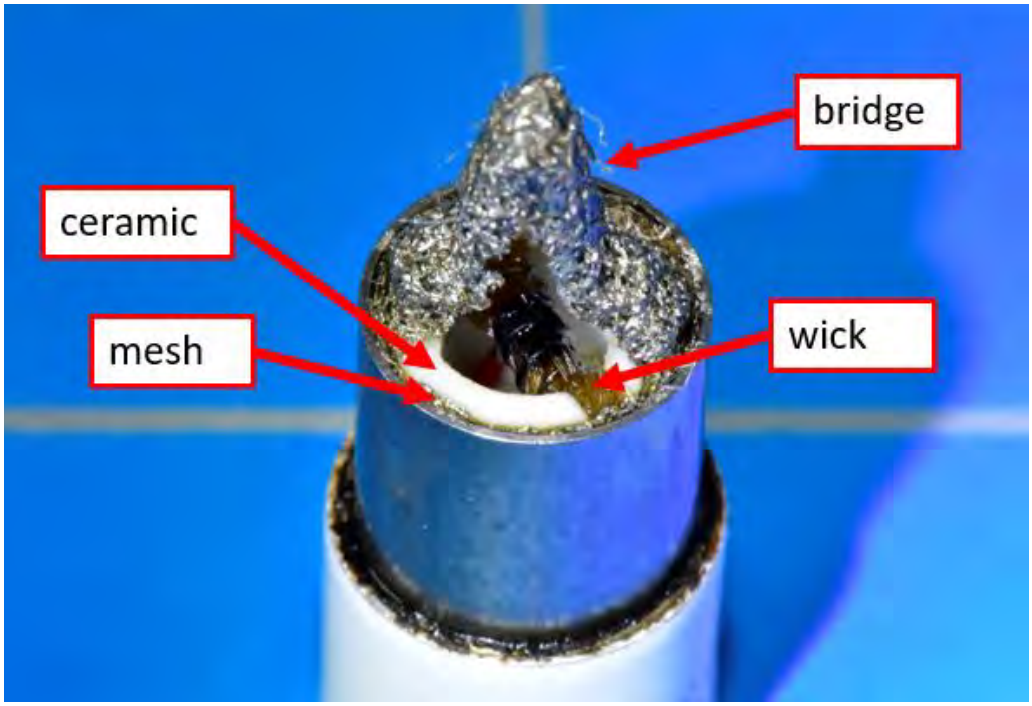
10. Cigarette Electronique – '881 Patent, Claim 1[l]

The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 88-91; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).

Under NJOY's interpretation (e.g., allowing merely part of the airflow passageway to be merely partially surrounded), for example, the solution holding medium includes the batting material, the bridge, and the mesh surrounding the ceramic. The mesh surrounding the ceramic serves as part of the solution holding medium that surrounds the airflow passageway and the heating element interior of the housing and intermediate of the first end and the second end as claimed. For example, as can be *See*n in the following image, the mesh surrounds the heating element:

NJOY Exhibit 2008.0985
Juul v. NJOY
IPR2024-00161

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See CX-2763 at CX-2763.9; *see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶ 90.

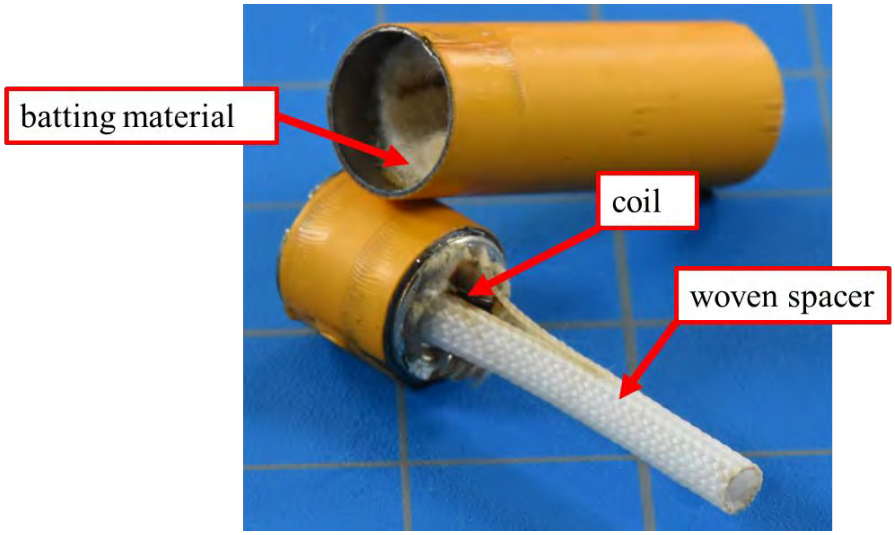
11. Fuma Prototype – '881 Patent, Claim 1[l]

The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 56-59; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

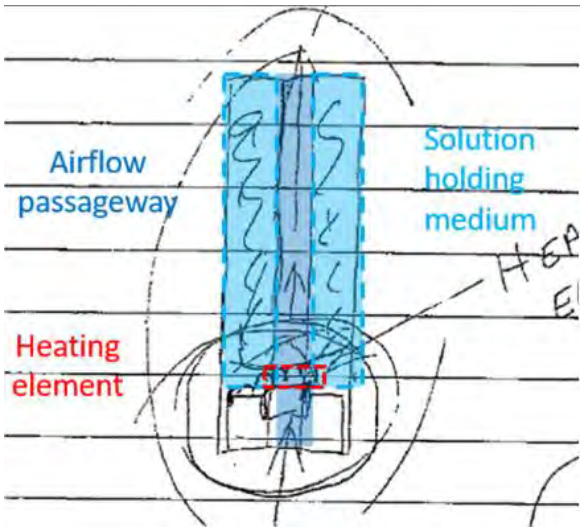
For example, the batting material of the Fuma Cartridge surrounds the woven spacer and the heating coil in the interior of the housing between the air inlet and the air exit hole.

NJOY Exhibit 2008.0986
Juul v. NJOY
IPR2024-00161

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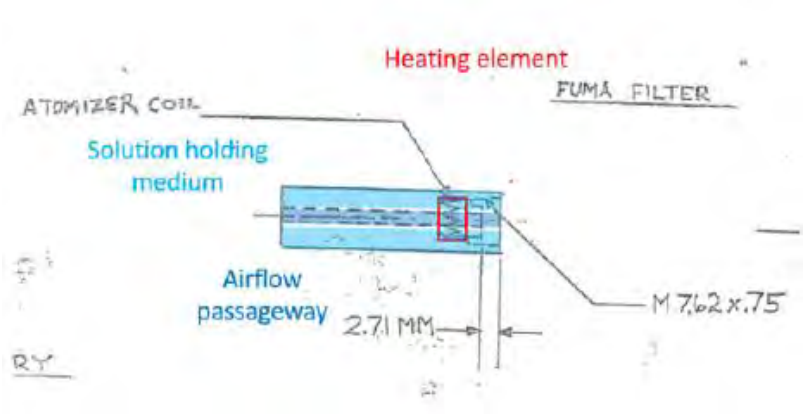
See RX-0078 (Photos of Fuma Starter Kit) at RX-0078.18 (annotated in red).



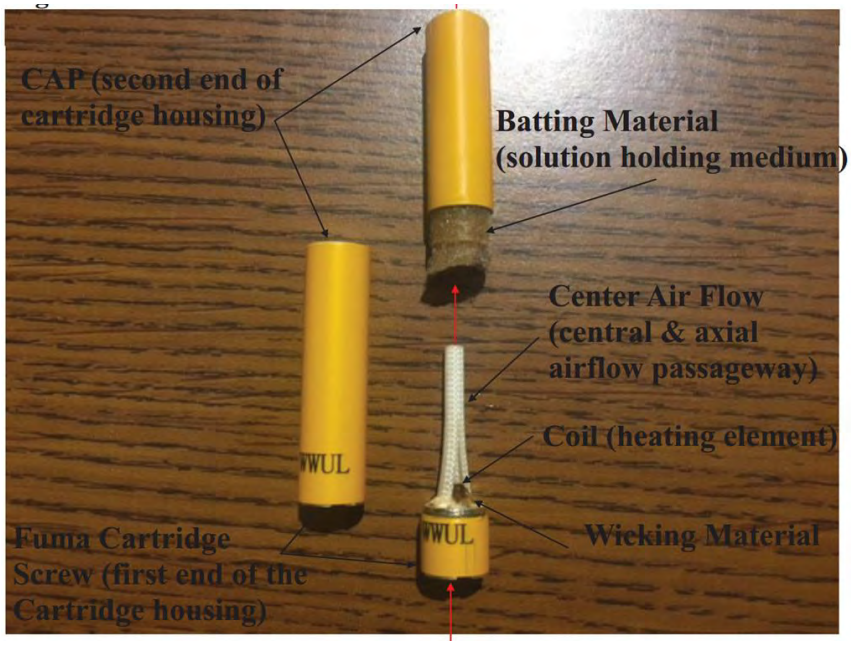
See '881 Priority Chart at 21 (citing CRTP Attachment C).

NJOY Exhibit 2008.0987
Juul v. NJOY
IPR2024-00161

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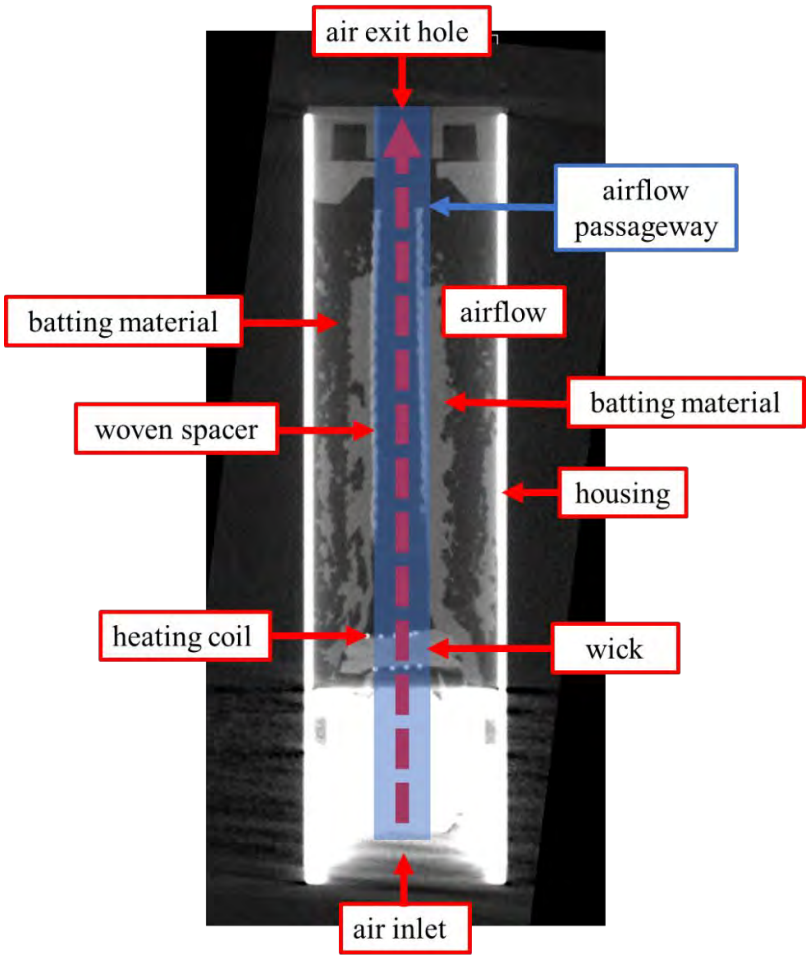
See '881 Priority Chart at 22 (citing CRTP Attachment E at FUMA-INSPECTION-0037).



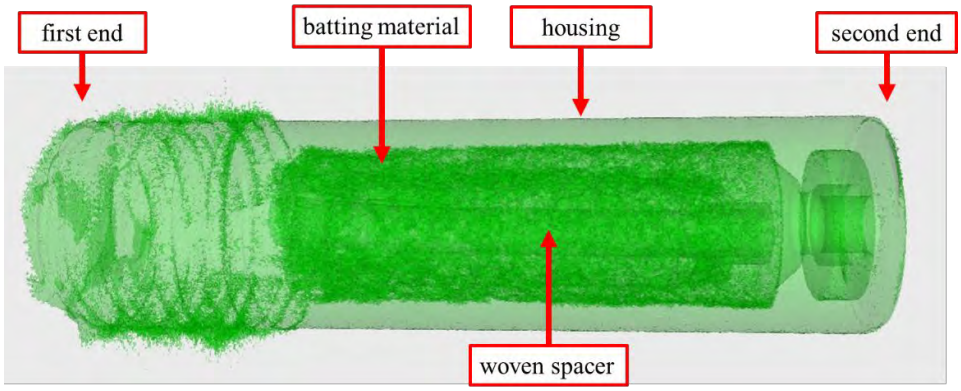
See '881 Priority Chart at 22 (citing CRTP Attachment D at Fig. 8).

NJOY Exhibit 2008.0988
Juul v. NJOY
IPR2024-00161

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See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.17 (annotated in red).



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.41 (annotated in red).

NJOY Exhibit 2008.0989
Juul v. NJOY
IPR2024-00161

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The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses claim element 1(k). *See* Conley '881 Declaration at ¶5 (Independent claim 21 - Recitation 2). NJOY also admitted that the Fuma Prototype discloses claim element 1k. *See* '881 Priority Chart at 21-22.

n. '881 Patent, Claim 1[m and n]: "wherein the heating element is electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[f and g] of the '864 Patent.

o. '881 Patent, Claim 1[o]: "responsive to electrical power received from the battery through the electrically conductive portions of the cartridge and the power source"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claims 1[h] and 1[c] and 2 of the '864 Patent.

p. '881 Patent, Claim 16[pre]: "[a] cartridge configured to mechanically and electrically couple to a power source of an electronic vaporizer, the cartridge comprising"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[h] of the '881 Patent.

q. '881 Patent, Claim 16[a]: "a housing having an interior and a solution holding medium adapted to hold a solution in the interior of the housing"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[a] of the '864 Patent.

NJOY Exhibit 2008.0990
Juul v. NJOY
IPR2024-00161

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r. '881 Patent, Claim 16[b]: "the housing having a first end and a second end that is opposite the first end, the housing having a central longitudinal axis extending through the first end and the second end, the housing having a first aperture on the first end and a second aperture on the second end"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[e] of the '881 Patent.

s. '881 Patent, Claim 16[c]: "the first aperture having a cross-sectional area measured perpendicular to the central longitudinal axis of the housing"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[e] of the '881 Patent. For example, by having first apertures, the prior art necessarily discloses or renders obvious the first apertures having a cross sectional area measured perpendicular to the central longitudinal axis.

t. '881 Patent, Claim 16[d]: "the first end of the housing having an electrically conductive portion adapted to mechanically and electrically couple to an electrically conductive portion of the power source"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[h] of the '881 Patent.

u. '881 Patent, Claim 16[e]: "an airflow passageway in the interior of the housing, the airflow passageway having a length extending centrally and axially with respect to the housing intermediate of the first aperture on the first end of the housing and the second aperture on the second end of the housing"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[i] and claim 1[j] of the '864 Patent.

NJOY Exhibit 2008.0991
Juul v. NJOY
IPR2024-00161

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v. '881 Patent, Claim 16[f]: "the airflow passageway being configured to allow an airflow through the cartridge from the first aperture to the second aperture of the housing"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[j] of the '864 Patent.

w. '881 Patent, Claim 16[g]: "the airflow passageway having an exterior adjacent to the solution holding medium along a majority of the length of the airflow passageway"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[l] of the '881 Patent. For example, by surrounding the airflow passageway, the solution holding medium is necessarily adjacent to the exterior of the airflow passageway.

x. '881 Patent, Claim 16[h]: "the airflow passageway having an interior having a uniform cross-sectional area measured perpendicular to the central longitudinal axis of the housing and extending continuously along a majority of the length of the airflow passageway"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 16 of the '864 Patent.

y. '881 Patent, Claim 16[i]: "a heating element located in the interior of the housing and extending transversely across the airflow passageway"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[j] of the '881 Patent.

z. '881 Patent, Claim 16[k]: "a plane perpendicular to the central longitudinal axis of the housing passing through the heating element and the solution holding medium"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[l] of the '881 Patent. For example,

NJOY Exhibit 2008.0992
Juul v. NJOY
IPR2024-00161

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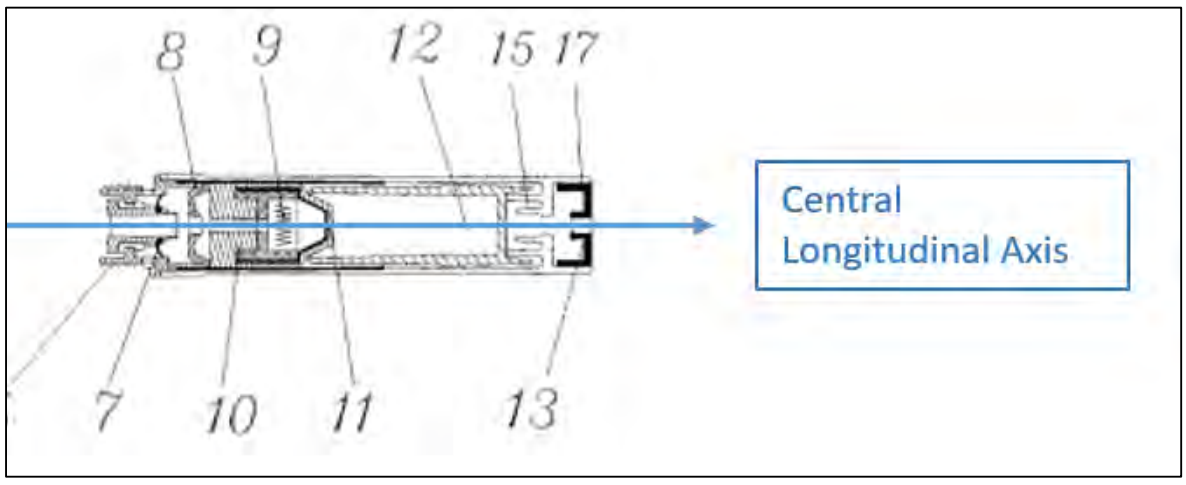
because the solution holding medium surrounds the heating element, a plane perpendicular to the central longitudinal axis necessarily passes through both.

aa. '881 Patent, Claim 16[l]: "the airflow passageway having an interior between the heating element and the second aperture no smaller in cross-sectional area than the cross-sectional area of the first aperture"

1. Xia '610 in view of Wang '554 and Fang '044 and Smoke Fifty-One Duo– '881 Patent, Claim 16[l]

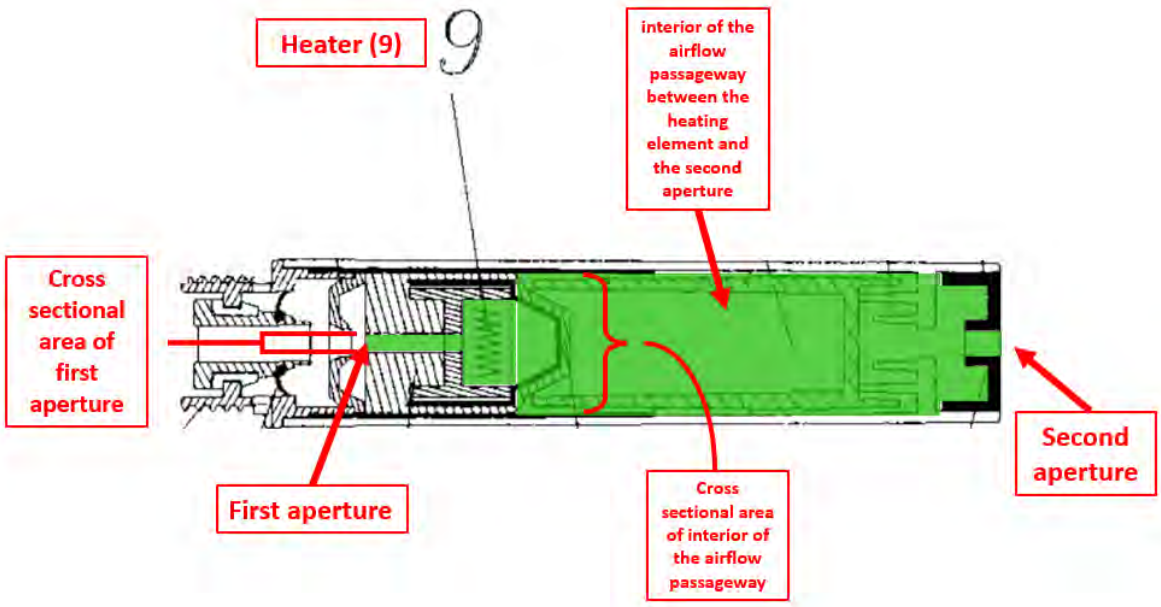
The evidence will show that Xia '610 discloses or renders obvious, alone or in combination with Wang '554 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 302-304, 504-505; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

For example, as described above under NJOY's interpretation, and as illustrated in the following annotated figures, Xia '610 discloses the cross-sectional area of the airflow passageway between the heating coil and the second aperture no smaller than the cross-sectional area of the first aperture. As also shown (and described above), the first aperture is located centrally and axially with respect to the housing.



NJOY Exhibit 2008.0993
Juul v. NJOY
IPR2024-00161

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See JX-0596 (Xia '610) at Fig. 2; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 303.

Complainant asserts that the cross-sectional area of the overflow holes 903, which are positioned between the heating element and the second aperture, are smaller than the first aperture. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-1, ¶¶ 109-110. However, Complainant ignores that the airflow goes through both overflow holes as well as around the bridge portion 11, and that there can be more overflow holes not illustrated (because they would be in other cross sections, e.g., if they are evenly spaced around a circulee), so the relative size of a single overflow hole to the second aperture does not preclude this limitation from being disclosed, let alone rendered obvious.

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '881 Patent, Claim 16[l]

The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 this limitation. *See* JX-0633C (Leinsing Opening Rpt.,

NJOY Exhibit 2008.0994
Juul v. NJOY
IPR2024-00161

Appx. A) at ¶ 305-307, 504-505; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

Wang '554's airflow passageway and second aperture are equal to or larger than the first aperture. For example, as illustrated in the figures, the diameter of the airflow passageway is at least as large as the diameter of the first aperture 106. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 306. For example, the heater coil is illustrated as having the same diameter as the first aperture, and the airflow passageway that surrounds the heater must be larger than the diameter of the heater, so the diameter of the airflow passageway must be larger than that of the first aperture.

To the extent Wang '554's airflow passageway interior is not seen as equal to or larger than the area of the first aperture, Mr. Leinsing will opine that a POSITA would have found it obvious to modify Wang '554 such that the cross-sectional area of the airflow passageway is not smaller than that of the first aperture to improve pressure drop and airflow exiting the device. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 307.

Complainant argues that the fiber swells with the addition of tobacco extract. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-2, ¶¶ 80, 128-129. Therefore, a POSITA would understand that any opening through the center of the fiber would contract and result in a passageway with a cross-sectional area smaller than the air inlet 106. However, Dr. Vallee does not support this assertion or explain how the device works if there is such significant swelling; for example, with such significant swelling, similar swelling would block all airflow through the cigarette holder portion and mean the device is inoperable. Therefore, as Mr. Leinsing will opine, a POSITA would understand that the organic fiber is chosen so there is minimal swelling.

NJOY Exhibit 2008.0995
Juul v. NJOY
IPR2024-00161

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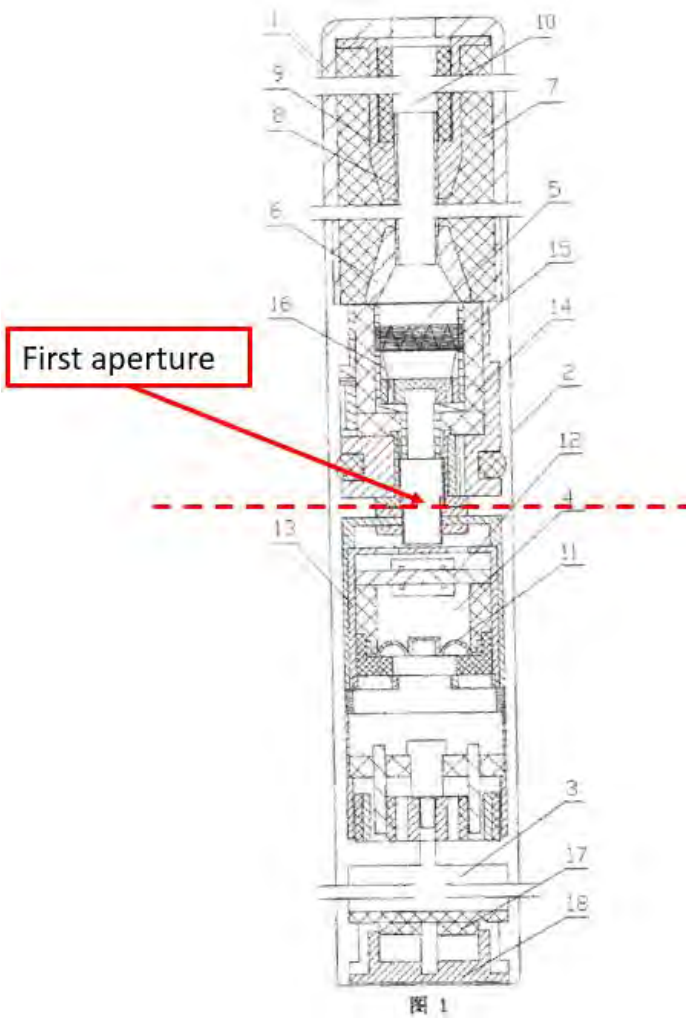
3. Fang ’044 in view of Xia ’610 and Wang ’554 and Smoke Fifty-One Duo – ‘881 Patent, Claim 16[l]

The evidence will show that Fang ’044 discloses or renders obvious, alone or in combination with Xia ’610 and Wang ’554 this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 308-310, 504-505; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang ‘044); JX-0596 (Xia ‘610); RX-0005 (Wang ‘554); RX-0130C (Declaration of Yardimici).

For example, the disclosed aperture in Fang 044 that serves as the first aperture in a cartridge configuration has a cross sectional area that is perpendicular to the central longitudinal axis as illustrated in figure 1. The interior of the airflow passageway between the heating wire and the second aperture is no smaller than the cross sectional area of the first aperture as illustrated:

NJOY Exhibit 2008.0996
Juul v. NJOY
IPR2024-00161

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See JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 309.

Complainant asserts that Mr. Leinsing does not provide any analysis to compare the cross section of the "first aperture" with the cross section of the "interior of the airflow passageway between the heating wire and the second aperture." *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-3, ¶ 93-95, 136. However, as Mr. Leinsing will explain, the relative sizes of the first aperture and the interior of the airflow passageway are clear from the figures.

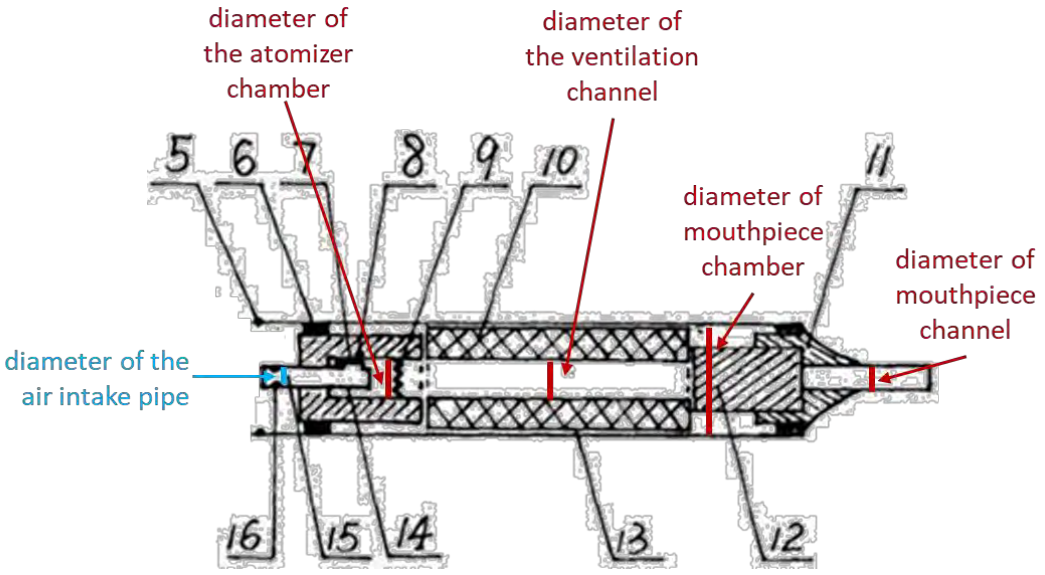
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Juul v. NJOY
IPR2024-00161

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4. Wang '927 in view of Wang '554 and NPRO Style – '881 Patent, Claim 16[l]

The evidence will show that Wang '927 in view of Wang '554 and NPRO Style discloses or renders obvious this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 83-84, 183-184; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang '927); RX-0005 (Wang '554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style).

