

Exhibit 2

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**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
ALEXANDRIA DIVISION**

PHILIP MORRIS PRODUCTS S.A.,

Plaintiff,

v.

R.J. REYNOLDS VAPOR COMPANY,

Defendant.

Case No. 1:20-cv-00393-LMB-TCB



DECLARATION OF DR. JEFFREY C. SUHLING

I, Jeffrey C. Suhling, declare as follows:

1. I am a resident of Opelika, Alabama. I am currently employed as the Quina Distinguished Professor and Department Chair at the Department of Mechanical Engineering at Auburn University in Auburn, Alabama. I testified at trial as Defendant R.J. Reynolds Vapor Company’s (“RJR”) technical expert concerning Plaintiff Philip Morris Products S.A.’s (“PMP”) patent, United States Patent No. 9,814,265 (“ ’265 Patent”).

2. I offer this declaration to respond to statements contained in PMP’s recent brief and exhibits submitted in support of PMP’s motion for a permanent injunction, related to the issue of whether the patented features set forth in claims 1 and 4 of the ’265 Patent drive demand for the VUSE Alto product. I have reviewed the sections of PMP’s brief and Mr. Meyer’s declaration related to that issue, as well as the cited exhibits.

3. PMP argues that “the ’265 patent claims include a novel compact heater that efficiently vaporizes e-liquid while allowing the device to retain the conventional smoking experience of a CC (combustible cigarette).” (PMP Brief at 11). PMP claims the patented heater

drives consumer demand because the VUSE Alto’s “innovative ceramic wick and alloy heating element . . . combine to create high vapor production.” (PMP Brief at 11). PMP notes that a survey ranked the Alto as a top e-cigarette for “vapor consistency,” arguing that is another benefit of using the patented heater. (*Id.*) PMP also cites marketing materials and articles about the VUSE Alto’s use of the FEELM heater technology from Smoore. (PMP Brief at 11).

4. PMP’s submission thus identifies three consumer benefits allegedly linked to the ’265 Patent claims: 1) efficient vaporization, 2) high vapor production, and 3) vapor consistency. I also recall that PMP’s technical expert Mr. Walbrink testified at trial that the invention of the ’265 Patent results in efficient vaporization of the e-liquid. (Trial Tr. at 293:14-20).

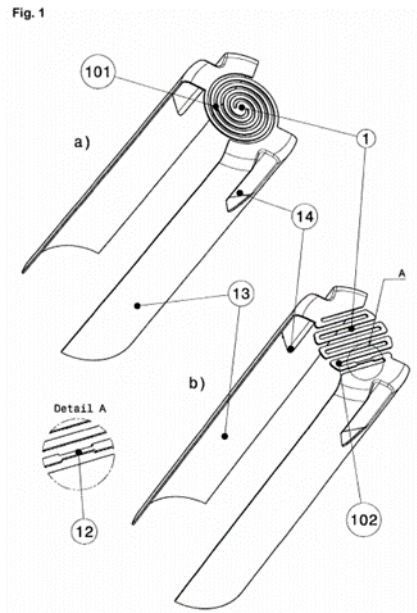
5. PMP does not link these benefits to the language of claims 1 and 4 of the ’265 Patent, however. PMP also does not explain how the use of the invention claimed in claims 1 and 4 leads to efficient vaporization, high vapor production, or vapor consistency.

6. The ’265 Patent does not discuss “high vapor production” explicitly. The ’265 Patent specification does address efficient vaporization and vaporization uniformity (I understand “vaporization uniformity” to be the same as “vapor consistency”). The ’265 Patent teaches:

The above-described structural design of the vaporizer device achieves not only a very high vaporizing efficiency but also the highest possible degree of vaporization uniformity due to fact that the invention provides the largest possible contact area between the thermal resistor foil and the vaporizer membrane or vaporizer membranes. ’265 Patent at Col. 5, ll. 59-64.

7. The ’265 Patent thus teaches that, to obtain “vaporizing efficiency” and “vaporization uniformity,” an e-cigarette should use a resistor that provides the “largest possible contact area” between the resistor and the vaporizer membrane.

8. The '265 Patent discloses two embodiments of a resistor, one in the shape of a “dual coil” and the other in the shape of a “sinuous line.” These embodiments are pictured below in Figure 1 from the '265 Patent:



9. The “dual coil” embodiment would provide for a large contact area between the resistor and a vaporizer membrane. It is clear from a visual inspection of the figures that the sinuous line embodiment depicted in Figure 1 provides for slightly less contact area than the dual coil embodiment. A resistor could take the shape of an alternative sinuous line design while providing even less contact area than the sinuous line example depicted in Figure 1.

10. PMP’s asserted patent claims 1 and 4 do not require a resistor having a large contact area with the vaporizer membrane. In fact, while the claims require the resistor to be “disposed in contact” with the vaporizer membrane, the claims do not say anything about whether the contact area between the resistor and the vaporizer membrane must be large, or small, or anything in between.

11. Instead, the claims require a resistor in the shape of a “dual coil” (which could provide a large contact area) *or* in the shape of a “sinuous line” (which would not necessarily

provide for a large contact area). Claims 1 and 4, the claims the jury found infringed, are set forth in full below with the relevant text underlined:

Claim 1: “A vaporizer device for vaporizing a substance containing at least one active and/or aroma material, comprising:

a mouthpiece, having at least one fluid inlet and at least one fluid outlet; and

a heating device, configured to be connected to the mouthpiece, comprising:

a thermal resistor comprising a metallic foil or a thin sheet in a shape of a dual coil and/or sinuous line, having two ends and dimensions substantially the same as a cross-section of a cigarette or a cigar,

wherein interspaces of the shape are configured to allow a flow of fluid therethrough;

at least one contact tab including a first contact tab and a second contact tab being connected to respective opposed ends of the dual coil and/or sinuous line of the thermal resistor, the first contact tab and the second contact tab not being in direct contact with each other; and

at least one vaporizer membrane disposed in contact with the thermal resistor and being permeable to the flow of fluid, and which is wetted or can be wetted with the substance containing the at least one active and/or aroma material,

wherein the thermal resistor and the at least one vaporizer membrane are arranged orthogonally or at an angle to a direction of the flow of fluid in the mouthpiece.” ’ 265 Patent at 9:23-50.

Claim 4: “The vaporizer device according to claim 1, wherein the thermal resistor and the at least one contact tab are formed of different materials.” ’265 Patent at 9:56-58.

12. The VUSE Alto has a resistor in the shape of a “sinuous line.” The VUSE Alto’s resistor does not, however, provide for a large contact area with a vaporizer membrane. Depicted immediately below is a picture of the VUSE Alto’s resistor. I have colored the VUSE Alto resistor in red—the material to the left and right of the resistor is the metal contact tabs and is not part of the resistor. And just below that is a picture from Mr. Walbrink’s slides at trial, showing the VUSE

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