For example, as shown in Fig. 1 of Wang '927, each of the cross-sectional area of the atomizer chamber, the ventilation channel, the mouthpiece chamber, and the mouthpiece channel, indicated by the diameter of these components, is no smaller than the cross-sectional area of the air intake pipe 14 or the modified air intake pipe measured perpendicular to a central longitudinal axis of the casing as shown in the annotation below. *Id.*



See, e.g., JX-0594 (Wang '927) at Fig. 1 (cropped to only show the tail end) (annotated in red and blue); *see also* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶ 84.

NJOY Exhibit 2008.0998
Juul v. NJOY
IPR2024-00161

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Complainant asserts that both ends of air intake pipe 14 are closed and therefore no aperture exists. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. B, ¶ 186-187. However, as Mr. Leinsing will explain, this is incorrect, and the air intake pipe has open ends.

5. Han '364 in view of Fang '044 and NPRO Style – '881 Patent, Claim 16[l]

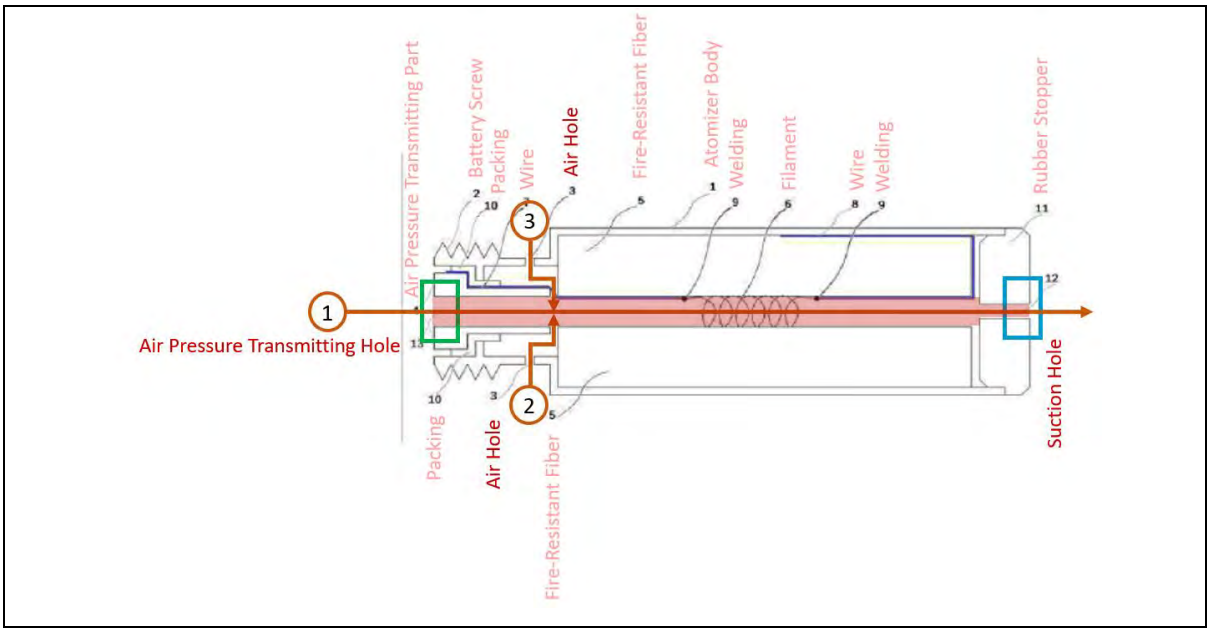
The evidence will show that Han '364 in view of Fang '044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 85-87, 192-194; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han '364 certified English Translation) ; JX-0595 (Fang '044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit).

For example, Han '364 discloses an airflow passageway including a length between the filament 6 and the suction hole 12; at least a portion of that length has a diameter that is at least the same size as the diameter of the first aperture. *See* JX-0631 (Han '364 certified English Translation) at FIG. 1; *see also* JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶ 86, 193

Complainant asserts that air enters the device through air flow holes 3 which have a cross-section parallel, not perpendicular, to a central longitudinal axis of the housing. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. C, ¶ 118, 192. However, Complainant's arguments are directed to different apertures than those identified as the claimed apertures. Complainant cannot redefine Respondent's positions and then assert the claims are not met.

NJOY Exhibit 2008.0999
Juul v. NJOY
IPR2024-00161

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JX-0631 (Han '364 certified English Translation) at FIG. 1; *see also* JX-0632C (Leinsing Invalidity Rpt.) at ¶ 375.

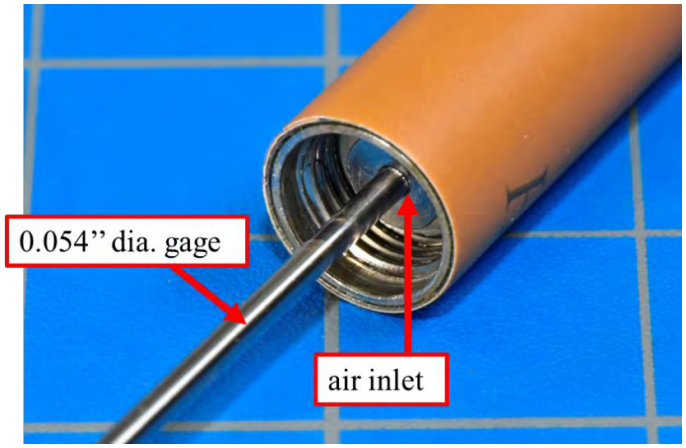
6. Red Dragon in view of Fang '044 and Wang '927 – '881 Patent, Claim 16[l]

The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 83-87, 182-183; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, the largest pin gage that can go through the air inlet is the 0.054'' diameter gage.

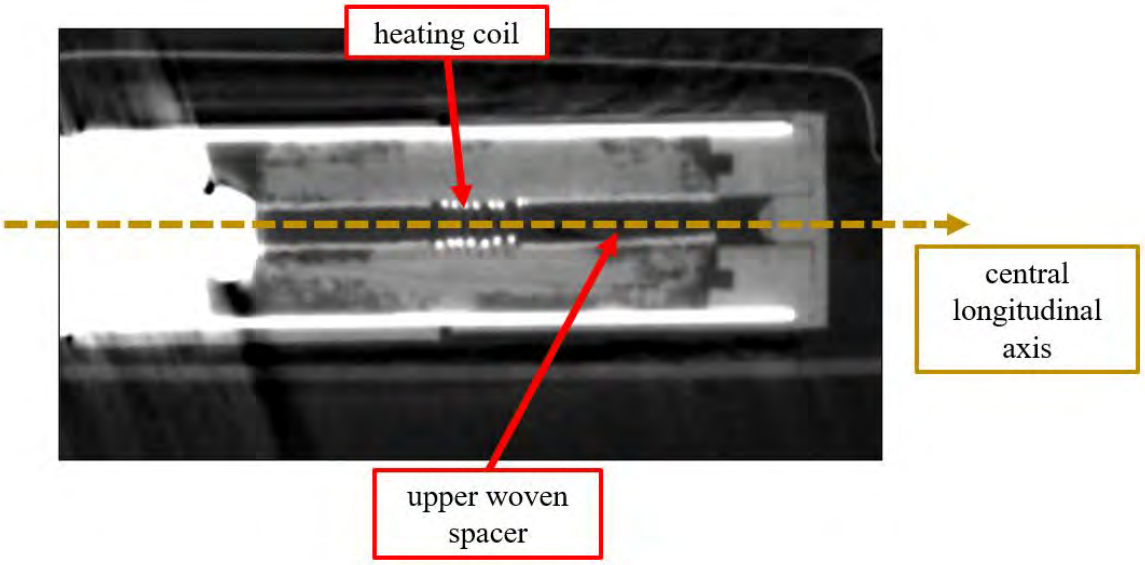
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Juul v. NJOY
IPR2024-00161

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See RX-0074 (Photos of Red Dragon Kit #1) at RX-0074.31 (annotated in red); *see also* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶ 87.

Based on measurements of the CT scans, the diameter of the interior of the airflow passageway between the heating coil and the air exit hole is roughly 0.09" in diameter.



See RX-0077 at RX-0077.22 (annotated in red); *see also* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶ 88.

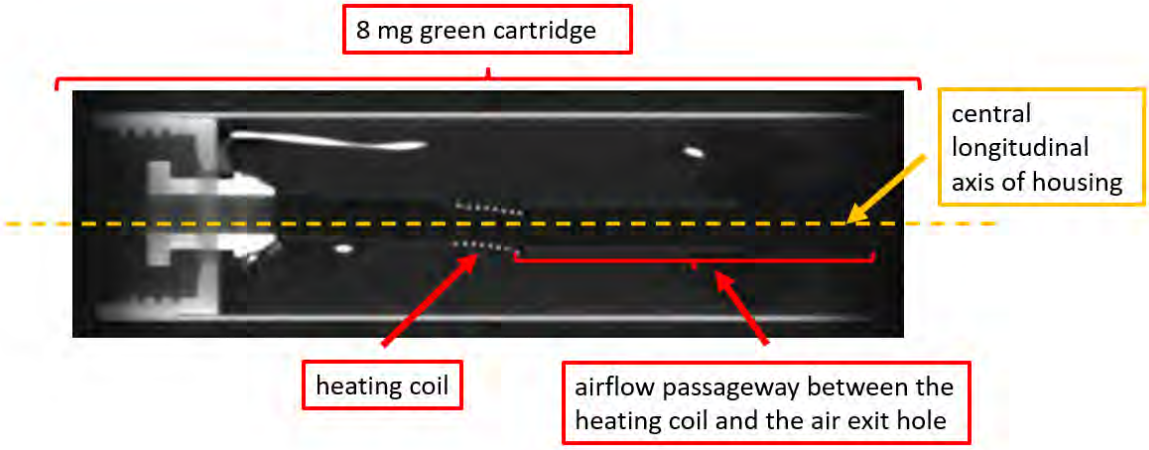
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Juul v. NJOY
IPR2024-00161

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7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '881 Patent, Claim 16[l]

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 83-87, 182-183; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927).

A CT scan shows that the cross-sectional area of the air inlet hole is measured perpendicular to a central longitudinal axis of the housing. Furthermore, the CT scan shows that the housing includes an airflow passageway, wherein the airflow passageway includes an interior extending between the heating element and the air exit hole.



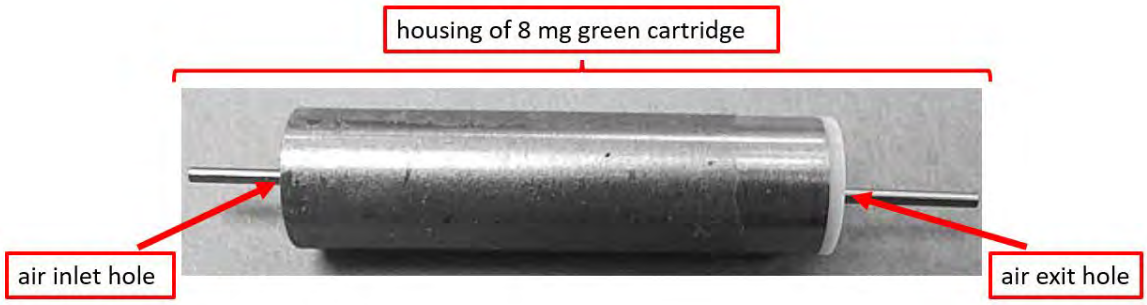
See RX-0130C (Declaration of Yardimici) at RX-0130C.38; *see also* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶ 85.

Additionally, a photo shows a 0.040" gage pin passing through the air inlet hole, the airflow passageway, and the air exit hole all at once. A POSITA would understand that, for the gage pin to pass through the air inlet hole, the airflow passageway, and the air exit hole all at once, the cross-

NJOY Exhibit 2008.1002
Juul v. NJOY
IPR2024-00161

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sectional area of the interior of the airflow passageway between the heating element and the air exit hole must be no smaller than the cross-sectional area of the air inlet hole.



See RX-0130C (Yardimici Declaration) at RX-0130C.42 (annotated in red); *see also* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶ 86.

NJOY contends that Mr. Leinsing does not provide any sizes or measurements of the first aperture. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. D, ¶ 62-64. However, as Mr. Leinsing will opine, specific sizes are not required, merely relative sizes.

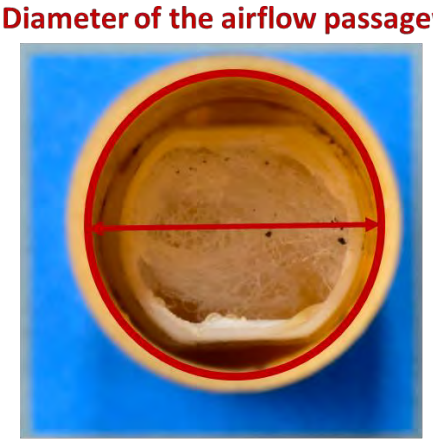
8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 16[l]

The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 188-189; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044).

Because the first aperture and the airflow passageway have circular cross sections, the diameter of the first aperture and the airflow passageway represents their cross-sectional areas. As shown below, the diameter of the first aperture is smaller than the diameter of the airflow passageway.

NJOY Exhibit 2008.1003
Juul v. NJOY
IPR2024-00161

[redacted]



See RX-0082 (Photos of NJOY NPRO) at RX-0082.83 (annotated in red) *see also* JX-0640C (Leinsing Opening Rpt., Appx. F) at ¶ 85.



See JX-0404 (NPRO Photos) at JX-0404.16. (annotated); *see also* JX-0640C (Leinsing Opening Rpt., Appx. F) at ¶ 85.

Complainant disagrees that the diameter of the first aperture is smaller than the diameter of the airflow passageway. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. G, ¶ 91-92. Specifically, Complainant contorts the airflow passageway to include the winding structure of the airflow passageway. *Id.* However, Mr. Leinsing will opine that Complainant's interpretation of the airflow passageway is incorrect because the alleged airflow passageway is defined by the circular wall of the housing.

NJOY Exhibit 2008.1004
Juul v. NJOY
IPR2024-00161

[redacted]

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 16[l]

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 188-189; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.

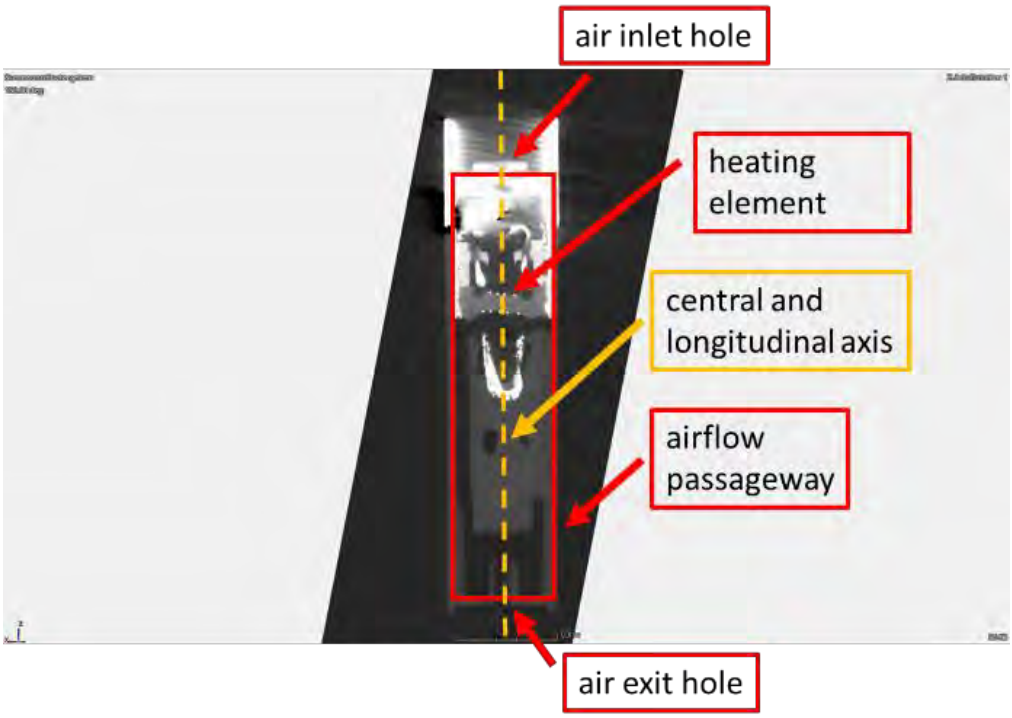
10. Cigarette Electronique – '881 Patent, Claim 16[l]

The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 222-223; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).

For example, the CT scan below shows a central and longitudinal axis of the housing, as well as the first aperture and the second aperture. A POSITA would understand that the first aperture is "perpendicular" to the central longitudinal axis of the housing, such that the first aperture has a cross-sectional area measured perpendicular to the central longitudinal axis of the housing. The CT scan also shows the interior of the airflow passageway between the heating element and the second aperture.

NJOY Exhibit 2008.1005
Juul v. NJOY
IPR2024-00161

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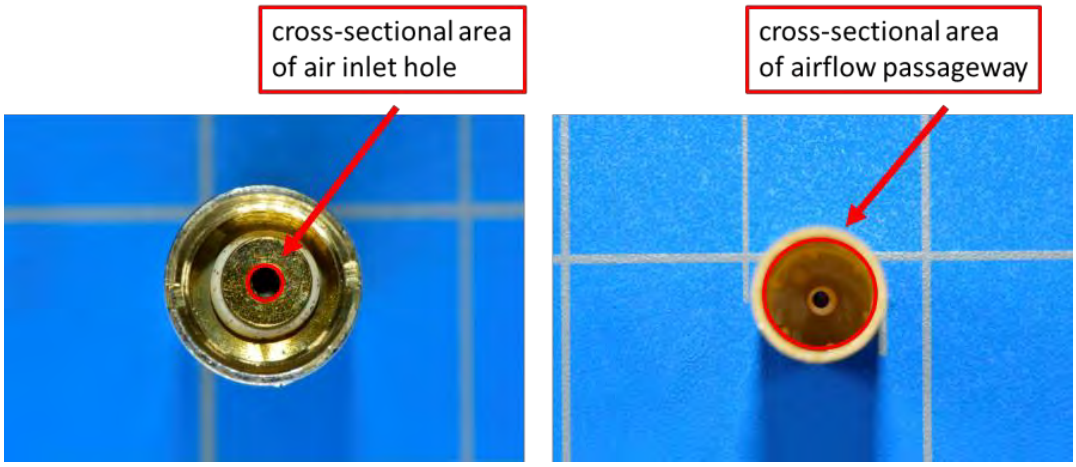


See JX-0401 (Photos of Cigarette Electronique) at JX-0401.5 (annotated in red and yellow)*; see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶ 119.

The two photos below show the cross-sectional area of the first aperture (left) and the cross-sectional area of the airflow passageway (right). As discussed in I.A.1.5, the airflow passageway is defined by the circular wall of the housing, at least a portion of which is shown in the second photo (right). Based on the CT scan showing the interior of the airflow passageway between the heating element and the second aperture, the photo of the cross-sectional area of the first aperture, and the photo of the airflow passageway, a POSITA would understand that the cross-sectional area of the interior of the airflow passageway between the heating element and the second aperture is no smaller than the cross-sectional area of the first aperture.

NJOY Exhibit 2008.1006
Juul v. NJOY
IPR2024-00161

[redacted]



See RX-0072 at RX-0072.35; RX-0072 at RX-0072.102 (annotated in red and yellow).

Complainant disagrees that the diameter of the first aperture is smaller than the diameter of the airflow passageway. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. F ¶ 65-66, 136-137. Specifically, Complainant contorts the airflow passageway to wind around various internal components, such as the liquid storage portions. *Id.* However, Mr. Leinsing will opine that Complainant's interpretation of the airflow passageway is incorrect because the airflow passageway is defined by the circular wall of the housing as alleged. Dr. Vallee cannot re-define Respondent's allegations to argue against them.

11. Fuma Prototype – '881 Patent, Claim 16[l]

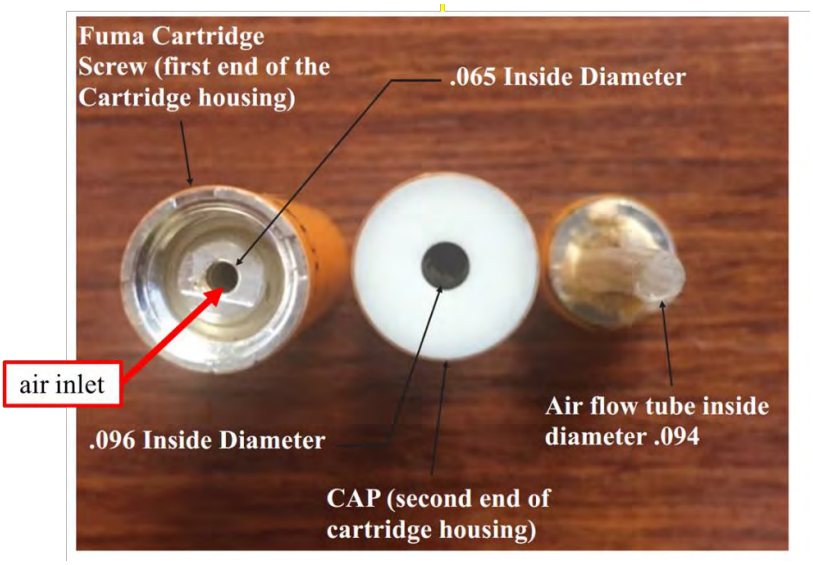
The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 171; 82-86; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

Because both the first aperture and the airflow are circular, the diameter of the first aperture and the airflow passageway can be used as the proxy for their cross-sectional areas.

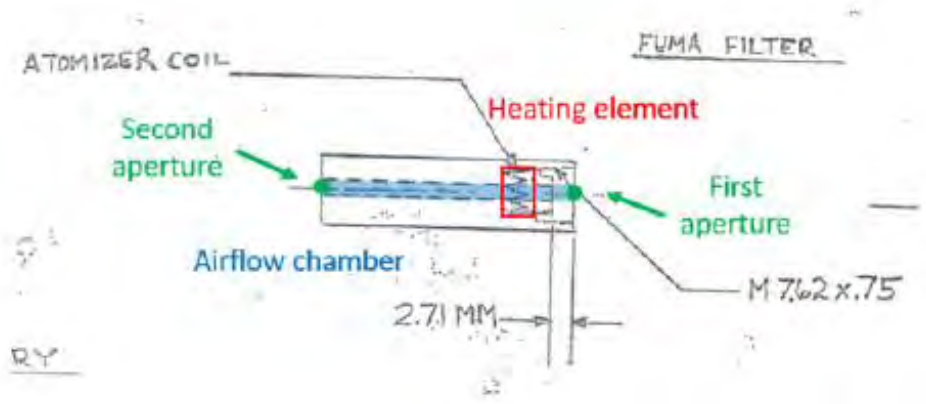
NJOY Exhibit 2008.1007
Juul v. NJOY
IPR2024-00161

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For example, in the annotations in CRTP Exhibit A, the air inlet has an inside diameter of 0.065" while the cap has an inside diameter of 0.096". The woven spacer is further annotated with an inside diameter of 0.094".

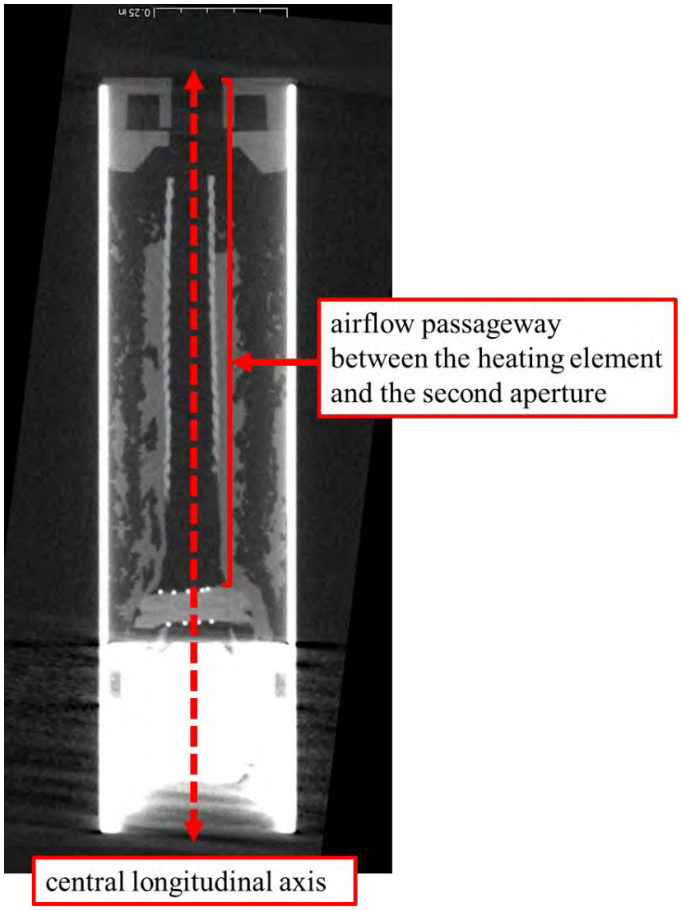


See '881 Priority Chart at 30 (citing CRTP Attachment D at Fig. 15) (annotated in red).

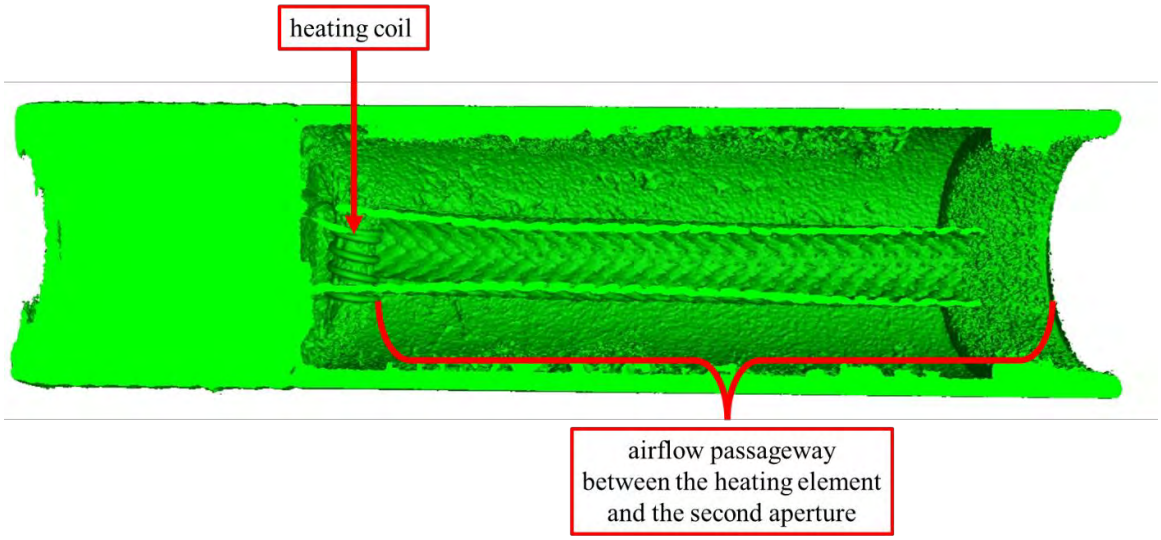


See '881 Priority Chart at 30 (citing CRTP Attachment E at FUMA-INSPECTION-0037) (blue annotation of "Airflow chamber" shows the airflow passageway).

[redacted]



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.17 (annotated in red).



NJOY Exhibit 2008.1009
Juul v. NJOY
IPR2024-00161

[redacted]

See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.1 (annotated in red).

Because the diameter of the air inlet (0.065") is smaller than the diameter of the portion of the airflow passageway between the heating element (i.e., the diameter of the woven spacer, which is 0.094") and the air exit hole (0.096"), the interior of the woven spacer between the heating coil and the air exit hole is larger in cross-sectional area than the cross-sectional area of the air inlet.

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses claim element 3(b). *See* Conley '881 Declaration at ¶5 (Dependent claim 23).

NJOY also admitted that the Fuma Prototype discloses claim element 3b. *See* '881 Priority Chart at 30-31.

bb. '881 Patent, Claim 16[m]: "the heating element being connected to the electrically conductive portion of the first end of the housing"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[h] and 1[m]-1[o] of the '881 Patent. For example, because the electrically conductive portion of the first end of the housing is electrically coupled to the power source, and because the heating element is configured to vaporize solution in response to electricity received from the power source, the heating element must necessarily be electrically connected to the conductive portion.

cc. '881 Patent, Claim 16[n and o]: "the heating element being electrically configured to vaporize at least a portion of the solution to be contained in the solution holding medium for oral provision to an individual in an airflow from the second aperture"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[f and g] of the '864 Patent.

NJOY Exhibit 2008.1010
Juul v. NJOY
IPR2024-00161

[redacted]

dd. '881 Patent, Claim 16[p]: "responsive to electrical power received from the power source through the electrically conductive portion of the cartridge"

The evidence will show that the prior art discloses or renders obvious this limitation for the same reasons that it discloses or renders obvious claim 1[h] of the '864 Patent. For example, the electrical power received from the power source is transmitted through the electrically conductive portion of the cartridge, as described with respect to claim 2 of the '864 Patent and claim 16[m] of the '881 Patent.

ee. '881 Patent, Claim 18[a]: "[t]he cartridge of claim 16, wherein the heating element is a coil having a maximum diameter"

For example, as discussed above with respect to '864 Patent, claim 25[e], the evidence will show that the prior art discloses or renders obvious the heating element includes a coil. Additionally, a coil necessarily includes a maximum diameter. *See, e.g.,* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 269.

ff. '881 Patent, Claim 18[b]: "and the uniform cross-sectional area of the airflow passageway is a circle having a diameter"

1. Xia '610 in view of Wang '554 and Fang '044 and Smoke Fifty-One Duo – '881 Patent, Claim 18[b]

The evidence will show that Xia '610 discloses or renders obvious, alone or in combination with Wang '554 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 277-278, 533-535; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

A POSITA would understand that, because the figures are cross sections, the body of Xia '610's generator is cylindrical, meaning the airflow passageway defined therein is a large hollow cylindrical path, and therefore has a circular cross section. For example, Xia '610 discloses that the "liquid storage chamber 12 is a cylindrical object," and it is illustrated within and in the same

NJOY Exhibit 2008.1011
Juul v. NJOY
IPR2024-00161

manner as the airflow passageway, indicating that the passageway is cylindrical. JX-0596 (Xia '610) at JX-0596.15. Xia '610's airflow passageway, under NJOY's interpretation (which allows obstructions) has a uniform circular cross-section between the heating coil and the second aperture, which constitutes a majority of its length.

Complainant asserts that the airflow passageway lacks uniformity and a circular cross section along a majority of its length because the airflow passageway includes the liquid blocking tank 15 and overflow holes 903. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-1, ¶105. However, Mr. Leinsing will opine that, for similar reasons as claim 1[l] *supra*, the airflow passageway merely contains obstacles like those that NJOY asserts do not render the airflow passageway not having a uniform cross-sectional area along the continuous majority of length. *See* Section IV.G.2.i.m (claim 1[l]) *supra*.

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '881 Patent, Claim 18[a]

The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 279-281, 533-535; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

As described in '881 Patent claim 1[f] above, the airflow passageway in Wang '554 is defined by the interior of the housing, which is cylindrical and therefore has a circular cross section having a diameter along a majority of its length.

3. Fang '044 in view of Xia '610 and Wang '554 and Smoke Fifty-One Duo – '881 Patent, Claim 18[b]

The evidence will show that Fang '044 discloses or renders obvious, alone or in combination with Xia '610 and Wang '554 this limitation. *See* JX-0633C (Leinsing Opening Rpt.,

NJOY Exhibit 2008.1012
Juul v. NJOY
IPR2024-00161

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Appx. A) at ¶¶ 282-284, 533-535; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici).

For example, Fang 044 discloses smoke channel 10, having pipe 8 therein defining a uniform circular cross sectional area along at least the majority of its length. "[T]he gas pipe 8 is connected with a gas pipe support 9, the gas pipe 8 and the gas pipe support 9 form a smoking channel 10 with the center of the sucker 1." Fang 044 at 1268.

Complainant asserts that the gas pipe 8 does not constitute a majority of the airflow passageway and has a different inner diameter. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-3, ¶¶ 84-85. However, as Mr. Leinsing will opine, the figures in Fang illustrate a breakpoints, which indicates to a POSITA that the length between those points is not fully illustrated because the features remain consistent through that length. That means that a POSITA would understand the length between those breaks to be of any possible length, including long enough that the majority of the length of the airflow passageway goes through the gas pipe.

4. Wang '927 in view of Wang '554 and NPRO Style – '881 Patent, Claim 18[b]

The evidence will show that Wang '927 in view of Wang '554 and NPRO Style discloses or renders obvious this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 73-75, 201-203; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang '927); RX-0005 (Wang '554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style).

For example, as discussed above and shown in Fig. 1, the airflow passageway discussed in Claim 1[f] *supra* has a length having a circular cross section having a diameter along a majority of the length. *Id.* For example, the casing 18, the air intake pipe, and the ventilation channel all have circular shapes. JX-0594 (Wang '927) at JX-0594.4("The casing 18 is an aluminum alloy

NJOY Exhibit 2008.1013
Juul v. NJOY
IPR2024-00161

round pipe."); *id.* ("The air intake pipe 14 is a round copper pipe …"); ("The tobacco juice bin 13 is a plastic round pipe. Fiber filler 10 is made into a ring shape and filled into a cigarette box 13. A circular-hole ventilation channel in the middle of the fiber filler 10 is made of a metal net to support fibers without deformation.").

5. Han '364 in view of Fang '044 and NPRO Style – '881 Patent, Claim 18[b]

The evidence will show that Han '364 in view of Fang '044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 76-78, 209-210; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han '364 certified English Translation) ; JX-0595 (Fang '044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit).

For example, Han '364 discloses an airflow passageway is largely cylindrical in shape, e.g., to accommodate coiled filament 6/49. *See, e.g.,* JX-0631 (Han '364 certified English Translation) at FIGs. 1, 3, 8-9; *see also id.* at [0013], [0015]; *see also* JX-0632C (Leinsing Invalidity Rpt.) at ¶ 376. As is readily apparent from the figures, Han '364 discloses airflow passageways where most if not all of the airflow passageway has a uniform diameter, allowing for uniform cross-sections across most of, or the entire, airflow passageway. *Id.*

6. Red Dragon in view of Fang '044 and Wang '927 – '881 Patent, Claim 18[b]

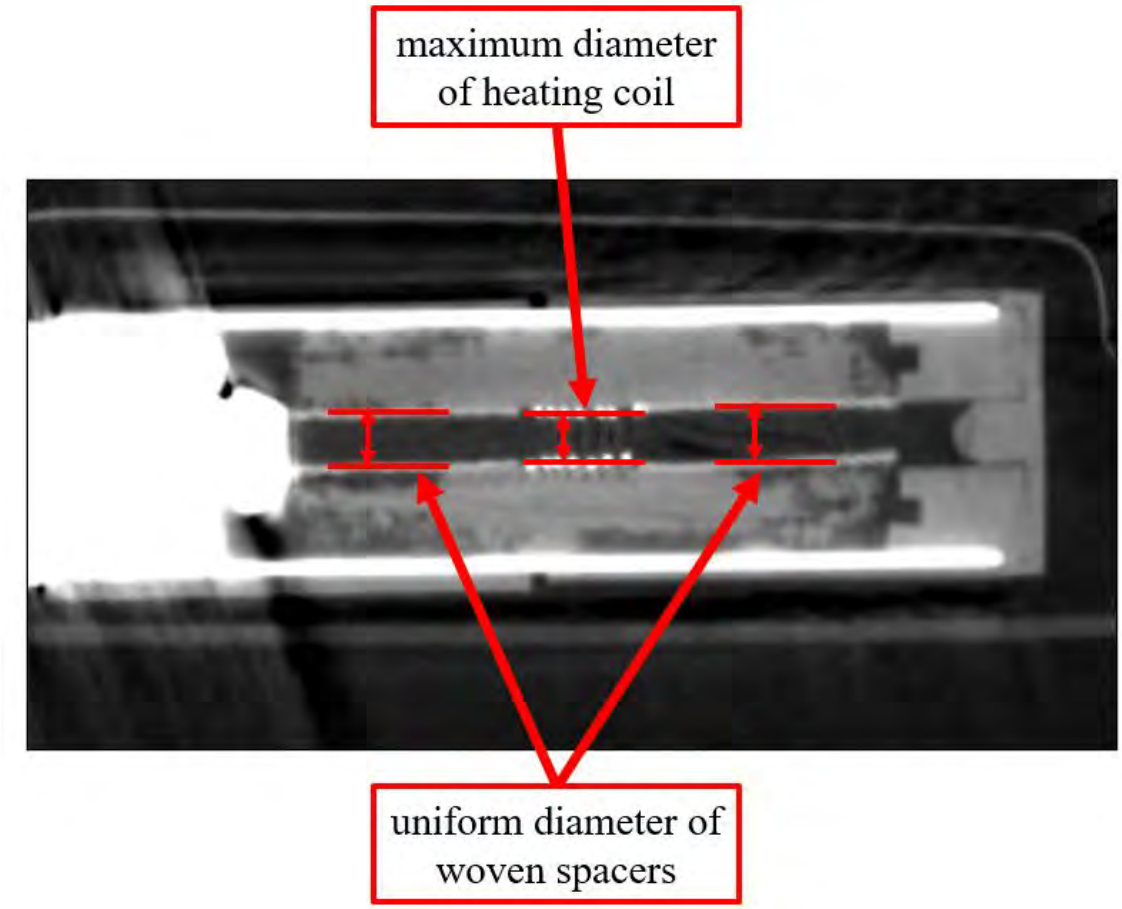
The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 74-76, 199-200; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red

NJOY Exhibit 2008.1014
Juul v. NJOY
IPR2024-00161

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Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, the Red Dragon Airflow Passageway has a length having a circular cross section with a diameter along a majority of the length as shown below.



See RX-0077 at RX-0077.22 (annotated in red); *see also* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶ 74.

Complainant asserts that Mr. Leinsing's opinions are conclusory and unsupported. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. E, ¶ 97-98. However, as Mr. Leinsing described in his report, the woven spacers each have a uniform cross-section (i.e., uniform diameter) across the length of each spacer, including between the heating element and the first aperture for the lower woven

NJOY Exhibit 2008.1015
Juul v. NJOY
IPR2024-00161

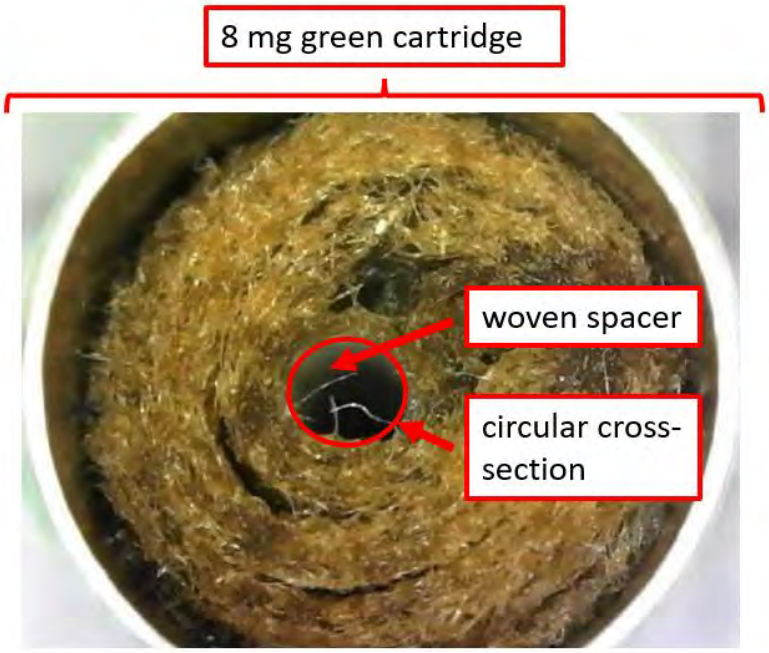
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spacer, and between the heating element and the second aperture for the upper woven spacer. *See, e.g.,* JX-0632C (Leinsing Opening Rpt.) at ¶ 492-493. Additionally, the two have the same diameter.

7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '881 Patent, Claim 18[b]

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 74-76, 199-200; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927).

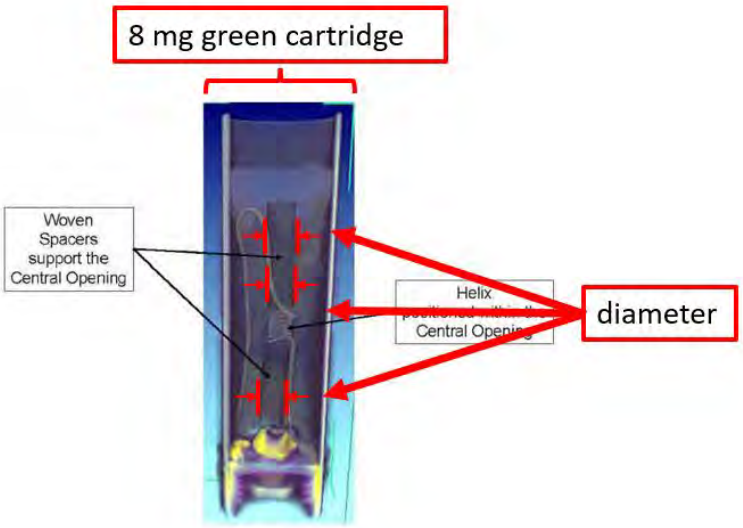
For example, the Smoke Fifty-One Duo Airflow Passageway has a length having a circular cross section with a diameter along a majority of the length as shown below.



See RX-0130C (Yardimici Declaration) at RX-0130C.31 (annotated in red); *see also* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶ 75.

NJOY Exhibit 2008.1016
Juul v. NJOY
IPR2024-00161

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See RX-0130C (Declaration of Yardimici) at RX-0130C.29; *see also* RX-0129C (Wang Declaration) at RX-0129C.42 (annotated in red); JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶ 75.

Complainant asserts that airflow passageway between the heating coil and the air exit hole includes a "lack of uniformity." *See* CX-2726C (Vallee Reb. Rpt.) at Appx. D, ¶ 134. However, Mr. Leinsing will explain that the airflow passageway is generally uniform, and is uniform for a majority of the length.

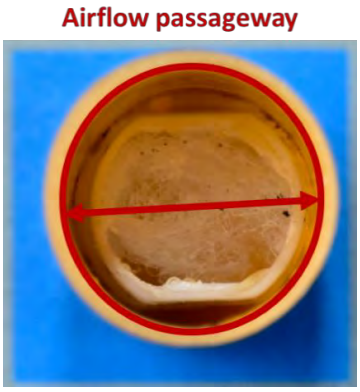
8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 18[b]

The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 205-206; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044).

The evidence will show that the uniform cross sectional area along a majority of the length of the airflow passageway is a circle having a diameter the size of the interior of the housing. *Id.*

NJOY Exhibit 2008.1017
Juul v. NJOY
IPR2024-00161

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See RX-0082 (Photos of NJOY NPRO) at RX-0082.83 (annotated in red) *see also* JX-0640C (Leinsing Opening Rpt., Appx. F) at ¶ 78.

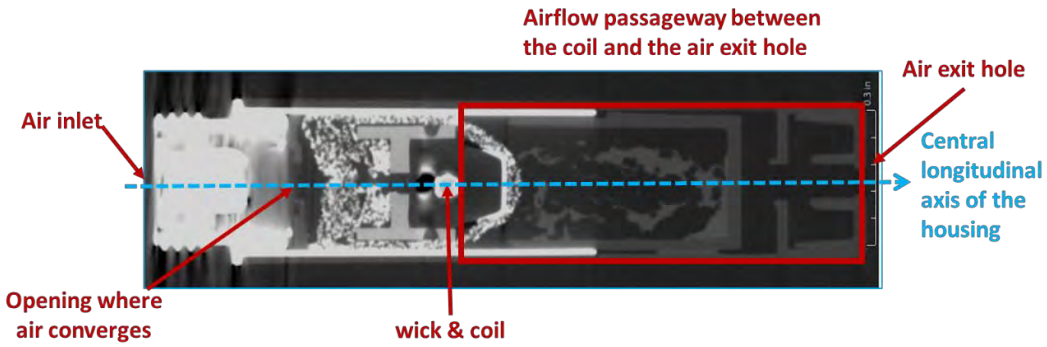


See JX-0404 (NPRO Photos) at JX-0404.16 (annotated in red); *see also* JX-0640C (Leinsing Opening Rpt., Appx. F) at ¶ 78.

Additionally, the CT scan below shows that the diameter of the airflow passageway between the heating element and the second aperture is constant when measured perpendicular to the central longitudinal axis of the housing. A POSITA would understand that the cross-sectional area A of the airflow passageway is calculated from the diameter D of the airflow passageway using the following formula: $A = \pi \left(\frac{D}{2}\right)^2$, where π is a constant. Given that the diameter D of the cross-sectional area of the housing is also constant, the cross-sectional area of the airflow passageway is uniform between the heating element and the second aperture.

NJOY Exhibit 2008.1018
Juul v. NJOY
IPR2024-00161

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See JX-0404 (NPRO Photos) at JX-0404.11 (annotated in blue and red).

Additionally, in modifying the device to have a through-hole passageway as described above in '864 Patent claim 1[i], a POSITA would have included a through hold with a uniform cross-sectional area.

Complainant asserts that the airflow passageway does not have a length having a circular cross-section having a diameter along a majority of the length because there are several elements that obstruct the airflow along the central longitudinal axis of the housing. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. G, ¶¶ 80-82. However, as described in claim 1[j] *supra*, because the airflow passageway is defined by the circular wall of the housing, the airflow passageway does have a length having a circular cross-section having a diameter along a majority of the length at least as NJOY interprets the claims with respect to infringement (i.e., that the airflow can go around obstacles). *See* Section IV.G.2.i.k (claim 1[j]) *supra*.

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 18[b]

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 205-206; RPX-0006

NJOY Exhibit 2008.1019
Juul v. NJOY
IPR2024-00161

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(NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.



RX-0084 (Photos of NJOY NCIG) at RX-0084.86 (annotated in red).

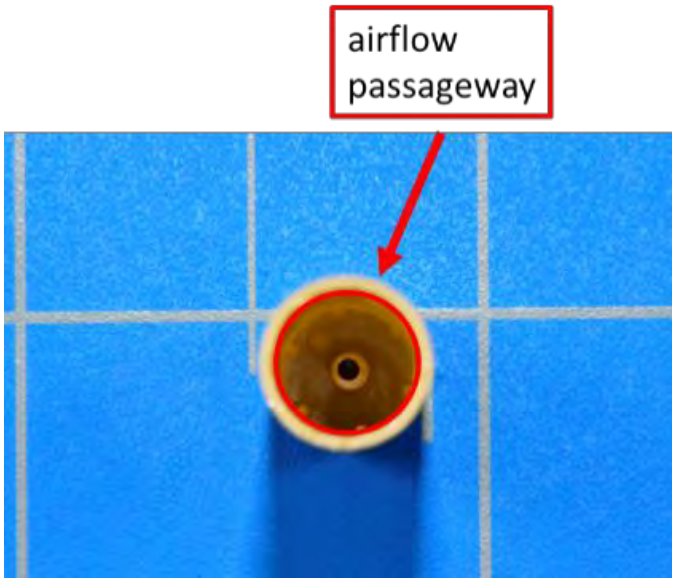
10. Cigarette Electronique – '881 Patent, Claim 18[b]

The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 110-112, 239-240; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).

For example, the photo below shows that the hollow interior of part of the cartridge section is circular in cross-section. The airflow passageway includes the part of the cartridge section shown in the photo.

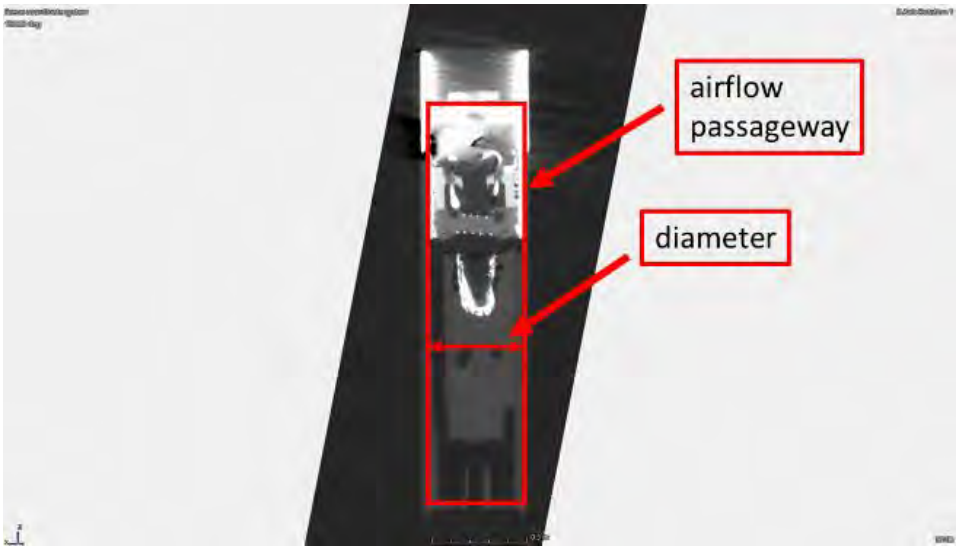
NJOY Exhibit 2008.1020
Juul v. NJOY
IPR2024-00161

[redacted]



See RX-0072 at RX-0072.102 (annotated in red); *see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶ 111.

The CT scan below shows the diameter of the circular cross-section of the airflow passageway.



See JX-0401 (Photos of Cigarette Electronique) at JX-0401.5 (annotated in red)*; see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶ 111.

NJOY Exhibit 2008.1021
Juul v. NJOY
IPR2024-00161

[redacted]

Complainant asserts that the airflow passageway does not have a length having a circular cross-section having a diameter along a majority of the length because there are several elements that obstruct the airflow along the central longitudinal axis of the housing. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. F, ¶¶ 61-63, 143-144. However, as described in claim 1[j] *supra*, because the airflow passageway is defined by the circular wall of the housing, the airflow passageway does have a length having a circular cross-section having a diameter along a majority of the length at least as NJOY interprets the claims with respect to infringement (i.e., that the airflow can go around obstacles). *See* Section IV.G.2.i.k (claim 1[j]) *supra*.

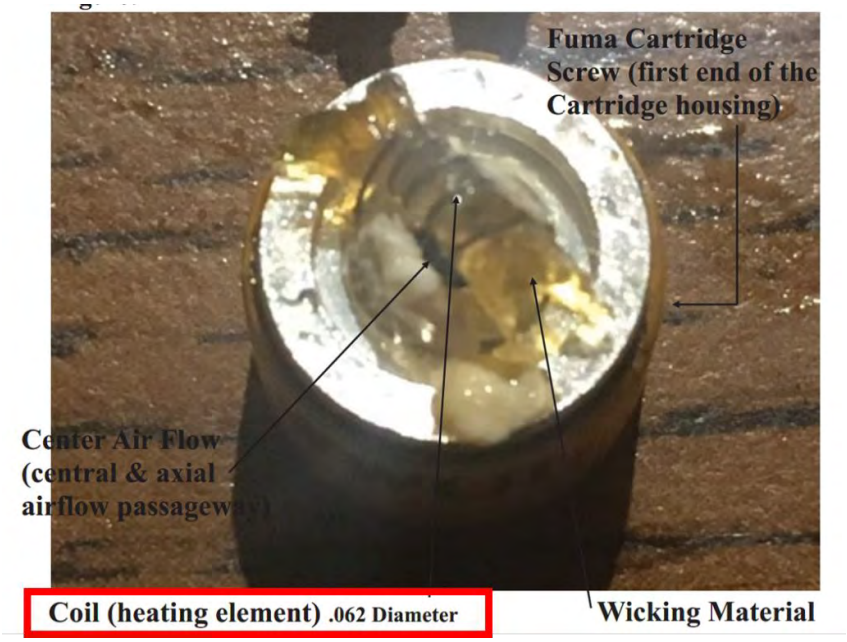
11. Fuma Prototype – '881 Patent, Claim 18[b]

The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 183; 74-76; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

For example, the woven spacer has a length having a circular cross section with a diameter along a majority of the length as shown below. Specifically, the heating coil has a diameter of 0.062" and the woven spacer has a diameter of 0.094".

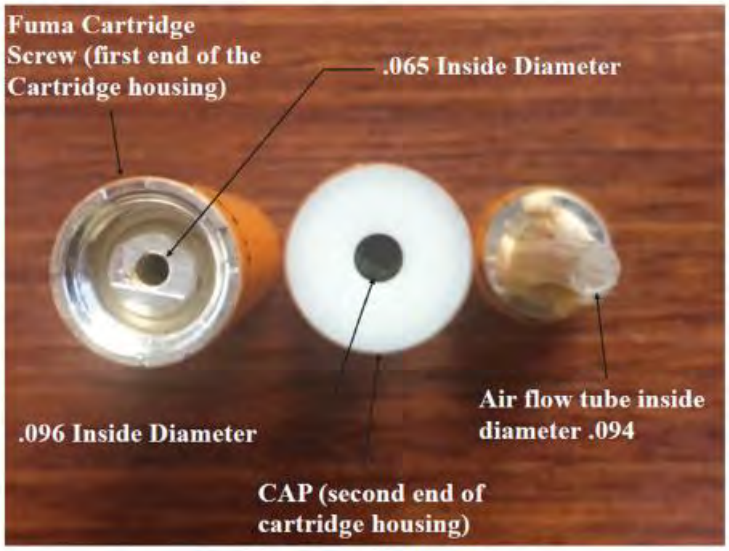
NJOY Exhibit 2008.1022
Juul v. NJOY
IPR2024-00161

[redacted]



See '881 Priority Chart at 26 (citing CRTP Attachment D at Fig. 14) (annotated in red).

Figure: 15

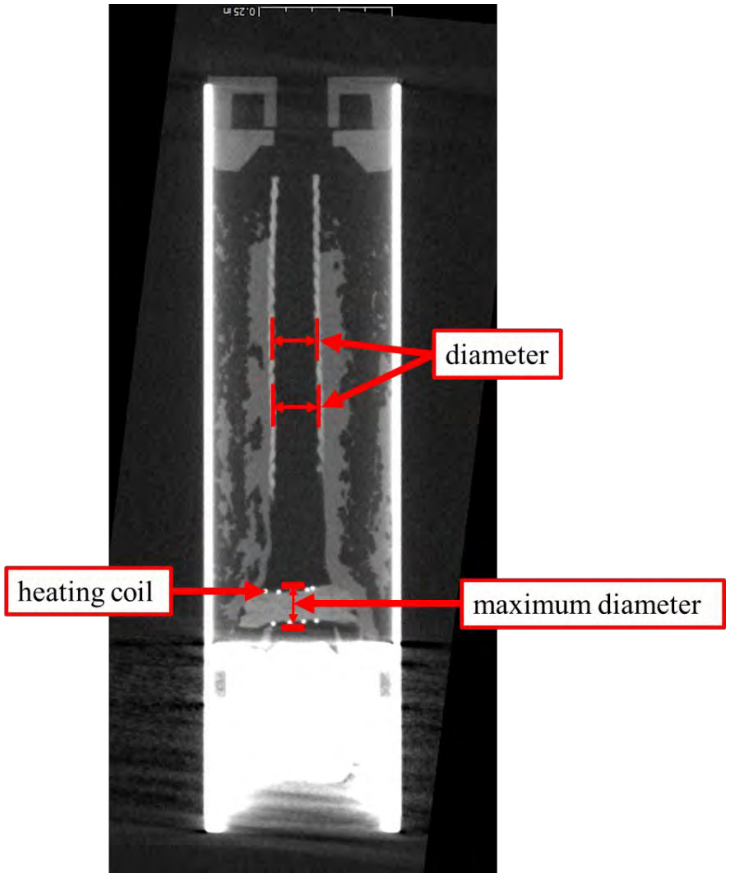


See '881 Priority Chart at 28 (citing CRTP Attachment D at Fig. 15).

[redacted]



See '881 Priority Chart at 29 (citing CRTP Attachment D at Fig. 12).



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.17 (annotated in red).

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses this claim element. *See* Conley '881 Declaration at ¶5 (Dependent claim 22).

NJOY Exhibit 2008.1024
Juul v. NJOY
IPR2024-00161

[redacted]

NJOY also admitted that the Fuma Prototype discloses this claim element. *See* '881 Priority Chart at 27-29.

gg. '881 Patent, Claim 18[c]: "the maximum diameter of the coil being smaller than the diameter of the circle of the uniform cross-sectional area of the airflow passageway"

1. Xia '610 in view of Wang '554 and Fang '044 and Smoke Fifty-One Duo – '881 Patent, Claim 18[c]

The evidence will show that Xia '610 discloses or renders obvious, alone or in combination with Wang '554 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 285-286, 536-537; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

From the figures, it is clear that the diameter of the coil is less than that of (the cross section of) the airflow passageway, which has a uniform cross section from the coil to the second aperture, along a majority of its length. Additionally, two dimensions can only have one of three configurations with respect to each other: one can be larger, smaller, or the same size as the other. Thus, whether the diameter of the coil is the smaller than the diameter of the cross-section of the majority of the airflow passageway is a simple choice between three options, and would have been obvious to try. Furthermore, having the diameter of the coil smaller than the diameter of the majority of the length of the airflow passageway simplifies manufacturing of the device. For example, the coil can be inserted into the airflow passageway sideways during manufacture, and turned within the device to set it in place if its diameter is smaller than that of the cross-section of the airflow passageway.

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '881 Patent, Claim 18[c]

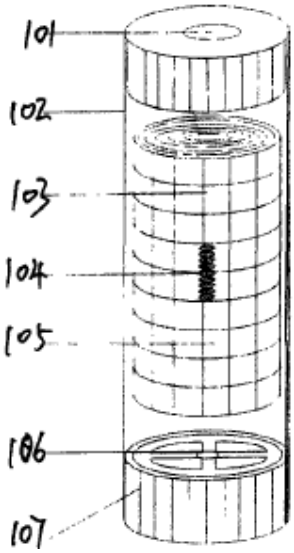
The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 this limitation. *See* JX-0633C (Leinsing Opening Rpt.,

NJOY Exhibit 2008.1025
Juul v. NJOY
IPR2024-00161

[redacted]

Appx. A) at ¶ 287-289, 536-537; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

As depicted in Figure 3, Wang '554 discloses that heating coil 104 can be a coil with a maximum diameter smaller than that of the majority of the airflow passageway:



See RX-0005 (Wang '554) at Fig. 3; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 288.

Additionally a POSITA would know that the maximum diameter of heating coil is "smaller than the diameter of the circular cross section of the length of the airflow passageway" within which it sits, at least because otherwise it would not fit within the passageway. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 289.

3. Fang '044 in view of Xia '610 and Wang '554 and Smoke Fifty-One Duo – '881 Patent, Claim 18[c]

The evidence will show that Fang '044 discloses or renders obvious, alone or in combination with Xia '610 and Wang '554 this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 290-292, 536-537; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici).

NJOY Exhibit 2008.1026
Juul v. NJOY
IPR2024-00161

[redacted]

For example, as illustrated in the figures, Fang 044 discloses that the diameter of the coil is smaller than the diameter of the gas pipe 8, which defines the cross sectional area of the majority of the airflow passageway:

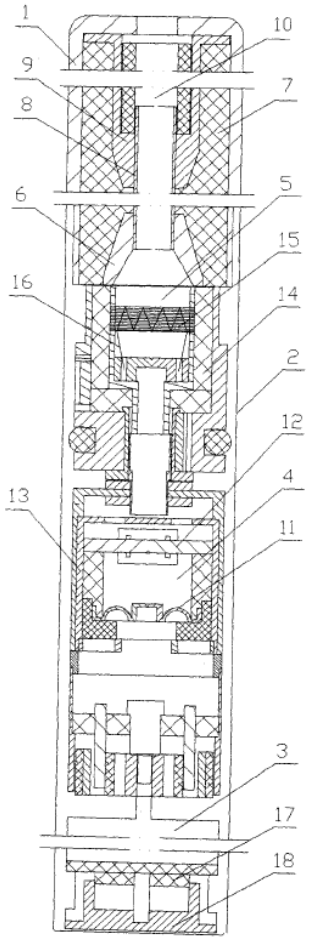


图 1

See JX-0595 (Fang '044) at FIG. 1; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 309.

Additionally, in combining Fang 044 with Xia 610 or Wang 554 or Smoke Fifty-One Duo, this feature would have been obvious for the same reasons those references disclose or suggest this feature.

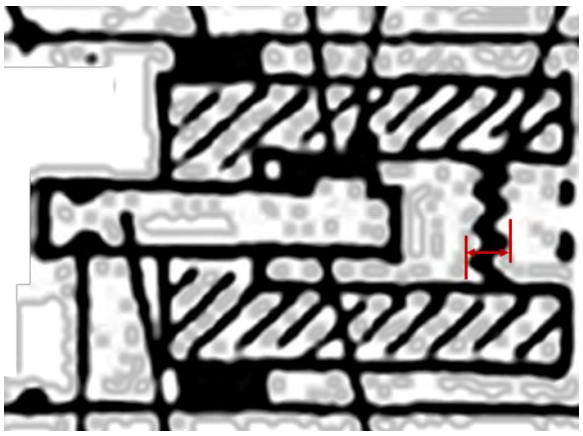
NJOY Exhibit 2008.1027
Juul v. NJOY
IPR2024-00161

[redacted]

4. Wang ’927 in view of Wang ’554 and NPRO Style – ‘881 Patent, Claim 18[c]

The evidence will show that Wang ’927 in view of Wang ’554 and NPRO Style discloses or renders obvious this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 76-78, 204-206; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang ’927); RX-0005 (Wang ’554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style).

For example, the maximum diameter of the coil (e.g., shown below) is smaller than the diameters of the air intake pipe, the ventilation channel, the casing, and the mouthpiece channel as shown in Fig. 1 of Wang ’927. *Id.* To the extent NJOY argues that it is not proper to dimension figures of a patent, it is proper and understood by a POSITA that proportions between different parts can be learned from patent figures.



JX-0594 (Wang ’927) at Fig. 1 (zoomed in on the electric heating wire 9) (annotated in red).

NJOY Exhibit 2008.1028
Juul v. NJOY
IPR2024-00161

[redacted]

5. Han ’364 in view of Fang ’044 and NPRO Style – ’881 Patent, Claim 18[c]

The evidence will show that Han ’364 in view of Fang ’044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 79-81, 211-212; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han ’364 certified English Translation) ; JX-0595 (Fang ‘044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit).

For example, Han ’364 discloses filament 6/49, which are oriented vertically within the airflow passageway; the maximum diameter of either of filament 6 or 49 must, therefore, necessarily be less than that of the airflow passageway. *See* JX-0631 (Han ’364 certified English Translation) at FIGs. 1, 9; *see also* JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶¶ 80, 211-212.

Further, Mr. Leinsing will opine it would have been obvious to a person of ordinary skill in the art to modify Han ’364 with Fang ’044 and their knowledge as a person of ordinary skill in the art. *See* JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶¶ 81. For example, Fang ’044 further discloses heating film wire 16, which has a maximum diameter that is smaller than that of the smoking channel 10. *Id.* A person of ordinary skill in the art, in modifying Han ’364 to reorient filament 6/49 in the same orientation as disclosed in Fang ’044, would have also been motivated to ensure that the maximum diameter of the coiled filament remained smaller than the diameter of the airflow passageway. *See* JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶¶ 81.

Complainant asserts that the diameter of the airflow passageway is substantially increased in the modified Han ’364. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. C, ¶¶ 107-108. However, as Mr. Leinsing will opine, that is not necessarily the case, as re-orienting the heating coil to a transverse direction could also use a more compressed heating coil, or a smaller heating coil, or a

NJOY Exhibit 2008.1029
Juul v. NJOY
IPR2024-00161

heating chamber like disclosed in Fang ’044, such that the diameter of the airflow passageway need not be increased.

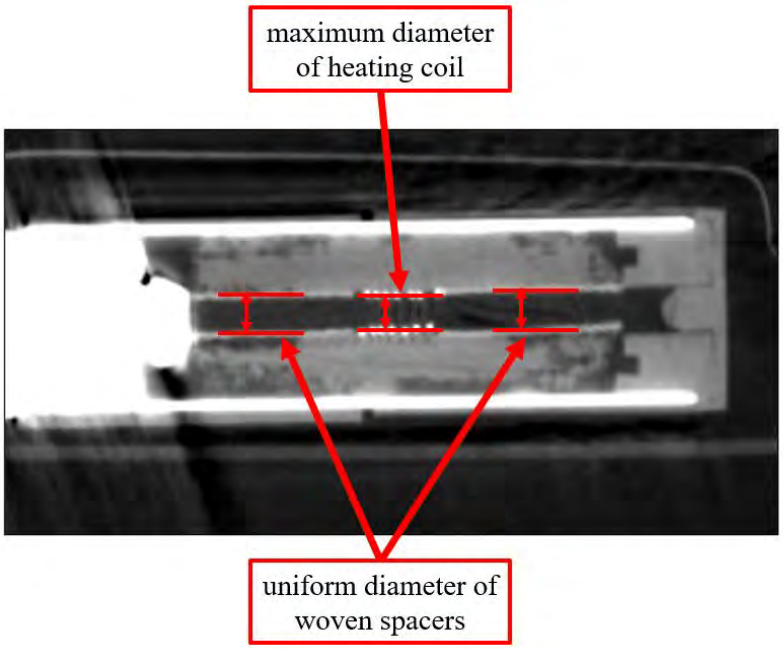
6. Red Dragon in view of Fang ’044 and Wang ’927 – ‘881 Patent, Claim 18[c]

The evidence will show that Red Dragon in view of Fang ’044 and Wang ’927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 201-202; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang ’044); JX-0594 (Wang ’927).

For example, the CT scans, as annotated below, show that the maximum diameter of the heating coil is smaller than the diameter of the circular cross section of the length of the airflow passageway. Further, because the heating coil is within the airflow passageway (i.e., is positioned within the wicking material that spans between the woven spacers), the maximum diameter must be smaller than the diameter of the circular cross section of the length of the airflow passageway.

NJOY Exhibit 2008.1030
Juul v. NJOY
IPR2024-00161

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See RX-0077 at RX-0077.22 (annotated in red); *see also* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶ 80.

To the extent it is determined that the maximum diameter of the coil is not smaller than the diameter of the circular cross section of the length of the airflow passageway, it would have been obvious and beneficial to use a coil that has a maximum diameter smaller than the diameter of the circular cross section of the length of the airflow passageway given the knowledge of a POSITA. *See* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶ 81. For example, because the heating coil needs to fit within the diameter of the woven spacers and wicking material for it to sit between the upper and lower woven spacers and within the wicking material, it would have been obvious for a POSITA to make the diameter of the heating coil smaller than the diameter of the woven spacers and wicking material so that it would fit well and facilitate manufacturing. Additionally, a POSITA would be motivated to use a heating coil with smaller diameter here because it would reduce the

NJOY Exhibit 2008.1031
Juul v. NJOY
IPR2024-00161

[redacted]

resistance of the heating coil – the lower the resistance of the coil, the more heat the coil can output, the quicker the coil can output heat, and consequently, the quicker the coil can vaporize the e-liquid.

Complainant asserts this modification is not beneficial to the Red Dragon. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. E, ¶ 68. However, as Mr. Leinsing will opine, lower resistance (ohms) results in quicker and higher heat that results in more vapor quicker to the user for an improved experience because time = (heat * resistance)/volts^2. *See* JX-0632C (Leinsing Opening Rpt.) at ¶¶ 292, 497-505.

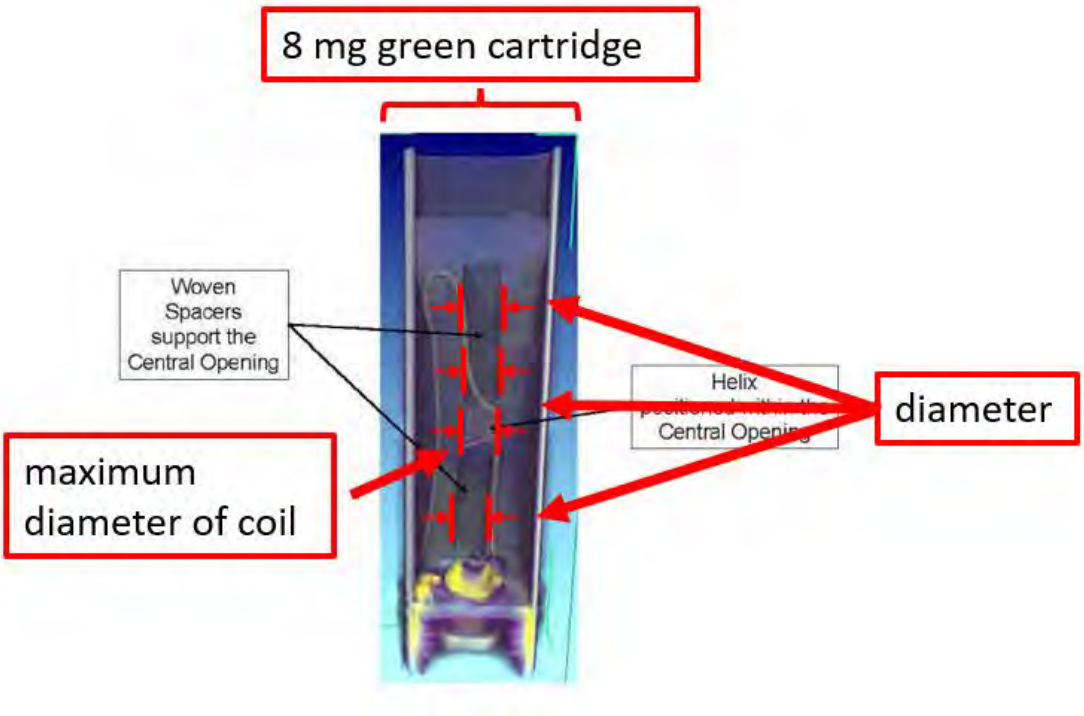
7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '881 Patent, Claim 18[c]

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 77-79, 201-202; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, the CT scans, as annotated below, show that the maximum diameter of the heating coil is smaller than the diameter of the circular cross section of the length of the airflow passageway. Further, because the heating coil is within the airflow passageway (i.e., is positioned within the wicking material that spans between the woven spacers), the maximum diameter must be smaller than the diameter of the circular cross section of the length of the airflow passageway.

NJOY Exhibit 2008.1032
Juul v. NJOY
IPR2024-00161

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See RX-0130C (Declaration of Yardimici) at RX-0130C.29; *see also* RX-0129C (Wang Declaration) at RX-0129C.42 (annotated in red); JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶ 78.

To the extent it is determined that the maximum diameter of the coil is not smaller than the diameter of the circular cross section of the length of the airflow passageway, it would have been obvious and beneficial to use a coil that has a maximum diameter smaller than the diameter of the circular cross section of the length of the airflow passageway given the knowledge of a POSITA. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶ 79. For example, a narrower heating coil, compared to the woven spacers, would prevent the heating coil from touching and burning the nicotine pad.

8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 18[c]

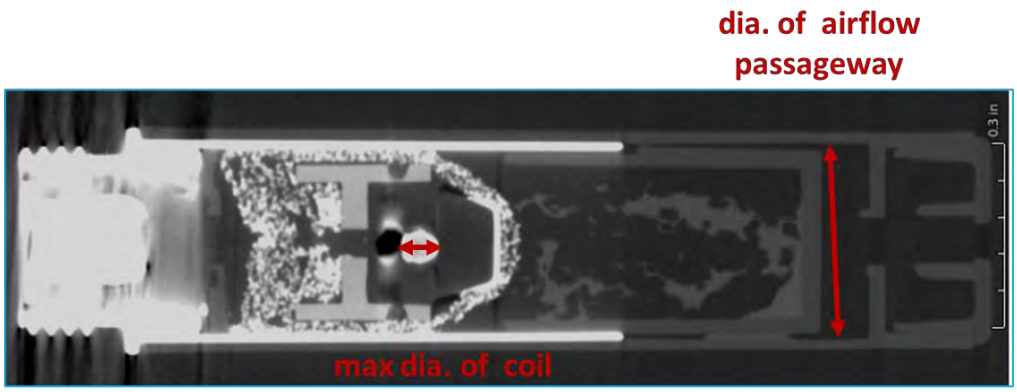
The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Invalidity Rpt., Appx.

NJOY Exhibit 2008.1033
Juul v. NJOY
IPR2024-00161

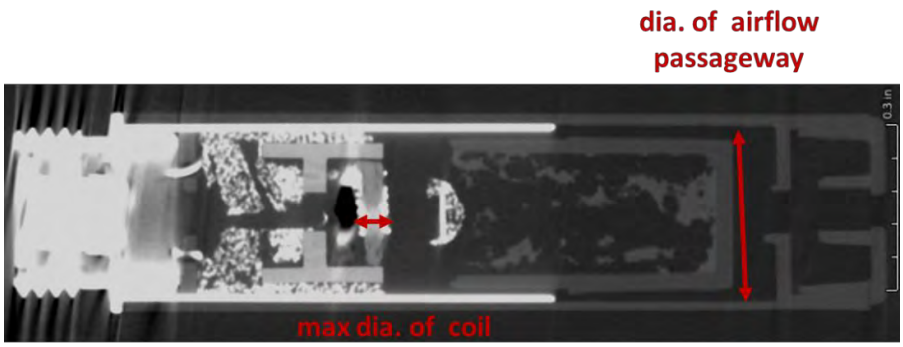
[redacted]

G) at ¶¶ 207-208; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044).

For example, the CT scan below shows the coil and the airflow passageway with the diameter of each labeled, clearly showing that the maximum diameter of the coil is smaller than the diameter of the airflow passageway.



See JX-0404 (CT Scans of NJOY NPRO) at JX-0404.11 (annotated in red) *see also* JX-0640C (Leinsing Opening Rpt., Appx. F) at ¶ 80.



See JX-0404 (NPRO Photos) at JX-0404.16 (annotated in red); *see also* JX-0640C (Leinsing Opening Rpt., Appx. F) at ¶ 80.

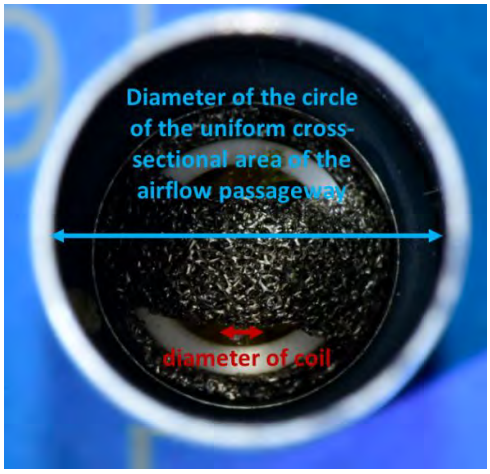
NJOY Exhibit 2008.1034
Juul v. NJOY
IPR2024-00161

[redacted]

Complainant asserts that the maximum diameter of the coil is not smaller than the diameter of the circular cross section of the length of the airflow passageway because there are several elements that obstruct the airflow along the central longitudinal axis of the housing. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. G, ¶¶ 84-85. However, as described in claim 1[j] *supra*, because the airflow passageway is defined by the circular wall of the housing, the maximum diameter of the coil is smaller than the diameter of the circular cross section of the length of the airflow passageway. *See* Section IV.G.2.i.k (claim 1[j]) *supra*.

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 18[c]

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 207-208; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.



RX-0084 (Photos of NJOY NCIG) at RX-0084.87 (annotated in red and blue).

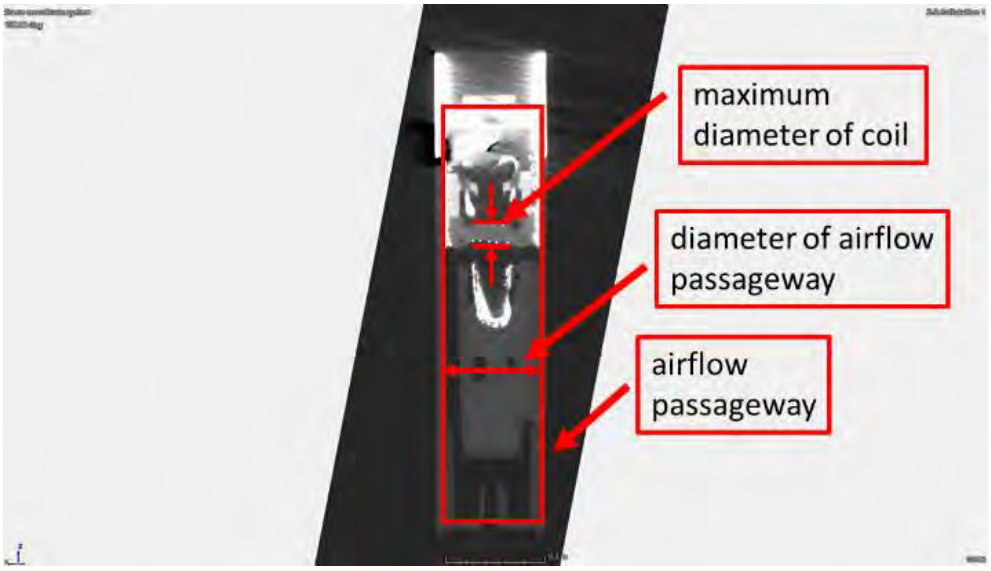
NJOY Exhibit 2008.1035
Juul v. NJOY
IPR2024-00161

[redacted]

10. Cigarette Electronique – '881 Patent, Claim 18[c]

The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 113-114, 241-242; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).

For example, the CT scan below shows the coil and the airflow passageway with the diameter of each labeled, clearly showing that the maximum diameter of the coil is smaller than the diameter of the airflow passageway.



See JX-0401 (Photos of Cigarette Electronique) at JX-0401.5 (annotated in red)*; see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶ 1114.

Complainant asserts that the maximum diameter of the coil is not smaller than the diameter of the circular cross section of the length of the airflow passageway because there are several elements that obstruct the airflow along the central longitudinal axis of the housing. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. F, ¶¶ 61-62. However, as described in claim 1[j] *supra*, because the airflow passageway is defined by the circular wall of the housing, the maximum diameter of the

NJOY Exhibit 2008.1036
Juul v. NJOY
IPR2024-00161

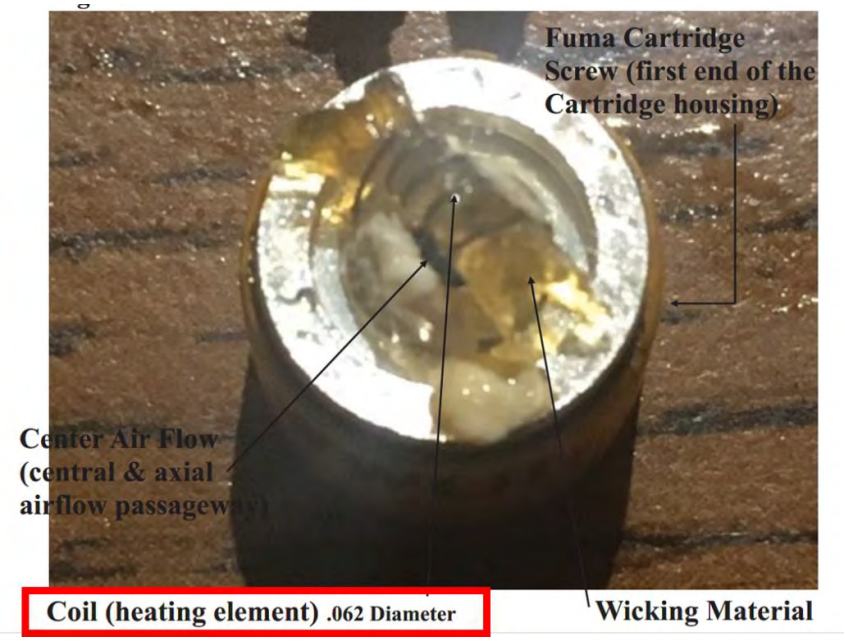
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coil is smaller than the diameter of the circular cross section of the length of the airflow passageway. *See* Section IV.G.2.i.k (claim 1[j]) *supra*.

11. Fuma Prototype – '881 Patent, Claim 18[c]

The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 185; 74-76; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

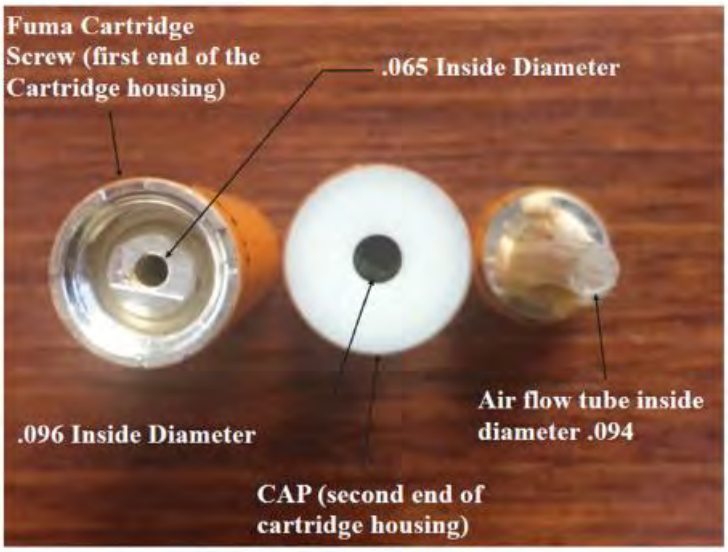
For example, the woven spacer has a length having a circular cross section with a diameter along a majority of the length as shown below and the maximum diameter of the coil is smaller than the diameter of the circular cross section of the length of the airflow passageway. Specifically, the heating coil has a diameter of 0.062" and the woven spacer has a diameter of 0.094".



See '881 Priority Chart at 26 (citing CRTP Attachment D at Fig. 14) (annotated in red).

[redacted]

Figure: 15

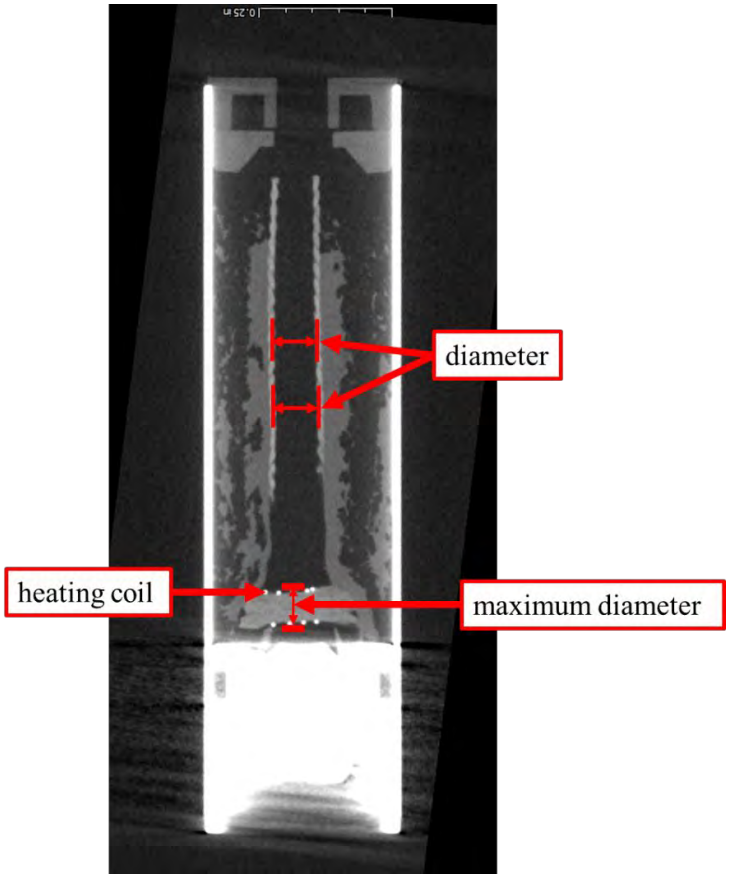


See '881 Priority Chart at 28 (citing CRTP Attachment D at Fig. 15).



See '881 Priority Chart at 29 (citing CRTP Attachment D at Fig. 12).

[redacted]



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.17 (annotated in red).

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses this claim element. *See* Conley '881 Declaration at ¶5 (Dependent claim 22).

NJOY also admitted that the Fuma Prototype discloses this element. *See* '881 Priority Chart at 27-29.

hh. '881 Patent, Claim 19: "[t]he cartridge of claim 18, wherein the first aperture on the first end is located centrally and axially with respect to the housing"

1. Xia '610 in view of Wang '554 and Fang '044 and Smoke Fifty-One Duo – '881 Patent, Claim 19

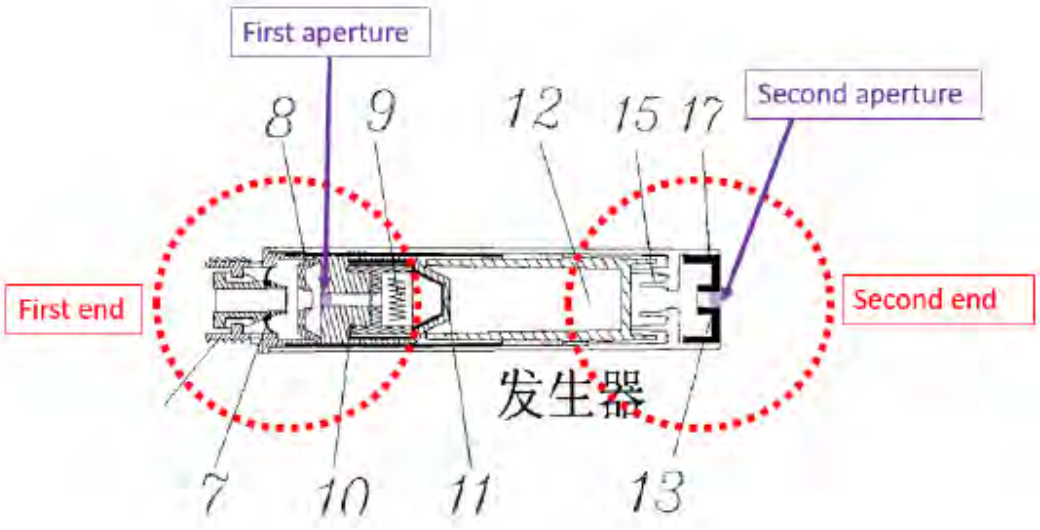
The evidence will show that Xia '610 discloses or renders obvious, alone or in combination with Wang '554 and Fang '044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing

NJOY Exhibit 2008.1039
Juul v. NJOY
IPR2024-00161

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Opening Rpt., Appx. A) at ¶¶ 302-304, 538-540; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

As described above, Xia '610 discloses a first aperture as illustrated in the annotated figures. The identified first aperture is centrally and axially located with respect to the housing as claimed:



See JX-0596 (Xia '610) at FIG. 2; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 294.

Complainant disagrees that the first aperture is in the housing or at the first end of the housing. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-1, ¶ 25, 214-215. However, Mr. Leinsing will opine that, for similar reasons as claim 1[e] *supra*, IV.G.2.i.f. *See* Section IV.G.2.i.f(claim 1[e]) *supra,* this limitation is met.

2. Wang '554 in view of Xia '610 and Fang '044 and Smoke Fifty-One Duo – '881 Patent, Claim 19

The evidence will show that Wang '554 discloses or renders obvious, alone or in combination with Xia '610 and Fang '044 this limitation. *See* JX-0633C (Leinsing Opening Rpt.,

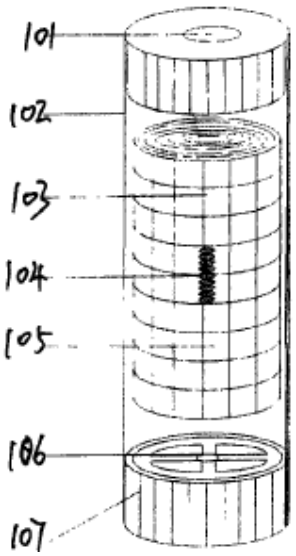
NJOY Exhibit 2008.1040
Juul v. NJOY
IPR2024-00161

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Appx. A) at ¶ 295-298, 538-540; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

As described in Claim 1 above, the first aperture is located centrally and axially with respect to the housing. It has a circular cross-sectional area measured perpendicular to a central longitudinal axis (which is along the same line as the airflow direction, *see* 1g)).

As depicted in Figure 3, Wang '554 discloses that first aperture 106 is centrally and axially located with respect to the housing:



See RX-0005 (Wang '554) at Fig. 3; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 298.

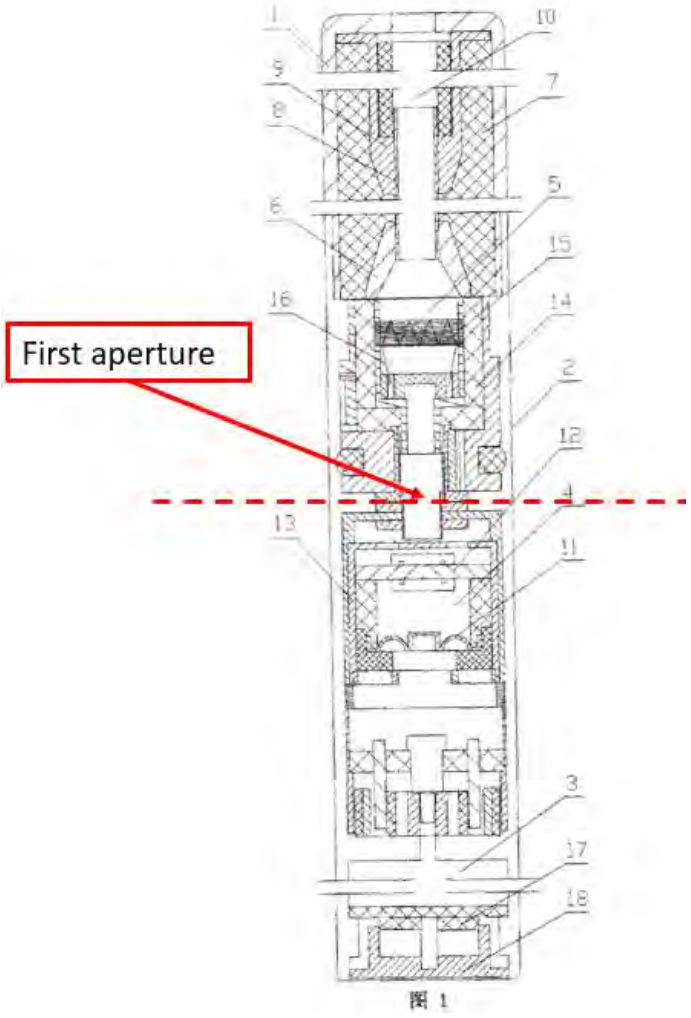
3. Fang '044 in view of Xia '610 and Wang '554 and Smoke Fifty-One Duo – '881 Patent, Claim 19

The evidence will show that Fang '044 discloses or renders obvious, alone or in combination with Xia '610 and Wang '554 this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 299-301, 538-540; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici).

NJOY Exhibit 2008.1041
Juul v. NJOY
IPR2024-00161

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For example, as explained above, in making Fang 044 with a cartridge configuration, a POSITA would use the aperture already disclosed in Fang 044. The aperture disclosed in Fang 044 that would serve as the claimed first aperture of the cartridge device is central and axially located with respect to the housing.



See JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 300.

Complainant asserts that MR. Leinsing provides no information about the position of the first aperture with respect to the alleged housing. See CX-2726C (Vallee Reb. Rpt.) at Appx. A-3,

NJOY Exhibit 2008.1042
Juul v. NJOY
IPR2024-00161

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¶ 142-143. However, as described in claim 1[e], IV.G.2.i.f. *See* Section IV.G.2.i.f(claim 1[e]) *supra*, this limitation is met.

4. Wang '927 in view of Wang '554 and NPRO Style – '881 Patent, Claim 19

The evidence will show that Wang '927 in view of Wang '554 and NPRO Style discloses or renders obvious this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 79-82, 207-208; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang '927); RX-0005 (Wang '554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style).

The inner air intake hole 16 and the opening of the air intake channel where air coming in from the inner air intake hole converges are located centrally and axially with respect to the casing 18. *See id.*; JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶ 81.

5. Han '364 in view of Fang '044 and NPRO Style – '881 Patent, Claim 19

The evidence will show that Han '364 in view of Fang '044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 82-84, 213-215; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han '364 certified English Translation) ; JX-0595 (Fang '044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit).

For example, Han '364 discloses air pressure transmission hole 13/30/42 oriented centrally and axially within the cartridge. *See* JX-0631 (Han '364 certified English Translation) at FIGs. 1, 8, 9; *see also* JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶¶ 83, 213-215.

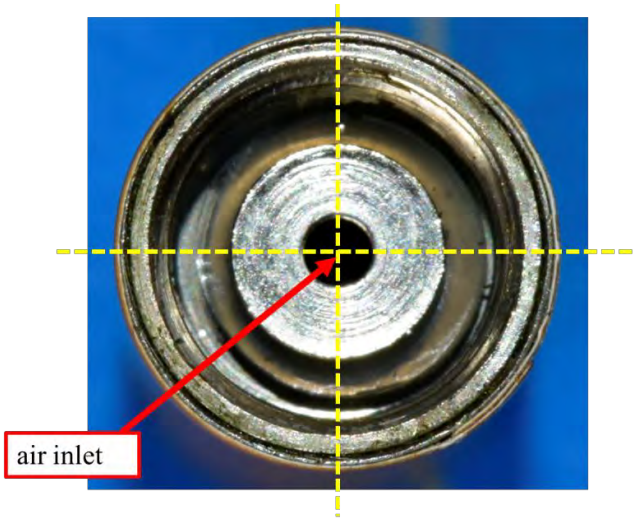
NJOY Exhibit 2008.1043
Juul v. NJOY
IPR2024-00161

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6. Red Dragon in view of Fang '044 and Wang '927 – '881 Patent, Claim 19

The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 80-82, 203-205; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, the air inlet on the first end of the cartridge, as shown below, is located centrally and axially with respect to the metal housing.



See RX-0074 (Photos of Red Dragon Kit #1) at RX-0074.23 (annotated); *see also* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶ 83.

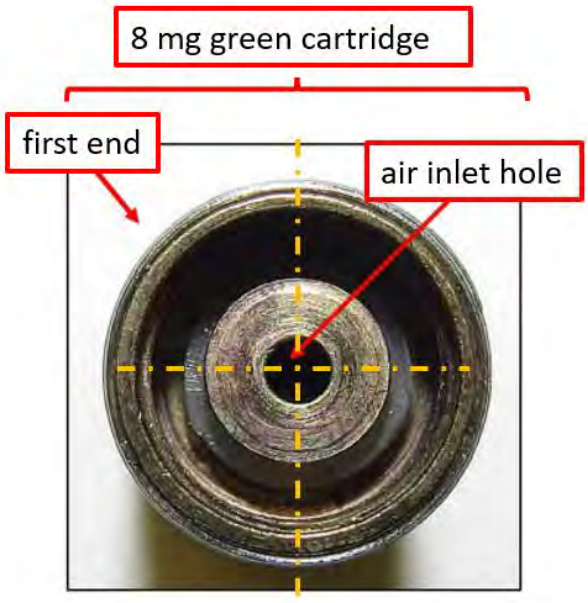
NJOY Exhibit 2008.1044
Juul v. NJOY
IPR2024-00161

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7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '881 Patent, Claim 19

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 80-82, 203-205; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, the air inlet on the first end of the cartridge, as shown below, is located centrally and axially with respect to the metal housing.



See RX-0130C (Yardimici Declaration) at RX-0130C.77 (annotated in red); *see also* RX-1558C (RJR Smoke Fifty-One Duo '881 Chart) at ITC1372_000008071 (annotated in red); JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶ 81.

8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 19

The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. *See* JX-0640C (Leinsing Invalidity Rpt., Appx.

NJOY Exhibit 2008.1045
Juul v. NJOY
IPR2024-00161

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G) at ¶¶ 209-211; RX-0082 (Photos of NJOY NPRO); JX-0404 (CT Scans of NJOY NPRO); RPX-0007 (NJOY NPRO Sample); RX-0095 (CT Scan Raw Data of NJOY NPRO); RX-0005 (Wang '554); JX-0595 (Fang '044).

For example, as shown below, the first aperture on the first end of the housing is located centrally with respect to the housing (*i.e.*, the first aperture is located in the center of the housing when looking straight down from the opening of the male threaded conductor). *Id.* A POSITA would understand that the first aperture is located axially with respect to the housing (*i.e.*, an axis may be imagined extending straight down into the page while looking straight down on the housing, such that the axis passes through the first aperture). *Id.*



See RX-0082 (Photos of NJOY NPRO) at RX-0082.6 (annotated); *see also* JX-0640C (Leinsing Opening Rpt., Appx. F) at ¶ 82.



NJOY Exhibit 2008.1046
Juul v. NJOY
IPR2024-00161

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See JX-0404 (NPRO Photos) at JX-0404.16 (annotated in red); *see also* JX-0640C (Leinsing Opening Rpt., Appx. F) at ¶ 82.

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 19

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 209-211; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.

10. Cigarette Electronique – '881 Patent, Claim 19

The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 115-117, 243-245; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).

For example, the three photos below identify the first end of the housing, the second end of the housing, and the first aperture on the first end of the housing. As shown by the centerlines on the third photo, the first aperture on the first end of the housing is located centrally with respect to the housing (*i.e.*, the first aperture is located in the center of the housing when looking straight down on the housing). A POSITA would understand that the first aperture is located axially with respect to the housing (*i.e.*, an axis may be imagined extending straight down into the page while looking straight down on the housing, such that the axis passes through the first aperture).

NJOY Exhibit 2008.1047
Juul v. NJOY
IPR2024-00161

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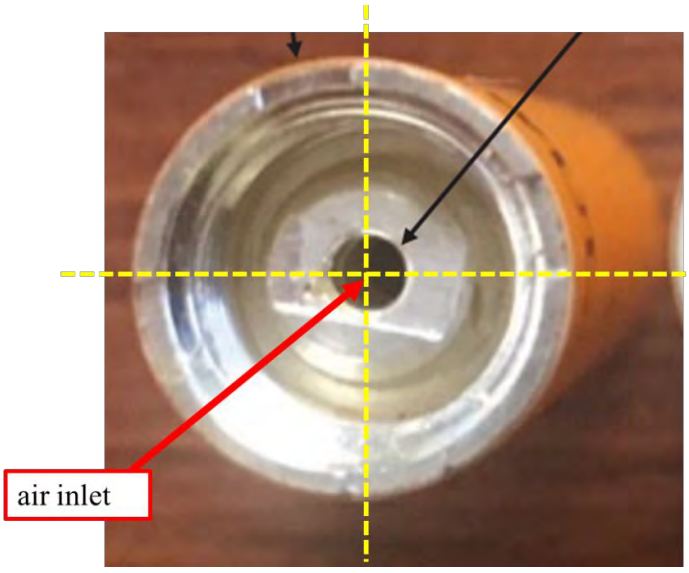


See RX-0072 at RX-0072.32 (annotated in red), RX-0072 at RX-0072.36; (annotated in red and yellow); RX-0072 at RX-0072.35; *see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶ 116.

11. Fuma Prototype – '881 Patent, Claim 19

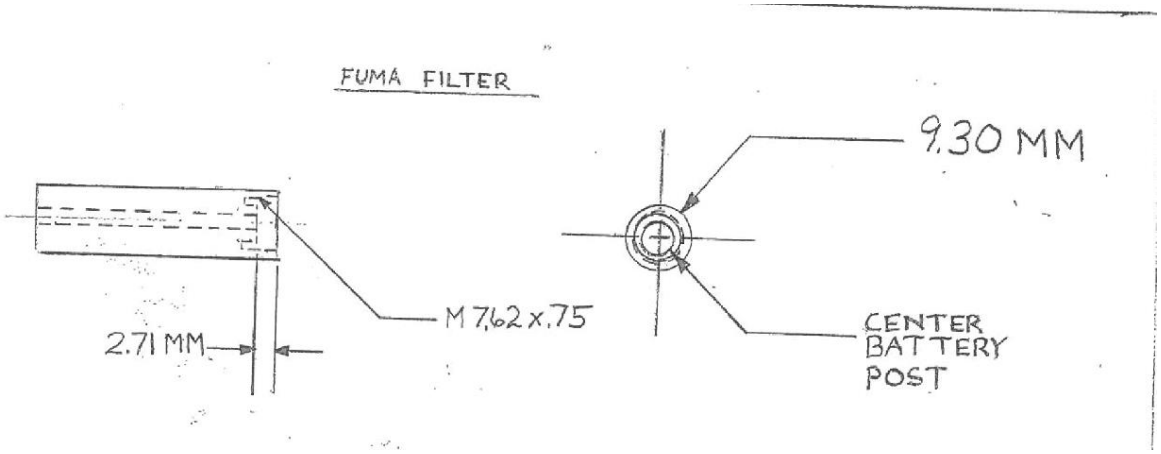
The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 187; 78-80; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

For example, the air inlet on the first end of the Fuma Cartridge, as shown below, is located centrally and axially with respect to the housing.



See CRTP Exhibit A at Fig. 15 (annotated).

[redacted]



See Fuma Prototype Fab Drawings at FUMA-INSPECTION-0037.

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses this claim element. *See* Conley '881 Declaration at ¶5 (Dependent claim 23).

NJOY also admitted that the Fuma Prototype discloses this claim element. *See* '881 Priority Chart at 30-31.

ii. '881 Patent, Claim 26: "[t]he cartridge of claim 16, further comprising a solution, wherein the heating element is in operative connection with a wicking material, and the wicking material is operative to attract a portion of the solution from the solution holding medium located immediately adjacent opposite ends of the heating element toward the heating element"

The evidence will show that the prior art discloses or renders obvious for the largely the same reasons that it discloses or renders obvious claim 12 of the '864 Patent. In addition to the requirements of claim 12 of the '864 patent, this limitation requires "the wicking material is operative to attract a portion of the solution from the solution holding medium located immediately adjacent opposite ends of the heating element toward the heating element" instead of "wicking material being operative to permit at least a portion of the solution to be held in the solution holding medium to be drawn toward the heating element to be vaporized." The evidence will show that this requirement is also disclosed or rendered obvious.

NJOY Exhibit 2008.1049
Juul v. NJOY
IPR2024-00161

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1. Xia ’610 in view of Wang ’554 and Fang ’044 and Smoke Fifty-One Duo – ‘881 Patent, Claim 26

The evidence will show that Xia ’610 discloses or renders obvious, alone or in combination with Wang ’554 and Fang ’044 and Smoke Fifty-One Duo this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 567-569; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 221-265; JX-0596 (Xia ‘610); JX-0595 (Fang ‘044); RX-0130C (Declaration of Yardimici).

For example, Xia ’610 explains that the liquid guiding mechanism 11 wicks liquid between the liquid storage chamber 12 and the secondary liquid storage chamber 10: “One end of the liquid-guiding mechanism 11 is connected with the secondary liquid storage chamber 10 through the liquid guiding body 1102, and the other end is in contact with the liquid storage chamber 12.” JX-0596 (Xia ‘610) at JX-0596.13; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 568. Xia ’610 states that the wicking is done via capillary action: “[t]hrough a capillary action of the liquid-guiding mechanism 11, the chemical liquid stored in the liquid storage chamber 12 is guided into the secondary liquid storage chamber 10.” JX-0596 (Xia ‘610) at JX-0596.13. In doing so, the liquid is brought toward the heater because “the heater 9 is wrapped with the liquid-guiding mechanism 11 (see Fig. 4).” JX-0596 (Xia ‘610) at JX-0596.10; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 568.

Xia ’610 also identifies liquid guiding mechanism 11 as comprised of absorptive materials: “The liquid guiding body 1102 is made of a multi-layer foam nickel mesh or other metal porous bodies.” JX-0596 (Xia ‘610) at JX-0596.13; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 569.

2. Wang ’554 in view of Xia ’610 and Fang ’044 and Smoke Fifty-One Duo – ‘881 Patent, Claim 26

The evidence will show that Wang ’554 discloses or renders obvious, alone or in combination with Xia ’610 and Fang ’044 this limitation. *See* JX-0633C (Leinsing Opening Rpt.,

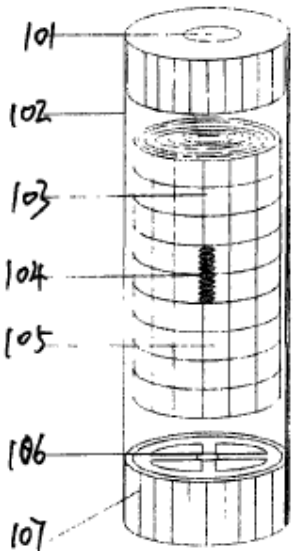
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Juul v. NJOY
IPR2024-00161

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Appx. A) at ¶ 570-575; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 267-295; RX-0005 (Wang '554); JX-0596 (Xia '610); JX-0595 (Fang '044); RX-0130C (Declaration of Yardimici).

Wang '554 discloses this limitation for the same reasons described above, in the discussion of claim 1l), for solution holding medium limitation.

Additionally, Wang '554 discloses the use of organic fiber, soaked with a solution, to deliver the solution to the heating element. Wang '554 states that the "tobacco extract 103…is natural tobacco absolute oil, a certain proportion of nicotine is mixed in after the tobacco extract is diluted with alcohols in a certain proportion, and then a mixture quantitatively soaked in the organic fiber 105. Since the tobacco extract 103 is in a liquid or paste state, when heated, the tobacco extract 103 is first vaporized into smoke." RX-0005 (Wang '554) at RX-0005.7. Thus, a portion of the solution is drawn toward the heating element via element 105, acting as a wicking material, where the portion that holds the solution is located immediately adjacent both opposite ends of the heating element.



See RX-0005 (Wang '554) at Fig. 3; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 573.

NJOY Exhibit 2008.1051
Juul v. NJOY
IPR2024-00161

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The same is true for the modified version of Wang '554, in which the heating element is turned to be perpendicular to the central longitudinal axis, because at least the ends of the heating element are in direct contact with the organic fiber solution holding medium.

Complainant asserts that liquid from the solution storage is not pulled to the heater. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-2, ¶ 132. Rather, "heat from the coil spreads through the fiber and the embedded tobacco extract is vaporized." *Id.* However, as described above, element 105 acts as a wicking material and draws a portion of the solution toward the heating element. Additionally, even under Dr. Vallee's view of Wang '554's operation, the solution in the fiber nearest the heater would heat the fastest, and therefore evaporate first, so solution further would be drawn toward the heater because that is where the solution has been vaporized the most.

3. Fang '044 in view of Xia '610 and Wang '554 and Smoke Fifty-One Duo – '881 Patent, Claim 26

The evidence will show that Fang '044 discloses or renders obvious, alone or in combination with Xia '610 and Wang '554 this limitation. *See* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶¶ 575-576; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 296-321; JX-0595 (Fang '044); JX-0596 (Xia '610); RX-0005 (Wang '554); RX-0130C (Declaration of Yardimici).

For example, Fang 044 discloses the use of temporary oil storage device 15 that has the heating wire wrapped around it, and is in fluid connection with the solution holding medium to draw oil toward the heater: "a temporary oil storage device 15 composed of a set of capillary tubes and an electric heating film wire 16, the oil storage device 14 is in contact with the temporary oil storage device 15 and the oil conservator 7 in the sucker 1, the electric heating film wire 16 is wound on the temporary oil storage device 15." Fang 044 at 1268; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 576. Fang explains that the capillary action of the temporary oil storage device draws the liquid in from the sides of the heater toward the heater: "due to the action

NJOY Exhibit 2008.1052
Juul v. NJOY
IPR2024-00161

of the capillary tubes, the temporary oil storage device 15 sucks in nicotine oil stored in the nicotine oil storage device 14, when the electric heating film wire 16 is powered on to heat, nicotine oil on the temporary oil storage device 15 is fumed to produce nicotine oil smoke." Fang 044 at 1269; *see also* JX-0633C (Leinsing Opening Rpt., Appx. A) at ¶ 576.

Complainant asserts that, because the oil storage device 14 is not part of the sucker, which Dr. Vallee claims as the "Second Cartridge", the oil storage device is not the recited solution holding medium. *See* CX-2726C (Vallee Reb. Rpt.) at Appx. A-3, ¶ 147. However, as described in claim 1[j], Dr. Vallee is incorrect that there is a first a second cartridge. *Id.*

4. Wang '927 in view of Wang '554 and NPRO Style – '881 Patent, Claim 26

The evidence will show that Wang '927 in view of Wang '554 and NPRO Style discloses or renders obvious this limitation. *See* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶¶ 233-234; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 323-356; JX-0594 (Wang '927); RX-0005 (Wang '554); RX-0080 (Photos of NPRO Style); RPX-0008 (Physical sample of NPRO Style); JX-0405 (CT Scans of NPRO Style); RX-0094 (Raw CT Scan of NPRO Style).

For example, Wang '927 discloses the atomizer holder that holds the electric heating wire in place. JX-0594 (Wang '927) at Fig. 1. A POSITA would understand that the atomizer holder is made of an insulative material because Wang '927 discloses using the air intake switch 7 and switch contact 8 to turn on or off the e-cigarette. *See e.g.*, JX-0594 (Wang '927) at JX-0594.3-5; *see also* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶ 234. Using a conductive material for atomizer housing would make the e-cigarette disclosed in Wang '927 nonfunction. *Id*. Further, Wang '927 discloses that "[a]ir carries heat generated by the electric heating wire 9, causing tobacco juice filled into the fiber filler in the tobacco juice bin 13 to vaporize to form smoke." JX-0594 (Wang '927) at JX-0594.5; *see also* JX-0634 (Leinsing Opening Rpt., Appx. B) at ¶ 234. A

NJOY Exhibit 2008.1053
Juul v. NJOY
IPR2024-00161

[redacted]

POSITA would understand that the atomizer holder is a wicking material so that it can bring tobacco juice to the heating wire for vaporization. *Id*.; JX-0594 (Wang '927) at JX-0594.3-5. Further, it was well known in the art to use ceramic, which is an insulative and wicking material for the atomizer holder. *Id*. As shown in Fig. 1 of Wang '928, the electric heating wire is in operative connection with the atomizer housing, and the atomizer housing is operative to attract a portion of the tobacco juice from drip chamber, which is located immediately adjacent opposite ends of the electric heating wire toward the heating wire. *Id*.

5. Han '364 in view of Fang '044 and NPRO Style – '881 Patent, Claim 26

The evidence will show that Han '364 in view of Fang '044 and NPRO Style discloses or renders obvious this limitation. *See* JX-0635 (Leinsing Opening Rpt., Appx. C) at ¶¶ 237-239; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 357-403; JX-0631 (Han '364 certified English Translation) ; JX-0595 (Fang '044); RX-0080 (Photos of NPRO Style); RPX-0008 (NJOY NPRO Style Kit).

For example, Fang '044 discloses temporary oil storage device 15, which serves as a wick to draw in solution, from the oil storage device 14, to electric heating film wire 16. *See* JX-0595 (Fang '044 certified English translation) at JX-0595.11; JX-0632C (Leinsing Invalidity Rpt.) at ¶ 315-321. Mr. Leinsing will opine it would have been obvious to a person of ordinary skill in the art to modify Han '364 with Fang '044 to include a wicking material for attracting solution from the solution holding medium to the heating element. *See* JX-0635 (Leinsing Invalidity Rpt., Appx. C) at ¶ 238. For example, connecting the wicking material disclosed in Fang '044 to Han's filament 6 would assist in drawing solution to the filament. *Id.* To the extent Han '364 is modified to include the orientation of the heating element disclosed in Fang '044, a person of ordinary skill in the art would have been motivated to also incorporate Fang '044's wicking material in Han '364's device, e.g., to more easily draw solution towards the filament 6, which would no longer extend vertically

NJOY Exhibit 2008.1054
Juul v. NJOY
IPR2024-00161

through the solution holding medium. *Id.* A person of ordinary skill in the art would have been motivated to make this change to ensure that Han '364's modified e-cigarette device would still consistently vaporize solution held in its solution holding medium. *Id.*

6. Red Dragon in view of Fang '044 and Wang '927 – '881 Patent, Claim 26

The evidence will show that Red Dragon in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0638 (Leinsing Opening Rpt., Appx. E) at ¶¶ 225-226; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 461-505; RX-0074 (Photos of Red Dragon Kit # 1); RX-0076 (Photos of Red Dragon Kit # 2); RX-1309 (Red Dragon Product 3 Piece Kit (Evans 2)); RX-0077 (CT scans of Red Dragon Kit #2); RX-0098 ([vg-project] Red Dragon - Cartridge_Pen Package.zip (Native)); RX-0099 ([vg-project] Red Dragon - Pen.zip (Native)); RPX-0009 (Red Dragon 3-Piece Kit); RPX-0010 (Red Dragon 3-Piece Kit (Sealed); JX-0595 (Fang '044); JX-0594 (Wang '927).

For example, under NJOY's apparent interpretation of the Asserted Claims that a component can be mapped to multiple claimed features, the airflow passageway in the Red Dragon includes, in addition to the woven spacers, a wicking material that encloses space between the woven spacers and is in operative connection with the heating coil. *See* JX-0638C (Leinsing Opening Rpt., Appx. E) at ¶ 236. The wicking material is operative to attract a portion of the e-liquid from the absorbent material that holds nicotine solution, toward the heating coil. *See id.*

7. Smoke Fifty-One Duo in view of Fang '044 and Wang '927 – '881 Patent, Claim 26

The evidence will show that Smoke Fifty-One Duo in view of Fang '044 and Wang '927 discloses or renders obvious this limitation. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶¶ 225-226; JX-0632C (Leinsing Opening Rpt.) at ¶¶ 413-460; RX-0130C (Declaration of Yardimici); JX-0595 (Fang '044); JX-0594 (Wang '927).

NJOY Exhibit 2008.1055
Juul v. NJOY
IPR2024-00161

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For example, under NJOY's apparent interpretation of the Asserted Claims that a component can be mapped to multiple claimed features, the airflow passageway in the Smoke Fifty-One Duo includes, in addition to the woven spacers, a wicking material that encloses space between the woven spacers and is in operative connection with the heating coil. *See* JX-0636C (Leinsing Opening Rpt., Appx. D) at ¶ 226. The wicking material is operative to attract a portion of the e-liquid from the absorbent material that holds nicotine solution, toward the heating coil. See id.

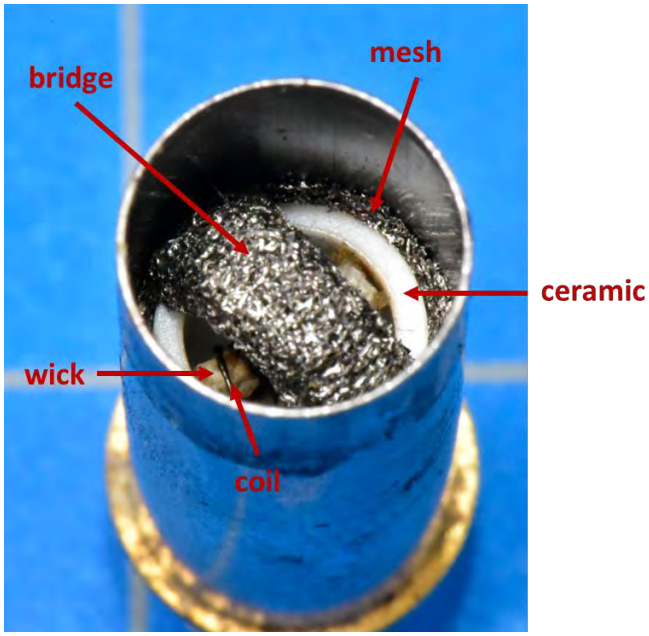
8. NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 26

The evidence will show that NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation. JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 209-211; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.

For example, the photo below shows that the atomizer of the cartridge section includes the heating coil wrapped around a wick. *Id*. The bridge and mesh surrounding the ceramic are parts of the solution holding medium and are in fluid communication with the absorbent filler. *Id*. The wick draws the solution from the solution holding medium located immediately adjacent opposite ends of the heating element, including solution from the ceramic base, towards the heating coil. *Id*. The photo below identifies the mesh is located immediately adjacent to an end of the heating coil (and wick surrounded by the heating coil). *Id*.

NJOY Exhibit 2008.1056
Juul v. NJOY
IPR2024-00161

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See RX-0082 (Photos of NJOY NPRO) at RX-0082.67 (annotated in red) *see also* JX-0640C (Leinsing Opening Rpt., Appx. F) at ¶ 233.

9. NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 – '881 Patent, Claim 26

For the same reasons why NJOY NPRO in view of Wang '554, Fang '044, and Wang '927 discloses or renders obvious this limitation, the NJOY NCIG in view of Wang '554, Fang '044, and Wang '927 also discloses or renders obvious this limitation. *See* JX-0632C (Leinsing Invalidity Rpt.) at ¶¶ 584-612; JX-0640C (Leinsing Invalidity Rpt., Appx. G) at ¶¶ 232-233; RPX-0006 (NJOY NCIG Sample); RX-0084 (Photos of NJOY NCIG); JX-0402 (CT Scans of NJOY NCIG); RX-0090 (CT scan of NCIG); RX-0109C (NJOY NCIG User Guide); JX-0482C (NJOY Welcomes to the Tobacco Plus Expo 2009), JX-0482C.3.

10. Cigarette Electronique – '881 Patent, Claim 26

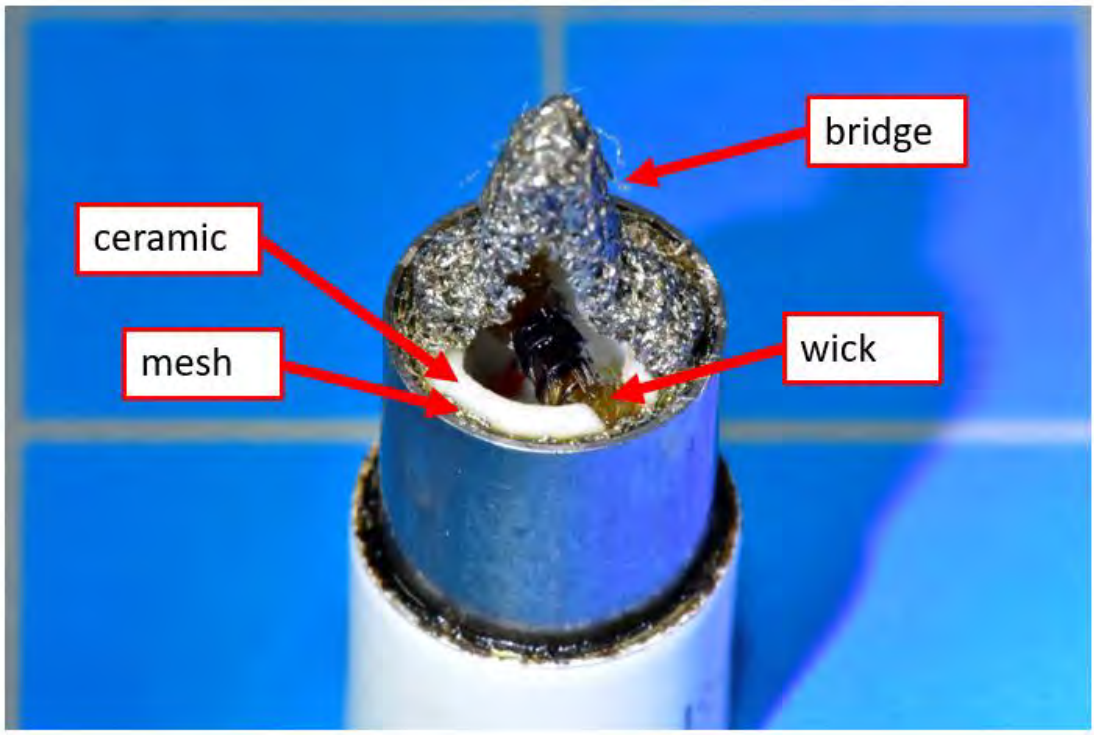
The evidence will show that Cigarette Electronique discloses or renders obvious this limitation. *See* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶¶ 265-266; JX-0632C (Leinsing

NJOY Exhibit 2008.1057
Juul v. NJOY
IPR2024-00161

[redacted]

Opening Rpt.) at ¶¶ 506-547; RX-0072 (Photos of Cigarette Electronique); RPX-0011 (Cigarette Electronique Kit).

For example, the photo below shows that the atomizer of the cartridge section includes a wick, around which the heating element is wrapped (the atomizer is part of the cartridge section). The bridge and mesh surrounding the ceramic are parts of the solution holding medium and are in fluid communication with the batting material. The wick draws the solution towards the heating element via capillary action. The photo below identifies the mesh is located immediately adjacent to an end of the heating element (and wick surrounded by the heating element).



See CX-2763 at CX-2763.9; *see also* JX-0639C (Leinsing Opening Rpt., Appx. F) at ¶ 266.

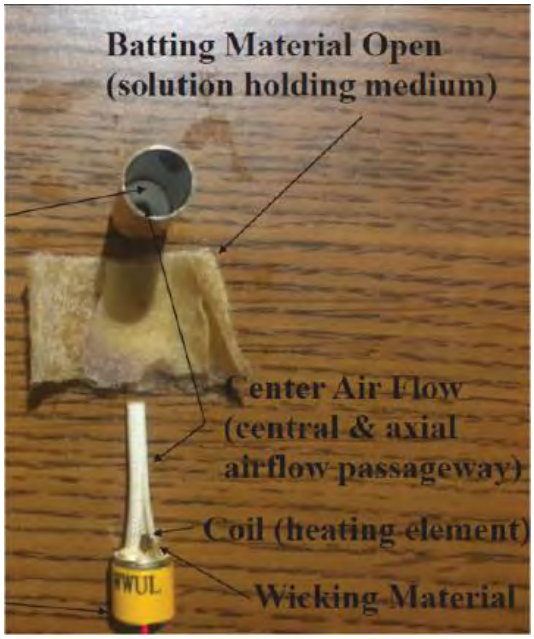
NJOY Exhibit 2008.1058
Juul v. NJOY
IPR2024-00161

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11. Fuma Prototype – '881 Patent, Claim 26

The Evidence will show that the Fuma Prototype discloses this limitation. *See, e.g.,* Leinsing Opening Rpt., Appx. H) at ¶¶ 206-208; NJOY's 13th Supp. ROG Responses; RX-0078 (Photos of Fuma Starter Kit); RX-0079 (CT scans of Fuma Starter Kit).

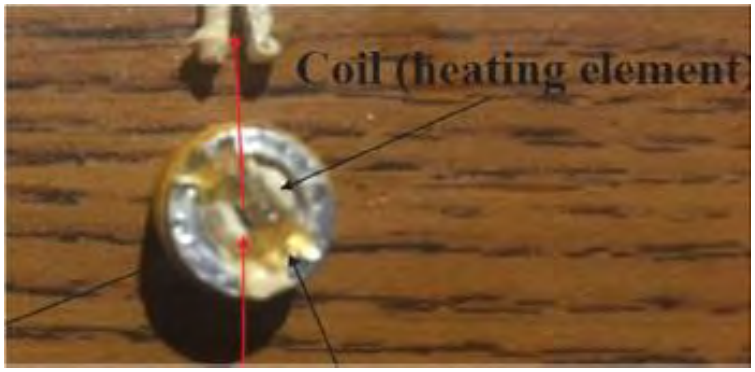
For example, the Fuma Cartridge includes a wick that goes through the center of the heating coil as shown below. The heating coil is in operative connection with the wick and the wick is operative to attract a portion of the solution from the batting material located immediately adjacent opposite ends of the heating coil.



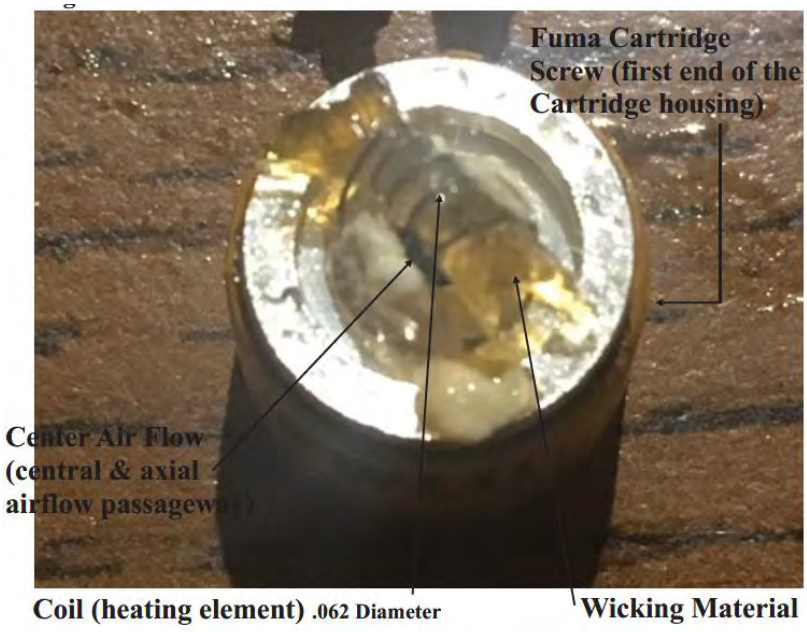
See '881 Priority Chart at 71 (citing CRTP Attachment D at Fig. 11).

NJOY Exhibit 2008.1059
Juul v. NJOY
IPR2024-00161

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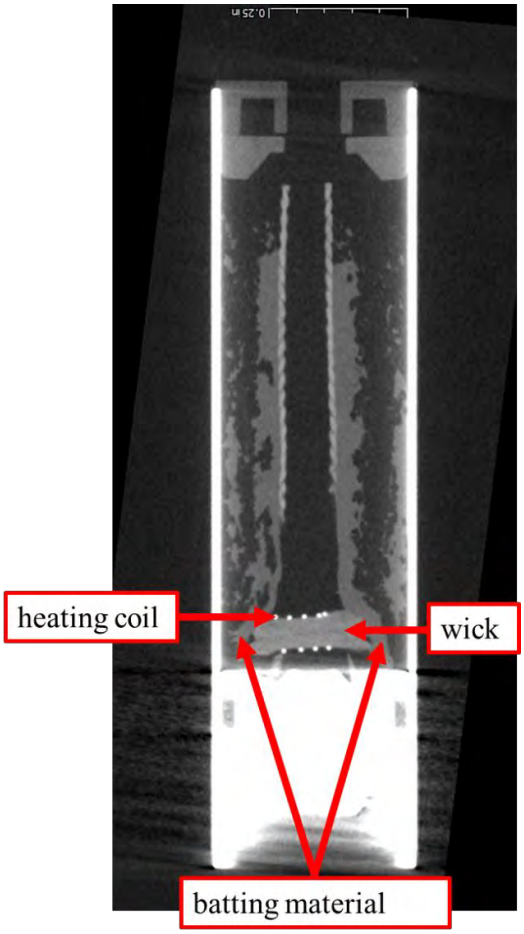
See CRTP Attachment D at Fig. 13.



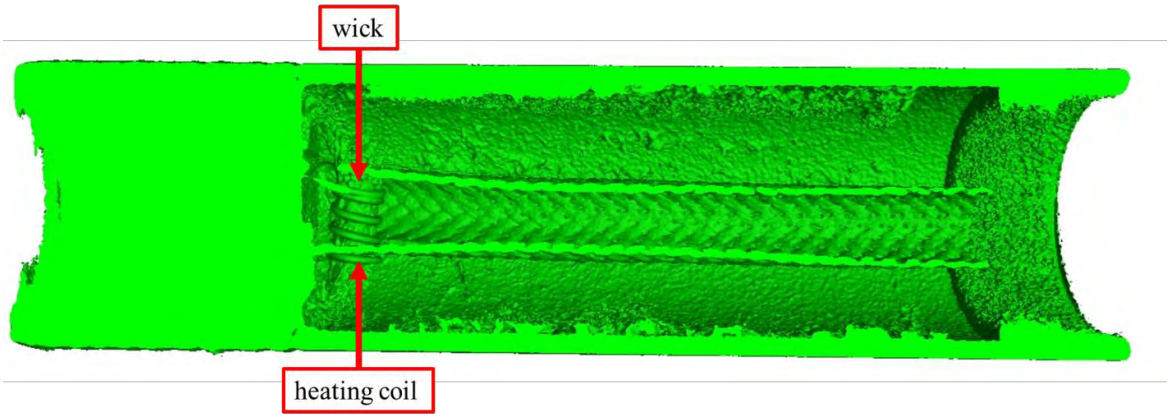
See CRTP Exhibit A at Fig. 14.

NJOY Exhibit 2008.1060
Juul v. NJOY
IPR2024-00161

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See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.17 (annotated in red).



See RX-0079 (CT scans of Fuma Starter Kit) at RX-0079.1 (annotated in red).

[redacted]

The inventor of the Asserted Patents further admitted that the Fuma Prototype discloses claim element 26. *See* Conley '881 Declaration at ¶5 (Dependent claims 46).

NJOY also admitted that the Fuma Prototype discloses claim element 26. *See* '881 Priority Chart at 71.

ii. Lack of Written Description

As Mr. Leinsing will explain, each of claims 1, 16, 18, 19, and 26 of the '881 Patent is invalid for lack of written description as required by 35 U.S.C. § 112.

a. Airflow Passageway

Each of claims 1, 16, 18, 19, and 26 of the '881 Patent recites the claim feature of an airflow passageway extending from a first aperture to a second aperture. For the same reasons discussed in Section IV.G.1.iii.a., *supra*, in connection with the airflow passageway extending from a first aperture to a second aperture, each of claims 1, 16, 18, 19, and 26 of the '881 Patent lacks written description and is therefore invalid.

b. Interior and solution holding medium

Each of claims 1, 16, 18, 19, and 26 of the '881 Patent separately and distinctly recites an "interior" and a "solution holding medium." *See e.g.*, JX-0004 ('881 Patent) at claim 16 ("a housing having an interior and a solution holding medium"). For the same reasons discussed in Section IV.G.1.iii.c., *supra*, in connection with the interior and solution holding medium, each of claims 1, 16, 18, 19, and 26 of the '881 Patent lacks written description and is therefore invalid.

c. Heating Element

Each of claims 1, 16, 18, 19, and 26 of the '881 Patent recites a heating element configured to vaporize a portion of solution. For the same reasons discussed in Section IV.G.1.iii.e., *supra*, in connection with the heating element configured to vaporize a portion of solution, each of claims 1, 16, 18, 19, and 26 of the '881 Patent lacks written description and is therefore invalid.

NJOY Exhibit 2008.1062
Juul v. NJOY
IPR2024-00161

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d. Solution holding medium partially surrounding airflow passageway and heating element

Independent claim 1 of the ’881 Patent recites “wherein the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end.” JX-0004 (’881 Patent) at claim 1.

NJOY may contend that this requirement is met where the alleged solution holding medium merely partially surrounds some, but not all, of the airflow passageway and heating element. *See* CX-2157C (Vallee Opening Report) at ¶ 1892. But under such an interpretation, Mr. Leinsing will explain that claim 1 of the ’881 is invalid for a lack of written description.

The ’881 Patent only describes (and claims) the airflow passageway and heating element as being surrounded, and do not describe any embodiments in which a solution holding medium merely partially surrounds some, but not all, of the airflow passageway and heating element. For example, Figures 2 and 3 of the ’881 Patent depicts the cartridge as a cylindrical device, with the solution holding medium 204 surrounding the heating element and airflow passageway through 360 degrees of the cylinder. *See* JX-0004 (’881 Patent) at Figs. 2-3. So the ’881 Patent would not lead a POSITA to understand that the applicants possessed that entire scope of the claimed invention—the claims would extend beyond the described purported inventions to more broadly ensnare devices not described in the specification, including devices where a solution holding medium merely partially surrounds some, but not all, of the airflow passageway and heating element. Such a partial surrounding feature is also not disclosed in the ’819 Provisional, ’097 Provisional, and the ’917 Application and, thus, would not be entitled to a priority date on the basis of any of those applications for similar reasons as discussed above.

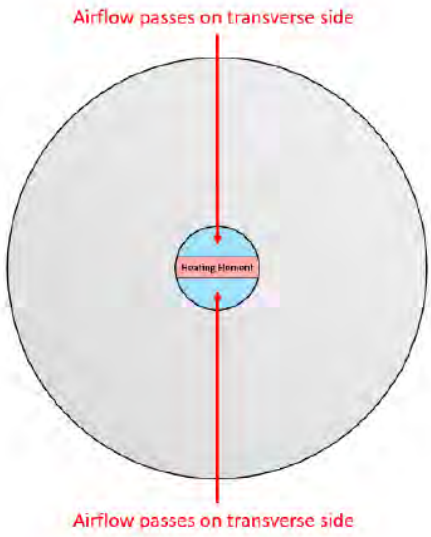
Dr. Vallee may opine that the ’881 Patent provides written description support for partial surrounding because the solution holding medium does not completely surround all sides of the

NJOY Exhibit 2008.1063
Juul v. NJOY
IPR2024-00161

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airflow passageway in Figure 1. *See* CX-2726C (Vallee Rebuttal Report) at ¶ 477. However, figure 1 is a "functional block diagram" and, thus, it is not intended to convey specific structure. JX-0004 ('881 Patent) at 2:18-19.

Dr. Vallee may also opine that figures 2 and 3 do not depict a complete 360 degree surrounding of the airflow passageway by the solution holding medium. *See* CX-2726C (Vallee Rebuttal Report) at ¶ 478. But Dr. Vallee provided the following alleged top-down view of figure 2, which shows a complete 360 degree surrounding of the airflow passageway by the solution holding medium.



CX-2726C (Vallee Rebuttal Report) at ¶ 498.

iii. Lack of Enablement

As Mr. Leinsing will explain, each of claims 1, 16, 18, 19, and 26 of the '881 Patent is invalid for lack of enablement as required by 35 U.S.C. § 112.

a. Airflow Passageway

Each of claims 1, 16, 18, 19, and 26 of the '881 Patent recites the claim feature of an airflow passageway extending from a first aperture to a second aperture. For the same reasons discussed

NJOY Exhibit 2008.1064
Juul v. NJOY
IPR2024-00161

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in Section IV.G.1.iv.a., *supra*, in connection with the airflow passageway extending from a first aperture to a second aperture, each of claims 1, 16, 18, 19, and 26 of the '881 Patent lacks enablement and is therefore invalid.

b. Solution holding medium, reservoir

Each of claims 1, 16, 18, 19, and 26 of the '881 Patent recites the claim feature of solution holding medium / reservoir. For the same reasons discussed in Section IV.G.1.iv.c., *supra*, in connection with the claim feature of solution holding medium / reservoir, each of claims 1, 16, 18, 19, and 26 of the '881 Patent lacks enablement and is therefore invalid.

c. Interior and solution holding medium

Each of claims 1, 16, 18, 19, and 26 of the '881 Patent recites the claim feature of an "interior" separate and distinct from a "solution holding medium." For the same reasons discussed in Section IV.G.1.iv.d., *supra*, in connection with the claim feature of an "interior" separate and distinct from a "solution holding medium," each of claims 1, 16, 18, 19, and 26 of the '881 Patent lacks enablement and is therefore invalid.

d. Airflow passing both transverse sides of heating element

Each of claims 1, 16, 18, 19, and 26 of the '881 Patent recites the claim feature of an airflow passing on both transverse sides of heating element. For the same reasons discussed in Section IV.G.1.iv.e., *supra*, in connection with the claim feature of an airflow passing on both transverse sides of heating element, each of claims 1, 16, 18, 19, and 26 of the '881 Patent lacks enablement and is therefore invalid.

e. Distinct airflows

Independent claims 1 and 16 of the '881 Patent recites "an airflow through the cartridge from the first aperture to the second aperture" and "an airflow from the second aperture" — *i.e.*,

NJOY Exhibit 2008.1065
Juul v. NJOY
IPR2024-00161

two distinct airflows, one that is from the first aperture to the second aperture, and another that is from the second aperture.

As Mr. Leinsing will explain, each of independent claims 1 and 16 and their dependent claims 18 19, and 26 of the ’881 Patent is invalid for a lack of enablement for the alleged claim feature of two distinct airflows: the airflow from the second aperture that is distinct from the airflow between the first and second apertures. *See* JX-0632C (Leinsing Opening Report) at ¶ 700. To the extent NJOY or Dr. Vallee rely on the ’881 Patent’s discussion of a gap 228 between the first end of the housing and the absorbent material 200, which “can be utilized to mix air and the vaporized liquid solution to provide the user with an appropriate amount of vaporized solution,” JX-0004 (’881 Patent) 6:56-61, Mr. Leinsing will explain that this disclosure does not enable a POSITA to understand how to make and use a device that could mix vaporized solution with air to provide a second airflow from the second aperture that is distinct from the airflow between the first and second apertures, without undue experimentation. In the cartridge 200 of Figure 2, for example, gap 228 is depicted adjacent to the second end 206, which is intended to be received orally by an individual. This will prevent the gap from allowing any air to mix with vaporized solution, creating an airflow from the second aperture that is distinct from the airflow between the first and second apertures. Thus, the ’881 Patent claims are invalid as non-enabled.

f. Solution holding medium partially surrounds airflow passageway and heating element

Independent claim 1 of the ’881 Patent recites “wherein the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end.” JX-0004 (’881 Patent) at claim 1.

NJOY may contend that this requirement is met where the alleged solution holding medium merely partially surrounds some, but not all, of the airflow passageway and heating element. *See*

NJOY Exhibit 2008.1066
Juul v. NJOY
IPR2024-00161

CX-2157C (Vallee Opening Report) at ¶ 1892. But under such an interpretation, Mr. Leinsing will explain that claim 1 of the '881 is invalid for a lack of enablement because a POSITA would not know how to make and use such a device without undue experimentation.

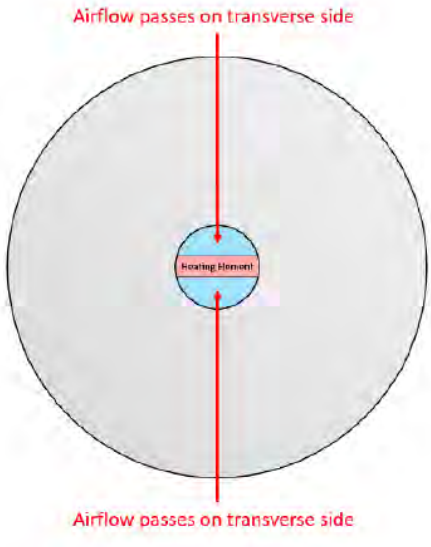
The '881 Patent only describes (and claims) the airflow passageway and heating element as being surrounded, and do not describe or provide any guidance on how to make or use any embodiments in which a solution holding medium merely partially surrounds some, but not all, of the airflow passageway and heating element. For example, Figures 2 and 3 of the '881 Patent depicts the cartridge as a cylindrical device, with the solution holding medium 204 surrounding the heating element and airflow passageway through 360 degrees of the cylinder. *See* JX-0004 ('881 Patent) at Figs. 2-3. So the '881 Patent would not lead a POSITA to understand how to make and use such a device without undue experimentation.

Dr. Vallee may opine that the '881 Patent enables partial surrounding because the solution holding medium does not completely surround all sides of the airflow passageway in Figure 1. *See* CX-2726C (Vallee Rebuttal Report) at ¶ 570. However, figure 1 is a "functional block diagram" and, thus, it is not intended to convey specific structure. *See* JX-0004 ('881 Patent) at 2:18-19.

Dr. Vallee may also opine that figures 2 and 3 do not depict a complete 360 degree surrounding of the airflow passageway by the solution holding medium. *See* CX-2726C (Vallee Rebuttal Report) at ¶ 571. But Dr. Vallee provided the following alleged top-down view of figure 2, which shows a complete 360 degree surrounding of the airflow passageway by the solution holding medium.

NJOY Exhibit 2008.1067
Juul v. NJOY
IPR2024-00161

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CX-2726C (Vallee Rebuttal Report) at ¶ 498.

iv. Indefiniteness

As Mr. Leinsing will explain, each of claims 1, 16, 18, 19, and 26 of the '881 Patent is indefinite and invalid under 35 U.S.C. § 112.

a. Interior and solution holding medium

Each of claims 1, 16, 18, 19, and 26 of the '881 Patent recites the alleged claim feature of an interior of the housing being part of the same structure as a solution holding medium. For the same reasons discussed in Section IV.G.1.v.a., *supra*, in connection with the alleged claim feature of interior of the housing being part of the same structure as a solution holding medium, each of claims 1, 16, 18, 19, and 26 of the '881 Patent is indefinite and therefore invalid.

b. Solution holding medium partially surrounding airflow passageway and heating element

Independent claim 1 of the '881 Patent recites "wherein the solution holding medium surrounds the airflow passageway and the heating element in the interior of the housing and intermediate of the first end and the second end." JX-0004 ('881 Patent) at claim 1.

NJOY Exhibit 2008.1068
Juul v. NJOY
IPR2024-00161

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NJOY may contend that this requirement is met where the alleged solution holding medium merely partially surrounds some, but not all, of the airflow passageway and heating element. *See* CX-2157C (Vallee Opening Report) at ¶ 1892. But under such an interpretation, Mr. Leinsing will explain that claim 1 of the '881 is invalid for indefiniteness because a POSITA would not be able to ascertain the metes and bounds of the scope of the claim or what the inventors regarded to be their invention. As an example, a POSITA would not be able to ascertain with reasonable certainty that the claimed "surrounding" includes a partial surrounding of some, but not all, of the airflow passageway and heating element. As another example, a POSITA would not be able to ascertain with reasonable certainty the degree of partial "surrounding" that does or does not satisfy the claims.

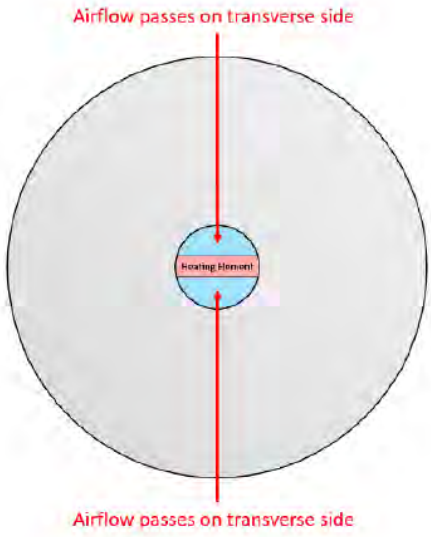
The '881 Patent only describes the airflow passageway and heating element as being completely surrounded, and provides no objective measure by which a POSITA could otherwise determine if the airflow passageway and/or heating element are surrounded. For example, Figures 2 and 3 of the '881 Patent depicts the cartridge as a cylindrical device, with the solution holding medium 204 surrounding the heating element and airflow passageway through 360 degrees of the cylinder. *See* JX-0004 ('881 Patent) at Figs. 2-3. Accordingly, claim 1 of the '881 Patent is invalid as indefinite under NJOY's apparent construction.

Dr. Vallee may opines that the '881 Patent has written description support for partial surrounding because the solution holding medium does not completely surround all sides of the airflow passageway in Figure 1. *See* CX-2726C (Vallee Rebuttal Report) at ¶¶ 620, 477. However, figure 1 is a "functional block diagram" and, thus, it is not intended to convey specific structure. JX-0004 ('881 Patent) at 2:18-19.

NJOY Exhibit 2008.1069
Juul v. NJOY
IPR2024-00161

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Dr. Vallee may also opine that figures 2 and 3 do not depict a complete 360 degree surrounding of the airflow passageway by the solution holding medium. *See* CX-2726C (Vallee Rebuttal Report) at ¶¶ 620, 478. Yet Dr. Vallee provided the following alleged top-down view of figure 2, which shows a complete 360 degree surrounding of the airflow passageway by the solution holding medium.



CX-2726C (Vallee Rebuttal Report) at ¶ 498.

3. Secondary Considerations

NJOY and Dr. Vallee are expected to argue at the Hearing that there are objective indicia of nonobviousness (*i.e.*, secondary considerations of nonobviousness) that show that the Asserted Claims are nonobvious, despite the prior art put forth by JLI. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶¶ 2049-2114. Specifically, Dr. Vallee is expected to testify at the Hearing that there is evidence relating to the following objective indicia of nonobviousness: copying, long-felt need and a failure of others, industry praise, commercial success, and contrary to accepted wisdom in the field. *See id.* The evidence put forth at the Hearing by NJOY will fail to tie the alleged secondary considerations of nonobviousness to the alleged nonobvious features

NJOY Exhibit 2008.1070
Juul v. NJOY
IPR2024-00161

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of the Asserted Claims, and will also fail to establish that the alleged secondary considerations are significant and substantial enough to overcome JLI's strong evidence of obviousness in view of prior art.

Importantly, the evidence will show that everything recited in the Asserted Claims was well-known as early as 2008 (before the alleged invention was allegedly conceived), and certainly prior to July 2009 (the alleged conception date) and August 2010 (when the '917 Application, to which the Asserted Patents claim priority, was filed). *See supra* §§ I.3; IV.G.1.i. Dr. Vallee, for example, concedes that at least the following features were well-known in the art at the time of the alleged invention: (i) e-cigarette devices, (ii) e-cigarette devices with internal componentry "[w]ithin some housing", (iii) e-cigarette devices that included a heating device for vaporizing tobacco or nicotine solution, (iv) an air inlet, (v) an air outlet, (vi) air inlets and outlets on diametrically opposed, opposite ends of a cartridge, (vii) some way for nicotine vapor to get from the device to the user, e.g., via a passageway through which air and vapor can flow, (viii) a central and axial airflow passageway, (ix) a heating element within an airflow passageway, (x) a heating element transverse to the central longitudinal axis of the housing. *See, e.g.,* RX-1014C (Vallee (April 12, 2024)) at RX-1014C.293:2-6, 293:21-295:1, 322:22-24, 323:8-18. Mr. Leinsing will also explain at the Hearing that each and every element of the Asserted Claims was well-known or otherwise obvious at the time of the alleged invention, either separately or as organized in the Asserted Claims. *See supra* §§ I.3; IV.G.1.i; IV.G.1.xiv; IV.G.2.i.

Dr. Vallee himself struggles to identify any specific claimed features that were not known at the time of the alleged invention, and is expected to argue that although all components of all asserted claims were known, the combination of features is the allegedly nonobvious invention embodied in the Asserted Claims. *See* RX-1014C (Vallee (April 12, 2024)) at RX-1014C.293:2-6,

NJOY Exhibit 2008.1071
Juul v. NJOY
IPR2024-00161

293:21-295:1, 322:22-24, 323:8-18; *see also id.* at RX-1014C.326:7-328:7; CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶¶ 2049-2114. Specifically, Dr. Vallee is expected to argue that arranging a heating coil and wick transversely across a central airflow passageway surrounded by a solution holding medium is the alleged inventive concept over the prior art. *See, e.g.,* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶¶ 2051 ("available ENDS cartridges were inferior, because they lacked the claimed heating element oriented transversely across a central airflow passageway surrounded by a solution holding medium"); 2106 ("As to the designs that did include cartomizers, these devices lacked a heating coil transversely across a central airflow passageway."). But as Mr. Leinsing will explain, that is far from the truth: in reality, this feature was known and/or obvious in light of the prior art cited by JLI. *See supra* §§ I.3; IV.G.1.i; IV.G.1.xiv.g, j-k, r, y, gg-hh, kk-ll; IV.G.2.i.g, k-m, u-w, y; RX-1031C (Rebuttal Expert Report of Karl Leinsing) at ¶ 224. For at least these reasons, NJOY's alleged evidence of secondary considerations will be unable to overcome the strong evidence of obviousness to be put forth at the Hearing. *See id*. NJOY's alleged evidence of secondary considerations is also fundamentally flawed for at least the following reasons.

i. NJOY cannot establish any nexus between the Asserted Claims and the alleged evidence of secondary considerations

NJOY and Dr. Vallee are expected to allege at the Hearing that the Fuma device described in Mr. Conley's declaration is a product embodying the Asserted Claims. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 66. Neither NJOY nor Dr. Vallee have provided any analysis as to whether the Fuma device or the alleged Fuma Prototype are co-extensive with the Asserted Claims, or otherwise that a presumption of nexus exists for secondary considerations; nor will Dr. Vallee be able to testify that NJOY is entitled to any such presumption. *See generally* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.); CX-2726C (Rebuttal Expert Report of

NJOY Exhibit 2008.1072
Juul v. NJOY
IPR2024-00161

Glenn Vallee, Ph.D.); RX-1388C (Complainant's Fifteenth Supplemental Objections and Responses to Respondent's First Set of Interrogatories (Nos. 3, 6, 7, 10, 15, 16, 177, 19, 23)). Nor could they; As Mr. Leinsing will explain, there are several unclaimed features of the Fuma device and alleged Fuma Prototype that materially impact the functionality and success of the device, such as a power adapter and switch sensor. RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 225-231. The evidence, therefore, will show that there cannot be a presumed nexus between the alleged secondary considerations evidence and the Asserted Claims, as JLI will provide unrebutted evidence that neither the Fuma device nor the alleged Fuma prototype are coextensive with the Asserted Claims.

NJOY will also fail to establish any nexus between its evidence put forth for secondary considerations and the Asserted Claims. As explained in more detail below, and as Mr. Leinsing will explain, NJOY and Dr. Vallee have failed to tie any of the alleged evidence of secondary considerations to any particular feature of the Asserted Claims, much less the allegedly nonobvious features of the Asserted Claims. RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 223-224.

a. The Fuma device is not co-extensive with the Asserted Claims

NJOY and Dr. Vallee will fail to establish at the Hearing that either the Fuma device or the alleged Fuma Prototype are coextensive with the claims. While NJOY and Dr. Vallee will likely argue that the Fuma device and alleged Fuma Prototype practice the Asserted Claims, this is not the correct test for establishing that the patented product is ***coextensive*** with the Asserted Claims. *Fox Factory, Inc.,* 944 F.3d 1366 at 1377 ("We reject SRAM's attempt to reduce the coextensiveness requirement to an inquiry into whether the patent claims broadly cover the product that is the subject of the evidence of secondary considerations."). Indeed, Mr. Leinsing will provide unrebutted testimony that the Fuma device and alleged Fuma Prototype include several important

NJOY Exhibit 2008.1073
Juul v. NJOY
IPR2024-00161

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unclaimed features that both the disclosure of the Asserted Patents themselves, and named inventor Gregory Conley, have described as being important features of the Fuma device, and which are therefore material to the functionality and alleged benefits of the Fuma device over other devices in the market at the time of the alleged invention: an adapter for connecting the Fuma cartridge to non-Fuma batteries, and a flow sensor for improving the battery life of Fuma devices. RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 225-231. As Mr. Leinsing will explain, this necessarily prevents the Fuma device from being coextensive with the Asserted Claims. *See id.*

1. Adapter

As Mr. Leinsing will explain at the Hearing, in 2009, Fuma offered a "Fuma adapter" with its cartridges, and specifically marketed the Fuma cartridge as being able to connect to an NJOY e-cigarette battery via the adapter. *See* RX-0987C (Email from Fuma Customer Service re: Introducing the Fuma Adapter) at RX-0987C.1; *see also* RX-0988C (Email from Fuma Customer Service re: Introducing the Fuma Adapter) at RX-0988C.1 (touting that the Fuma adapter is "Patent protected"); *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 226. As Mr. Leinsing will explain, the evidence shows that Fuma believed and represented that the adapter is a key feature of its products, and that Fuma and the named inventors believed the adapter, specifically, separated its products from its competition. *See, e.g.,* RX-1211C (Email from G. Conley to D. Potter); RX-0987C (Email from Fuma Customer Service re: Introducing the Fuma Adapter) at RX-0987C.1; RX-0988C (Email from Fuma Customer Service re: Introducing the Fuma Adapter) at RX-0988C.1; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 227-228. For example, the evidence will show that Greg Conley, a named inventor of the Asserted Patents, noted to RJR's Vice President of Strategic Innovations, Dennis Potter, that one of the major value-adds of the Fuma device was an adapter Mr. Conley was seeking patent protection for that would allow the FUMA cartridge to be used with "all loss leader batteries in the market." *See*

NJOY Exhibit 2008.1074
Juul v. NJOY
IPR2024-00161

RX-1211C (Email from G. Conley to D. Potter); RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 227.

The evidence will show that Fuma's patent filings are consistent with the understanding that Fuma believed that the adapter was a significant, if not one of the most significant, features of the Fuma device. *See* RX-0039C (Certified US Patent Application No. 61/271,819); JX-0003 ('881 Patent); JX-0001 ('864 Patent); RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 227. While (as is explained *supra*) there are many features of the Fuma device and alleged Fuma Prototype that are not disclosed in the '819 Provisional filed by the named inventors, the '819 Provisional ***does*** include extensive disclosure directed to the design of a "Power Source to Cartridge adapter for electronic cigarettes." *See* RX-0039C (Certified US Patent Application No. 61/271,819), at 1. The '819 Provisional describes the adapter as allowing multiple brands of power sources to connect to various cartridges. *See id*. As Mr. Leinsing will explain, Fuma also sought further patent protection of the adapter feature when it pursued claims directed to the adapter during prosecution of the '917 Application (Fuma's first non-provisional filing, which was eventually abandoned). *See* RX-0532 (Prosecution History of '917 Application), Amendment dated March 28, 2014, claim 21; RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 228.

In the asserted patents themselves, the invention is described as "an adapter" that solves problem of interoperability of e-cigarette cartridges, which need to be replaced over time and which a user may desire to buy from a variety of manufacturers, with the battery portion of the e-cigarette, which generally need only be bought once, but may have compatibility issues with different cartridges from different manufacturers without the allegedly-inventive adapter. JX-0003 ('881 Patent), at JX-0004.1:58-2:7, 10:4-54, Figs. 7-8; JX-0001 ('864 Patent), at JX-0001.1:60-2:9, 10:6-57, Figs. 7-8; RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 227. Specifically,

NJOY Exhibit 2008.1075
Juul v. NJOY
IPR2024-00161

[redacted]

the Asserted Patents states "manufacturers of vaporizers generally manufacture a power source and a heating element in a proprietary manner, such that only a heating element provided by the manufacturer can be …coupled to a power source provided by the manufacturer. *See, e.g.,* JX-0001 ('864 Patent), at JX-0001.1:64-2:1. "Typically, the power source (battery) is significantly more expensive than associated cartridges," discouraging users from trying products from different manufacturers. *See id.*, at 2:1-6. The adapter disclosed in the Asserted Patents seeks to solve this issue by enabling the user to use a power source of one manufacturer with the heating element of another manufacturer through use of an adapter that facilitates a connection between components made by different manufacturers. *See id.*, at 2:6-9. *See also id.*, at FIGs. 7-8; 10:6-57.

Notably, and as Mr. Leinsing will explain, this feature is ***not*** claimed in either Asserted Patent. *See generally* JX-0004 ('881 Patent); JX-0001 ('864 Patent); RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 226-228. Thus, as the adapter is material to the functionality of the Fuma device and (at least according to Fuma) one of the key features distinguishing the Fuma device from others on the market, NJOY and Dr. Vallee will be unable to establish that the Fuma device is coextensive with the Asserted Claims, so as to attribute the alleged secondary considerations evidence to the claimed features of the alleged invention. RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 228.

2. Switch/Sensor

As Mr. Leinsing will also explain at the Hearing, Fuma also considered its "flow sensor" which was designed to work with timers (i.e., via a controller) to improve the battery life of the Fuma device, to be a key feature that differentiated the Fuma device from other e-cigarette devices on the market. *See* JX-0548C (Conley (Dec. 4, 2019)), at 98:14-99:2; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 229-231. As Mr. Leinsing will explain, this unclaimed feature is also disclosed in the Asserted Patents.

NJOY Exhibit 2008.1076
Juul v. NJOY
IPR2024-00161

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For example, the evidence will show that the Background of the Asserted Patents explains that "when the user places the mouthpiece in her mouth and draws from the mouthpiece, the user receives vaporized nicotine." *See* JX-0004 ('881 Patent) at JX-0004.1:26-28; JX-0001 ('864 Patent), at JX-0001.1:28-30. As Mr. Leinsing will explain, the Asserted Patents describe use of a switch/sensor 112 that opens/closes an electrical circuit between the battery 118 and the heating element 126. *See* JX-0004 ('881 Patent) at JX-0004.4:42-59; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 230. "[T]he switch/sensor 112 may comprise a timed switch that opens the circuit between the battery 118 and the heating element 126 after the circuit has been closed for a threshold amount of time." JX-0004 ('881 Patent) at JX-0004.5:23-26. As explained with respect to an unclaimed embodiment, "[t]he controller may also be operative to store time and/or date information in association with the measured amounts of inhaled vaporized solution … the controller may be operative to operate the heating element responsive to the information stored…" JX-0004 ('881 Patent) at JX-0004.12:57-62.

Importantly, as the evidence will show, the switch/sensor features are critical unclaimed features in the Asserted Patents. For instance, as Mr. Leinsing will explain, turning on and off the battery (thereby turning on and off vaporization) based on the user drawing air through the device improves the user's vaping experience by not having to manually turn on and off the battery. *See* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 230. Additionally, the switch/sensor also improves the battery life by turning off whenever the user is not drawing air into the device. *See id.* at 230. Mr. Conley testified that he felt these features were so critical that he modified KR808-D1 batteries to include these features for the Fuma device. *See* JX-0548C (Conley (Dec. 4, 2019)), at 98:14-99:2.

NJOY Exhibit 2008.1077
Juul v. NJOY
IPR2024-00161

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Thus, as the timed switch/sensor is not a claimed feature of the Asserted Patents, but nevertheless materially impacts the functionality of the Fuma device, the evidence will show that the Fuma device is also not coextensive with the claims of the Asserted Patents because of the switch-sensor feature.

b. NJOY cannot establish any alternative basis for nexus

As Mr. Leinsing will explain, in addition to failing to provide evidence to establish a presumed nexus between the Fuma product and the Asserted Claims, NJOY and Dr. Vallee will also fail to provide evidence that there is any nexus between the evidence provided for each of the alleged objective indicia of nonobviousness and the Asserted Claims. RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 232. For example, as explained below, and as Mr. Leinsing will testify at the Hearing, NJOY and Dr. Vallee have not provided, and will be precluded at the Hearing from providing, any analysis linking the alleged evidence of objective indicia to any particular feature of the Asserted Claims, much less to the allegedly nonobvious design choice to include a transverse heating element in a central and axial airflow passageway that is surrounded by a solution holding medium. RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 232.

ii. NJOY cannot establish that any entities copied the Fuma device

NJOY and Dr. Vallee are expected to argue at the Hearing that multiple entities, including RJR, JLI, and others, copied the "Fuma design." *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶¶ 2055-2090. As explained below, and as Mr. Leinsing will explain at trial, NJOY will fail to establish that any of the aforementioned entities copied the Fuma device or the "Fuma design," and to the extent any entities even expressed positive impressions of any Fuma product, there is no evidence it had anything to do with any allegedly-innovative features of the claims. RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 234-246.

NJOY Exhibit 2008.1078
Juul v. NJOY
IPR2024-00161

[redacted]

a. NJOY has not put forth sufficient evidence to prove RJR copied the Fuma device

Dr. Vallee is expected to testify at the Hearing that RJR eventually developed an e-cigarette device that included the same coil orientation as the Fuma device after discussing the Fuma device with the named inventors of the Asserted Patents; according to Dr. Vallee, this sufficiently shows that RJR copied the Fuma device. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶¶ 2055-2078. As Mr. Leinsing will explain, however, that horizontal coils were well-known in the prior art, and that NJOY's evidence is insufficient to show (i) that RJR copied the Fuma device, much less (ii) that RJR copied the Fuma device because of the Fuma device's transverse coil in a central airflow passageway. RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 234-240.

For example, Dr. Vallee states that RJR eventually came up with as many as 279 design ideas. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2055-2078 However, as Mr. Leinsing will explain, Dr. Vallee will not provide any analysis of the 279 design ideas RJR developed before becoming aware of the Fuma device, much less provide any evidence that RJR had not developed a design with a transverse heating element or a transverse heating element within a central airflow passageway, or any other component of the asserted claims that is allegedly innovative, prior to seeing the Fuma device. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2072; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 235. Nor will Dr. Vallee provide any analysis of the research RJR had conducted prior to seeing the Fuma device to establish that RJR had been unaware of the concept of orienting a heating element transversely in an airflow passageway before seeing the Fuma device. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2072; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 238. NJOY and Dr. Vallee, therefore, will provide no evidence that the coil

NJOY Exhibit 2008.1079
Juul v. NJOY
IPR2024-00161

orientation in RJR products is specifically attributable to the Fuma device, rather than attributable to any of the other hundreds of designs RJR analyzed as part of its internal design process.

As Mr. Leinsing will explain, and as Dr. Vallee already concedes, horizontal heating elements, and horizontal heating elements within airflow passageways, were well-known in the art at the time of the alleged invention. *See supra* §§ I.3; IV.G.1.i; IV.G.1.xiv.g, j-k, r, y, gg-hh, kk-ll; IV.G.2.i.g, k-m, u-w, y; *see also* RX-1031C (Rebuttal Expert Report of Karl Leinsing) at ¶ 224; *see also* RX-1014C (Vallee (Apri. 12, 2024)) at 322:6-11, 323:16-18; JX-0632C (Leinsing Opening Expert Report) at ¶¶ 403. Furthermore, rotating the orientation of a heating element is an obvious modification that would be obvious to try for many reasons, as discussed above and as Mr. Leinsing will explain. *See supra* §§ I.3; IV.G.1.i; IV.G.1.xiv.g, j-k, r, y, gg-hh, kk-ll; IV.G.2.i.g, k-m, u-w, y; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 546. NJOY's and Dr. Vallee's primary argument will be that RJR copied the Fuma device because the RJR products practice the Asserted Claims. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2056-2078; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 234-240. Merely alleging that the RJR products practice the Asserted Claims, without more, is insufficient to prove RJR "copied" the Fuma device, particularly when the parties contest whether any RJR products at issue in this Investigation actually practice the Asserted Claims, much less resemble the Fuma device in a manner sufficient to establish copying. *See, e.g., Iron Grip* Barbell Co., 392 F.3d 1317 at 1325 ("Not every competing product that arguably fails within the scope of a patent is evidence of copying. Otherwise every infringement suit would automatically confirm the nonobviousness of the patent. Rather, copying requires the replication of a specific product.") (emphasis added); see also Pentec, Inc. v. Graphic Controls Corp., 776 F.2d 309, 317 ("Pentec's effort to develop

NJOY Exhibit 2008.1080
Juul v. NJOY
IPR2024-00161

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their own solution was not shown to have been extensive, its product is not identical to the claimed invention, and it vigorously denied infringement.").

NJOY and Dr. Vallee will also be unable to prove at the Hearing that RJR incorporated any features of the Fuma device into its own products in an attempt to replicate the Fuma device, or otherwise out of a belief that those particular features were genuinely nonobvious and novel. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2056-2078; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 234-240. As Mr. Leinsing will explain, considering RJR was familiar with numerous prior art devices, including the Smoke Fifty-One Duo, which disclosed the features of the Fuma device, Dr. Vallee's evidence that RJR altered its product designs, as well as its disinterest in working further with Fuma to design a new e-cigarette device, just as likely indicates an understanding that Fuma's patents and device were well known and/or obvious variations of existing designs. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2072; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 239. Notably, NJOY and Dr. Vallee will be unable to provide any evidence at the Hearing that RJR intended its e-cigarette designs (which do not practice the Asserted Claims and do not resemble the Fuma device) to replicate the Fuma device, or that RJR attempted to incorporate any features of the Fuma device in RJR products because RJR believed those features were nonobvious. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2072; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 239-240.

b. NJOY has not put forth sufficient evidence to prove JLI copied the Fuma device

As Mr. Leinsing will explain at the heating, NJOY and Dr. Vallee will provide even less evidence that JLI copied the Fuma device than they will for their assertion that RJR copied the Fuma device. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶¶ 2079-2081;

NJOY Exhibit 2008.1081
Juul v. NJOY
IPR2024-00161

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see also RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 241. Dr. Vallee's only basis for asserting that JLI copied the Fuma device will be Dr. Vallee's assertion that the accused products infringe the Asserted Claims. *Id.*, at ¶ 2079. Dr. Vallee will provide no evidence that JLI was aware of the Fuma device or the Asserted Patents when it designed the accused products, much less any evidence that JLI designed the accused products based on a belief that any particular features of the Fuma device were nonobvious and worth replicating. Mere allegations of infringement cannot support a finding of copying. *See Iron Grip Barbell Co.*, 392 F.3d 1317 at 1325; *see also Pentec, Inc. v. Graphic Controls Corp.,* 776 F.2d 309, 317. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2079-2081; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 241. NJOY and Dr. Vallee will provide no material evidence, therefore, that JLI copied the Fuma device.

c. NJOY has not put forth sufficient evidence to prove any other third-parties copied the Fuma device

As Mr. Leinsing will explain, NJOY and Dr. Vallee will also fail to provide any evidence that any other entities copied the Fuma device. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2082-2090; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 242-246. Dr. Vallee's reliance on notice of infringement letters is misplaced, not only because Dr. Vallee provides no evidence that any products other than the accused products actually infringe the Asserted Claims, but also because, as noted above, infringement alone does not show that any entity copied the Fuma device. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2082 (citing CX-2244 (Fuma CB/DR Distributors Claim Charts), CX-2245 (Fuma Logic Claim Charts)); RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 241-246*; see also Iron Grip Barbell Co.*, 392 F.3d 1317 at 1325; *Pentec, Inc. v. Graphic Controls Corp.*, 776 F.2d 309, 317. Furthermore, Dr. Vallee's reliance on teardown reports showing that multiple devices included

NJOY Exhibit 2008.1082
Juul v. NJOY
IPR2024-00161

horizontal heating elements cannot prove that any copying occurred, as none of the reports mention Fuma, much less establish that any of the devices were designed as a result of learning about, looking at, or having any familiarity with the Fuma device or the Asserted Patents. *See* CX-2281C (Engineering Evaluation of E-Cigarettes for RJR); CX-2280C (HNB3 Program IRP) ; CX-2282C (Appendix: Photographs of E-Cig Products) ; CX-2312C (Carmines Consulting Report – Modified E-Cigarettes) ; CX-2313C (Carmines Consulting Report – Rechargeable E-Cigarettes); CX-2314 (Carmines Consulting Report – Disposable E-Cigarettes) ; *see also* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶¶ 2084-2087; RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 244. Instead, such evidence merely further confirms the proposition that the industry generally was well aware of a horizontal coil orientation. As stated above, this coil orientation was well-known in the art and present in numerous devices before the Fuma device was even conceived. *See supra* §§ I.3; IV.G.1.i; IV.G.1.xiv.g, j-k, r, y, gg-hh, kk-ll; IV.G.2.i.g, k-m, u-w, y. Neither NJOY nor Dr. Vallee have provided any evidence that any of the devices in any of the reports Dr. Vallee relies on were designed based on the Fuma device as opposed to based on any of the numerous products already on the market before the Fuma device was conceived. Without such evidence, neither NJOY nor Dr. Vallee will be able to establish that any such company copied the Fuma product.

iii. NJOY has not established any long-felt need in the industry, or that the Fuma device satisfied a long-felt need

Dr. Vallee is expected to testify at the Hearing that RJR expressed a need for e-cigarette designs including features that Dr. Vallee himself admits were well-known in the industry as early as 2009. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2092. As one example, Dr. Vallee will argue that RJR had been generally looking for "an e-cigarette design that vaporized an e-liquid and did not use tobacco". But as Dr. Vallee concedes, e-cigarettes that

NJOY Exhibit 2008.1083
Juul v. NJOY
IPR2024-00161

[redacted]

vaporized nicotine solution already existed in 2009. RX-1014C (Vallee (Apr. 12, 2024)) at RX-1014C.293:2-6, 322:22-24. Dr. Vallee's own testimony, in addition to documents RJR generated and Mr. Leinsing's analysis of the prior art, undermine any argument that the Fuma device could have satisfied a long-felt need for an e-cigarette that vaporized an e-liquid, as such devices already existed before the Fuma device was designed. *See id.*; *see also* CX-2291C ([redacted]), at CX-2291C.00164002; *see also supra* § VI.3. As another example, Dr. Vallee is expected to testify that there was a long-felt need for a cartomizer design that combined a mechanism for holding solution with an atomizer; as Mr. Leinsing will explain, however, cartomizers were also well-known in the industry before the Fuma device was even conceived; nor has Dr. Vallee established that the Asserted Claims are directed only to a cartomizer design. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2061 (citing CX-2289C (Email from D. Potter to A. Borschke)); *see also* CX-2291C ([redacted]), at CX-2291C.00164002; *supra* §§ I.3, VI.3; RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 267-268. Dr. Vallee will also argue that there was a long-felt need for an e-cigarette device with a central passageway; but Dr. Vallee's own testimony, and Mr. Leinsing's analysis of the prior art, all demonstrate that central airflow passageways already existed before the Fuma device was conceived. RX-1014C (Vallee (Apr. 12, 2024)) at 323:12-15; *see also* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2062 (citing CX-2291C ([redacted]), at 164007); *supra* §§ IV.G.1.i; IV.G.1.xiv.g, j-k, r, y, gg-hh, kk-ll; IV.G.2.i.g, k-m, u-w, y; RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 224, 269.

Dr. Vallee is further expected to testify that there was a long-felt need for the coil configuration in the Fuma device, citing alleged problems Mr. Conley sought to solve, such as burning batting material. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶¶

NJOY Exhibit 2008.1084
Juul v. NJOY
IPR2024-00161

[redacted]

2094-2095. Dr. Vallee, however, will not provide any evidence that this was a need recognized by anyone in the industry other than Mr. Conley. *See id.*, at 2094-2095. As Mr. Leinsing will explain, for example, while Dr. Vallee will argue that RJR settled on using the Fuma device design because it decided that the Fuma device had a design that was better than that in other devices, Dr. Vallee will provide no evidence or analysis as to what RJR believed was better in the Fuma device, much less what long-felt need the Fuma device fulfilled for RJR. *See* CX-2291C ([redacted]), at CX-2291C.164009; *see also* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶¶ 2092; RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 249. For example, Dr. Vallee will provide no evidence that believed the Fuma device's horizontal coil orientation, or any other claimed feature, solved any particular problem that RJR had spent a long time attempting to solve, that other devices in the market at the time hadn't already solved any problems RJR was attempting to solve, or even that RJR shared the same belief as Mr. Conley that existing designs had problems that the Fuma device had finally solved. *See id.*

Finally, Dr. Vallee may rely on an out-of-context excerpt from a deposition transcript from a different litigation, where a Spencer Thompson, an engineer at Spark, testified that his company started making "sketches" of an e-cigarette design with a horizontal coil in 2010. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.)at ¶ 2094-95 (citing CX-2283C (Deposition Transcript of Spencer Thompson in *Fontem Ventures v. NJOY*)). However, as Mr. Leinsing will explain, the excerpted testimony does not mention Fuma or the Fuma device at all, or that Mr. Spencer was aware of Fuma or the Fuma device, much less demonstrate that Mr. Thompson believed that the Fuma device or the Asserted Patents, specifically, satisfied any long-felt need in the art. *See, e.g.,* JX-0553C (Deposition Transcript of Spencer Thompson in *Fontem Ventures v. NJOY*), at 76:8-77:25; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 252.

NJOY Exhibit 2008.1085
Juul v. NJOY
IPR2024-00161

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Accordingly, NJOY will be unable to establish that the Fuma device satisfied any long-felt need expressed by anyone in the industry outside of the named inventor Mr. Conley, which is required for a long-felt need. *See, e.g.*, *In re Gershon,* 372 F.2d 535, 539, 152 USPQ 602 ("Since the alleged problem in this case was first recognized by appellants, and others apparently have not yet become aware of its existence, it goes without saying that there could not possibly be … evidence of either a long felt need in the … art for a solution to a problem of dubious existence or failure of others skilled in the art who unsuccessfully attempted to solve a problem of which they were not aware.").

iv. NJOY has failed to establish that any alleged praise of the Fuma device is related to any specific limitation of the Asserted Claims

Dr. Vallee is expected to testify at the Hearing that Mr. Dennis Potter, RJR's VP of Strategic Innovations, described the Fuma device as being unique and providing the closest experience to a burn-type cigarette. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2100. However, as Mr. Leinsing will explain, the alleged praise by Mr. Potter that Dr. Vallee relies upon is, at best, generic praise for the Fuma device; Dr. Vallee provides no evidence or analysis that ties Mr. Potter's praise to any specific features or technology within the Fuma device, much less the claimed features. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2100; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 256.

Dr. Vallee is also expected to cite alleged praise of third-party devices, such as the BloogMaxxFusion, and an e-cigarette device designed by Spencer Thompson, which Dr. Vallee opines share the same horizontal coil orientation as the Fuma device and therefore indirectly serve as praise for the Fuma device itself. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶¶ 2100-2101. Aside from the lack of any evidence or analysis indicating that either device is actually similar in any material way to the Fuma device, and the lack of any analysis

NJOY Exhibit 2008.1086
Juul v. NJOY
IPR2024-00161

establishing any nexus between the third-party devices and the asserted claims to justify using praise of those devices to prove that the ***Fuma device*** had a nonobvious design, Mr. Leinsing will explain that this praise of third-party devices is, again, generic at best. RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶ 257. As with RJR's alleged praise, no praise of either third-party device is specifically tied to any particular features of the devices, much less a feature recited in the Asserted Claims. *See id.*

Accordingly, NJOY will be unable to establish that the Fuma device or the Asserted Claims have received any industry praise due to their allegedly inventive features.

v. NJOY has failed to put forth sufficient evidence to establish commercial success

Dr. Vallee is expected to allege at the Hearing that RJR, Blu, NJOY, and JLI "use the Fuma patented design" and "continue to have significant commercial success." *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2102. However, as Mr. Leinsing will explain, Dr. Vallee has not, and will be unable to, provide any evidence in support of this claim, including any evidence sufficient to establish that the aforementioned entities actually use the "Fuma patented design" as alleged or that any of the aforementioned entities have experienced commercial success specifically as a result of incorporating any allegedly nonobvious features of the claimed invention or the Fuma device into their products. *See id.*; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 260-265. As noted above, the Fuma device does not include any features that were not already well-known in the art, and no products from RJR, Blu, NJOY, nor JLI released after the Fuma device was allegedly conceived infringe or practice the Asserted Claims; there cannot, therefore, be any nexus between sales of any of these products and the Asserted Claims. *See supra* §§ I.1-3; IV.G.1.i; IV.G.1.xiv.g, j-k, r, y, gg-hh, kk-ll; IV.G.2.i.g, k-m, u-w, y; IV.G.3.i.

NJOY Exhibit 2008.1087
Juul v. NJOY
IPR2024-00161

[redacted]

Dr. Vallee is also expected to allege at the Hearing that Fuma experienced commercial success based on sales of the Fuma device, citing sales information for the Fuma device showing that Fuma's revenue increased over time. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2103. For example, Dr. Vallee opines that Fuma had significant commercial success when it was first released to market going from about [redacted]. *See id*. As Mr. Leinsing will explain, however, Dr. Vallee has not, and will be unable to, provide information that the alleged sales are wholly contributable to the Fuma device, or were achieved as a result of the Fuma device having the allegedly nonobvious features. RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 260-265. To the contrary, the evidence will show that Fuma's sales are not solely or primarily attributable to any particular feature of the Fuma device, but instead, as the named inventors acknowledge, are largely attributable to [redacted] *See* RX-1211C (Email from G. Conley to D. Potter), at 100816; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 262-263.

Even if Dr. Vallee could attribute any of the commercial success he alleges any of the aforementioned entities experienced to a feature of the Asserted Claims or Fuma device (which he cannot), mere sales information alone cannot support a showing of commercial success. *See Arlington Indus. v. Bridgeport Fittings, Inc.*, 581 Fed. Appx. 859, 867 (Fed. Cir. 2014)("Without any ability to assess the overall market, the Board did not err when it concluded that it was unable to gauge whether the SNAP2IT sales actually constituted commercial success or any meaningful share of the duplex connector market.") Thus, NJOY will be unable to establish that Fuma's sales of the Fuma device, divorced from any understanding of the e-cigarette market at the time, establishes commercial success. Indeed, when one considers the market, it becomes clear that NJOY has been woefully unsuccessful. As Dr. Seth will explain, NJOY has plateaued at a

NJOY Exhibit 2008.1088
Juul v. NJOY
IPR2024-00161

[redacted]

market share, whereas successful companies such as JLI comprise [redacted] or more of the entire e-cigarette market, [redacted] of the market in tobacco-flavored e-cigarettes, and in the past have been as high as [redacted] market share.

vi. NJOY has not establish what the accepted wisdom in the field is, much less how the Fuma device was designed contrary to that accepted wisdom

Dr. Vallee is expected to allege at the Hearing that the design of the Fuma device was contrary to accepted wisdom in the art. *See* CX-2157C (Opening Expert Report of Glenn Vallee, Ph.D.) at ¶ 2107. However, as Mr. Leinsing will explain, Dr. Vallee has not, and will be unable to, provide any evidence at the Hearing as to what the accepted wisdom in the field was at the time of the alleged invention, much less any evidence that anyone in the industry actively denounced, shied away from, or otherwise discouraged others from pursuing any aspect of the Fuma device. RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 266-269. To the contrary, as Mr. Leinsing will explain, the Fuma device, and each of the features included therein, was comprised of well-known designs and features existing before the Fuma device was even conceived. *See supra* §§ I.3; IV.G.1.i; IV.G.1.xiv.g, j-k, r, y, gg-hh, kk-ll; IV.G.2.i.g, k-m, u-w, y; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 267, 269. For example, as Dr. Vallee admits, there were 2-piece and 3-piece e-cigarettes, e-cigarettes with horizontal heating elements, e-cigarettes with central and axial airflow passageways, e-cigarettes with heating elements in the airflow passageway, and e-cigarettes with other features found in the Fuma device. *See supra*; *see also* RX-1031 (Rebuttal Expert Report of Karl Leinsing) at ¶¶ 268-269. A mere conclusory statement that the Asserted Claims were not obvious is insufficient to show that the alleged invention was in fact ***contrary*** to accepted wisdom in the field. The design described in the claims of the asserted patents is exactly the conventional wisdom, as Mr. Leinsing will explain. Therefore, NJOY will be

NJOY Exhibit 2008.1089
Juul v. NJOY
IPR2024-00161

[redacted]

unable to establish at the Hearing that any aspect of the Fuma device or Asserted Patents is designed contrary to accepted wisdom in the field.

V. DOMESTIC INDUSTRY – ECONOMIC PRONG

A. NJOY Fails To Show That a Domestic Industry Exists or Is in the Process of Being Established Based on NJOY's Own Activities and Expenses

As a foundational defect, NJOY baselessly sweeps in activities and investments during the time periods that the Commission has repeatedly found irrelevant for evaluating domestic industry, for both its claims of an existing domestic industry and of a domestic industry in the process of being established based on NJOY's own activities and expenses.

First, NJOY attempts to claim expenses going back to as early as 2018, all while it has only acquired the Asserted Patents from Fuma on August 11, 2023, and was not otherwise licensed to the Asserted Patents prior to this acquisition. RX-1212C.27-28 (Patent Purchase Agreement between NJOY, LLC and Fuma International LLC). Prior to August 11, 2023, NJOY was nothing more than a potential infringer of the Asserted Patents and its expenses should not be credited towards any domestic industry. *See Certain Power Semiconductors, and Mobile Devices and Computer Containing Same* ("*Power Semiconductors*"), Inv. No. 337-TA-1308, Final ID at 116-117 (May 18, 2023) (collecting cases excluding pre-license expenditures); *Certain Fluidized Supporting Apparatus and Components Thereof* ("*Fluidized Supporting Apparatus*"), Inv. No. 337-TA-182/188, Comm'n Op. at 14 (Oct. 5, 1984) (finding that absent a license, a company "is nothing more than an infringer, which cannot be part of the industry").

Second, barring any "significant and unusual development after the complaint has been filed," NJOY may not rely on any post-Complaint expenses and activities for its domestic industry claims. *See, e.g.*, *Certain Video Game Systems and Controllers* ("*Video Game Systems*"), Inv. No. 337-TA-743, Comm'n Op. at 5 (Jan. 20, 2012) ("[A]s a general matter, the only activities that are

NJOY Exhibit 2008.1090
Juul v. NJOY
IPR2024-00161

[redacted]

relevant to the determination of whether a domestic industry exists or is in the process of being established are those that occurred before the complaint was filed."); *Certain Collapsible Sockets for Mobile Elec. Devices and Components Thereof* ("*Collapsible Sockets*"), Inv. No. 337-TA-1056, Comm'n Op. at 14-15 (July 9, 2018) (refusing to credit any post-complaint expenditures where complainant failed to "identify any specific facts, much less a significant and unusual development, to warrant considering expenditures after the filing of the complaint"). Neither NJOY nor its economic expert Dr. Thomas D. Vander Veen has asserted—let alone provided any evidence on—post-Complaint "specific facts, much less a significant and unusual development, to warrant considering expenditures after the filing of the complaint." *Id.*; *see also* RX-0940C (Thomas Rpt.) at ¶ 56.

NJOY's expert Dr. Vander Veen affirmatively resisted providing an aggregate total of what NJOY actually alleges to be its domestic industry investments in ACE and/or [redacted] in this Investigation: [redacted] RX-1021C (Vander Veen Tr.) at 33:19-34:10; *see also, e.g.*, CX-2327C (Vander Veen Rpt.) at ¶ 81 (listing NJOY's purported domestic industry investments from 2018 to 2023 on an annual basis and investments allegedly specific to the periods of [redacted]. Dr. Vander Veen's deliberate evasion from even alleging an aggregate total of NJOY's domestic industry investments in this Investigation is a transparent effort to avoid answering the foundational question: what is the relevant time period during which NJOY's expenses may be considered for a domestic industry? There is only one correct answer, *i.e.*, [redacted], during which even the expenses NJOY claims are related to ACE and/or [redacted] are overstated and insufficient to be significant or substantial.

NJOY Exhibit 2008.1091
Juul v. NJOY
IPR2024-00161

[redacted]

In fact, Dr. Vander Veen was unable to conclusively opine whether NJOY's alleged investments during the only relevant time period of [redacted] are quantitatively and qualitatively significant. RX-1021C (Vander Veen Tr.) at 37:6-22, 41:15-43:9; *see also id.* at 40:2-18 (acknowledging that [redacted] As JLI's economic expert, Mr. Vincent A. Thomas, will opine, NJOY's alleged domestic industry investments in the relevant time period of August 11-21, 2023—albeit already overstated with expenses not cognizable for domestic industry—are but a small portion of NJOY's total alleged domestic industry investments from 2018 to 2023. *See* RX-0940C (Thomas Rpt.) at ¶¶ 51-55.

In addition to this foundational defect as to the relevant time period, NJOY's alleged domestic industry investments also suffer from multiple other fatal defects. As the evidence will show and as JLI's expert Mr. Thomas will testify, NJOY's alleged domestic industry investments are both overstated and flawed, due to the improper inclusion of numerous ineligible and/or unsubstantiated expenses as well as Dr. Vander Veen's use of flawed allocation methodologies applied to NJOY's expenses. *See* RX-0940C (Thomas Rpt.) at ¶¶ 39-146. With its wide array of fatal defects, NJOY fails to present any meaningful basis to evaluate the alleged domestic industry investments and their significance and/or substantiality. *See, e.g.*, *Certain Oil-Vaping Cartridges, Components Thereof, and Products Containing the Same* ("*Oil-Vaping Cartridges*"), Inv. No. 337-TA-1286, Final ID at 101-102 (Feb. 1, 2023) (finding no domestic industry where the claimed expenses are overstated and complainant failed to "provide a path for [the ALJ] to adjust the [claimed] investments to reflect properly cognizable investments in plant and equipment and labor," without which the ALJ was "unable to analyze their qualitative and quantitative significance" as required for domestic industry).

NJOY Exhibit 2008.1092
Juul v. NJOY
IPR2024-00161

[redacted]

1. NJOY Fails To Distinguish Between Its Alleged Domestic Industry Investments Between ACE and [redacted] and Break Down Such Investments

While NJOY relies on both ACE and [redacted] for an NJOY-based domestic industry, neither its contentions nor Dr. Vander Veen's report distinguishes between the alleged domestic industry investments between ACE and [redacted] nor provides any methodology to perform such a product-specific breakdown. *See generally* RX-1387C.13-44 (Complainant's Sixteenth Supplemental Objections and Responses to Respondent's First Set of Interrogatories) (NJOY's contentions on domestic industry economic prong); CX-2327C (Vander Veen Rpt.) at ¶¶ 33-81; *see also* RX-0940C (Thomas Rpt.) at ¶¶ 44-50. Nor is NJOY able to, as the evidence will show. *See, e.g.*, RX-1012C (Vander Veen Tr.) at 108:17-109:7, 121:24-122:49, 124:3-8, 127:16-128:12 [redacted] 129:10-130:1 (testifying that he does not know [redacted] 130:10-19 [redacted] 130:20-133:3 (testifying that he does not know which investments during [redacted]), 137:25-138:1 [redacted] 140:6-12, 158:15-19 (testifying that he did not [redacted]); RX-1130C (Silverman Tr.) at 37:10-17, 44:17-23, 55:10-13, 89:13-23, 171:16-172:11 (testifying that the granular information needed to distinguish expenses between [redacted]); RX-1122C (Winch Tr.) at 50:6-21, 51:21-52:4, 101:9-102:19; *see also* RX-0940C (Thomas Rpt.) at ¶¶ 46-47.

NJOY Exhibit 2008.1093
Juul v. NJOY
IPR2024-00161

[redacted]

NJOY's failure to and inability to distinguish between and identify its alleged domestic industry investments specific to either the ACE and [redacted] render its claim of an NJOY-based domestic industry flawed and unreliable. RX-0940C (Thomas Rpt.) at ¶¶ 44-50; RX-1022C (Thomas Tr.) at 18:12-19:12, 20:10-21:2 (opining that distinguishing between ACE and [redacted] is relevant to provide the insight as to what specific activities are being performed in relation to the products). For instance, to the extent the Commission finds that there is ***not*** a significant likelihood that a domestic industry will be established in the future as to [redacted], NJOY's admitted conflation of its alleged investments in ACE and [redacted] will be fatal to its claim of a domestic industry as to ACE only. As another example, NJOY has not provided any evidence—and should be precluded from doing so out of time—that [redacted] qualifies as an "article" within the statutory meaning that can form the basis of a domestic industry at the time of the Complaint, *e.g.*, as a functional prototype, when [redacted] is undisputedly a product that is not commercially available or in mass production. Indeed, NJOY admits that it does not anticipate [redacted] RX-1132C (Leistra Tr.) at 156:14-157:11. *See, e.g.*, RX-1123C (Unangst Tr.) at 39:5-17, 40:4, 43:4-14, 62:15-21; RX-1122C (Winch Tr.) at 43:5-16, 72:25-73:12, 85:25-86:4, 108:4-10; *see also, e.g.*, *Certain Wearable Electronic Devices with ECG Functionality and Components Thereof*, Inv. No. 337-TA-1266, Final ID at 59 (June 27, 2022) (holding that the devices used to support a domestic industry in the process of being established "need to work").

In any event, NJOY's failure to quantify its alleged expenses separately for ACE and [redacted] defeats any meaningful consideration of such expenses and thus fails to establish a domestic industry. *See, e.g.*, *Certain Electronic Stud Finders, Metal Detectors and Electrical Scanners*, Inv. No. 337-TA-1221, Comm'n Op. at 50-51 (Mar. 14, 2022) (finding no domestic industry, holding

NJOY Exhibit 2008.1094
Juul v. NJOY
IPR2024-00161

[redacted]

that "aggregating investments in" protected and unprotected articles "may preclude meaningful consideration of those investments under the statutory framework required by section 337," and collecting Commission precedents holding the same). NJOY's purported allocation of its general expenses to ACE and [redacted], without distinction, fails to provide any insight into what activities NJOY performs in relation to these products and appears to be flawed and unreliable itself. *See* Section V.A.3 *infra*; RX-1022C (Thomas Tr.) at 18:12-19:12, 20:10-21:2, 22:13-17 [redacted]

2. NJOY Alleges Numerous Expenditures That Are Not Creditable Towards Domestic Industry, and NJOY Fails to Provide Evidence to Substantiate Their Eligibility

Despite its already flawed, unsupported, and inflated allocation, as discussed in Section V.A.3 *infra*, NJOY attempts to bolster its claimed investments by sweeping in millions of expenses that are not qualifying investments for the domestic industry economic prong requirement. *Certain Stringed Musical Instruments and Components Thereof* ("*Stringed Musical Instruments*"), Inv. No. 337-TA-586, Comm'n Op. at 16 (May 16, 2008) (not crediting marketing and sales); *Certain Bone Cements, Components Thereof and Products Containing the Same*, Inv. No. 337-TA-1153, Comm'n Op. at 22 (Jan. 25, 2021) ("[T]he Commission has often considered some types of activities, such as administrative overhead, inspections, and warehousing costs associated with importation of the domestic industry products as well as sales and marketing of the product, to be indistinguishable from those of a mere importer and has not typically credited them when determining whether a domestic industry exists."); *Certain Kinesiotherapy Devices and Components Thereof*, Inv. No. 337-TA-823, Comm'n Op. at 29-30 & n.8 (July 12, 2013) ("[E]xpenses primarily relate[d] to sales and marketing … are not the sort of expenditures that the

NJOY Exhibit 2008.1095
Juul v. NJOY
IPR2024-00161

[redacted]

Commission has considered sufficiently related to the claims of the patent"); *see also* RX-0940C (Thomas Rpt.) at ¶¶ 57-115, 123-125.

i. NJOY Fails To Provide Adequate Evidence To Support the Inclusion of Various Expenses Across Several Expense Categories

The evidence will show that NJOY's alleged domestic industry investments, as set forth in Dr. Vander Veen's report, include numerous expenses that relate to activities that are not eligible to substantiate a claimed domestic industry. Accordingly, NJOY's claimed investments are grossly overstated and unreliable. As JLI's expert Mr. Thomas will opine, by claiming numerous ineligible expenses, NJOY overstated its domestic industry investments by at least [redacted], even just within the ineligible expense categories listed below. *See* RX-0940C (Thomas Rpt.) at ¶¶ 57-86; RX-1022C (Thomas Tr.) at 67:19-68:11 [redacted].

[redacted]

NJOY Exhibit 2008.1096
Juul v. NJOY
IPR2024-00161

[redacted]

a. Regulatory

While certain regulatory activities may be deemed cognizable for establishing the domestic industry, there are various types of regulatory expenses that the Commission has found do not qualify. As one example, the Commission "has never credited bare fees paid to the FDA that any importer would be required to pay in order to sell its products in the United States." *See, e.g.*, *Certain In Vitro Fertilization Prods., Components Thereof, and Products Containing the Same* ("*In Vitro*"), Inv. No. 337-TA-1196, Comm'n Op. at 20 (Oct. 28, 2021) ("The Commission … has never credited bare fees paid to the FDA that any importer would be required to pay in order to sell its products in the United States"); RX-1022C (Thomas Tr.) at 28:12-16, 29:3-6 (noting that "[t]here was various instances where it was unclear what certain line items were" to allow one to confirm that Dr. Vander Veen has excluded such expenses from the claimed investments). As another example, the Commission has declined to include regulatory investments where the record is unclear as to the exact nature of the FDA activities. *Bone Cements*, Inv. No. 337-TA-1153, Comm'n Op. at 33-34.

NJOY fails to provide sufficient granularity to rule out such ineligible expenses, and the evidence will show that at least certain claimed regulatory expenses cannot be properly considered as domestic industry investments. RX-0940C (Thomas Rpt.) at ¶¶ 59-64; RX-1022C (Thomas Tr.) at 33:12-34:12, 40:20-41:7. For instance, NJOY claims [redacted] *see also* CX-2327C (Vander Veen Rpt.) at ¶ 62; RX-1022C (Thomas Tr.) at 44:6-15, 46:6-11. NJOY fails to demonstrate how regulatory expenses [redacted]

NJOY Exhibit 2008.1097
Juul v. NJOY
IPR2024-00161

[redacted]

Similarly, as to the [redacted] expenses claimed, NJOY includes expenses related to [redacted] *See* CX-2327C (Vander Veen Rpt.) at ¶ 49 (listing [redacted]); *but see* RX-0940C (Thomas Rpt.) at ¶¶ 62-63 (noting that each of these listed facilities appear to be irrelevant based on public information and citing RX-0967 [redacted]

b. Quality

The Federal Circuit has expressly held that not all quality-related expenses qualify for a domestic industry, identifying specifically "random sampling and testing that a normal importer would perform upon receipt." *Schaper Mfg. Co. v. Int'l Trade Comm'n*, 717 F.2d 1368, 1372-73 (Fed. Cir. 1983). NJOY fails to demonstrate that its claimed "Quality" investments do not cover such activities that a mere importer would perform. *See* RX-0940C (Thomas Rpt.) at ¶ 67; RX-1022C (Thomas Tr.) at 51:8-18 (noting that "any importer would have to do [some sort of quality control or testing]" and that such activities and resulting expenses may not be "cognizable or includable""), 53:4-15. In fact, the evidence seems to suggest that a considerable proportion of the "Quality" expenses indeed relate to logistics and fulfillment activities that a mere importer would perform and thus may not qualify. RX-0940C (Thomas Rpt.) at ¶ 68; *see* JX-0588C (NJOY_ITC Legal Request_Jan1_x270018-Dec31_x270023_2024.03.05 PM.xlsm) (showing that the claimed investments include expenses associated with [redacted]

NJOY Exhibit 2008.1098
Juul v. NJOY
IPR2024-00161

[redacted]

[redacted]); *see also* RX-1123C (Unangst Tr.) at 32:17-34:2, 36:18-20 (testifying that [redacted]

[redacted]"); RX-1022C (Thomas Tr.) at 54:11-55:23 ("[I]f they are simply expenditures to receive and distribute the products as a mere importer would do, then my understanding is that those may not be included or should not be included as part of a domestic industry analysis."). In fact, the evidence will show that at least a considerable portion of NJOY's quality assurance duties is conducted by foreign consultants and not by any domestic labor. *See, e.g.*, RX-1130C (Silverman Tr.) at 27:24-28:5 (confirming that [redacted]

c. Supply Chain / Fulfillment / Storage

In addition to labor expenses related to its Supply Chain department, NJOY also claims "Fulfillment costs" and "Storage Costs" as part of its alleged investments, which relate to order fulfillment services and storage fees at third-party logistics warehouses. CX-2327C (Vander Veen Rpt.) at ¶ 62. However, the Commission has deemed warehousing costs related to the importation of domestic industry products indistinguishable from those of a mere importer and has typically credited them when determining whether a domestic industry exists. *See, e.g.*, *Bone Cements*, Inv. No. 337-TA-1153, Comm'n Op. at 22; *Oil-Vaping Cartridges*, Inv. No. 337-TA-1286, Final ID at 97 (refusing to credit expenses by Smoore's U.S. distribution partners where the domestic industry products "are developed and manufactured entirely in China" and, further, "are saleable in the United States in the condition in which they are imported").

NJOY Exhibit 2008.1099
Juul v. NJOY
IPR2024-00161