

**PUBLIC VERSION**

**UNITED STATES INTERNATIONAL TRADE COMMISSION  
WASHINGTON, DC**

**Before the Honorable Clark S. Cheney  
Administrative Law Judge**

**In the Matter of  
CERTAIN TOBACCO HEATING  
ARTICLES AND COMPONENTS  
THEREOF**

**Investigation No. 337-TA-1199**

**COMMISSION INVESTIGATIVE STAFF'S  
PRE-HEARING BRIEF**

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January 4, 2021

██████████. Cochand Tr. at 33:4-34:5. Accordingly, the evidence is expected to show that the physical samples that Mr. Fox inspected were not representative of any device that may have been available in 2006, or at best, that the devices that Mr. Fox inspected were defective. Clemens Rpt., ¶ 253. Therefore, there is no way to know whether the structure and/or operation of these samples is accurate.

For at least these reasons, and as further described below, Respondents are not expected to show, by clear and convincing evidence, that either RPX-0004 or RPX-0005 constitutes prior art under 35 U.S.C. § 102.

In the event RPX-0004 and RPX-0005 are determined to be prior art, given that Respondents allege that RPX-0004 and RPX-0005 “are the same make and model as the Ruyan e-Cigars that Reynolds reverse engineered prior to filing the ’123 patent application,” the Staff submits that the evidence will show that they do not anticipate or render obvious any of claims 1-7, 9, 11-19, 21, 23-26 of the ’123 patent for all the reasons set forth in Section VI.D.1.b.i. above.

### **iii. Hon ’043<sup>7</sup>**

Respondents assert that Chinese Patent No. 2719043Y, RX-0088, RX-0103<sup>8</sup> (“Hon ’043”) anticipates and/or renders obvious all of the DI Claims along or together with secondary references. RPrHB at 131-1433 Hon ’043 was issued to Hon Lik, the inventor of the Ruyan e-Cigar discussed above. RPrHB at 131.

The Staff expects, however, that the evidence will show that Hon ’043 does not anticipate or render obvious any of claims 1-7, 9, 11-19, 21, 23-26 of the ’123 patent.

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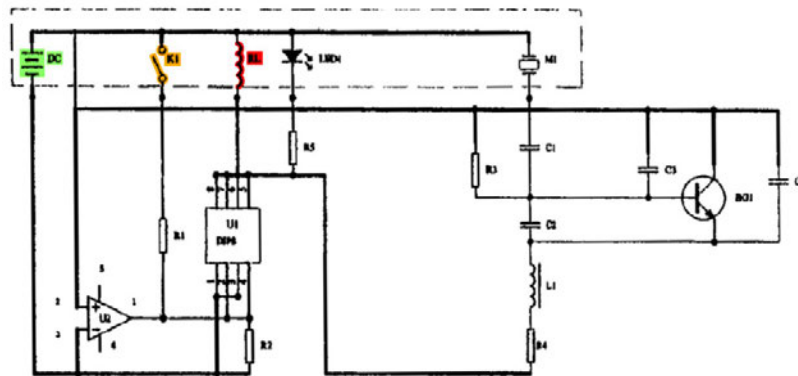
<sup>7</sup> Complainants do not assert any independent bases for the validity of dependent claims 2-5, 7, 9, 12, 13, 16-18, 21 and 26 and do not dispute that the additional limitations of these dependent claims are disclosed by Hon ’043. See CPrHB at 310-322; JX-0011C, ¶¶ 101, 102.

<sup>8</sup> RX-0088 is a certified translation of Hon ’043 used by Complainants in *R.J. Reynolds Vapor Co. v. Fontem Holdings I B.V.*, IPR2016-01268. RX-0103 is a certified translation of Hon ’043 produced by Respondents.

**a. Claims 1 and 15**

Complainants do not dispute that several of the limitations of claims 1 and 15 are disclosed in Hon '043. *See* JX-0011C, ¶¶ 99-101. Complainants dispute, however, that Hon '043 discloses two limitations in each of claim 1 and 15. Those limitations are: (1) “a puff-actuated controller . . . adapted for regulating current flow through the electrical resistance heater during draw;” and (2) “the mixture comprising the tobacco extract and the aerosol-forming material can be wicked into contact with the electrical resistance heater.” *See* CPrHB at 310-322. The Staff expects that Respondents will be unable to establish by clear and convincing evidence that that Hon '043 anticipates or renders obvious claims 1 and 15 of the '123 patent.

The evidence will show that Hon '043 discloses the claimed “a puff-actuated controller . . . adapted for regulating current flow through the electrical resistance heater during draw.” Mr. Fox will testify that, in Hon '043, when the reed (pressure) switch K1 closes, Hon '043's field effect transistor (“FET”) U1 turns on, and the battery energizes the heater “RL.” *See* Fox Op. Rpt., ¶ 567; RX-0088, RX-0103 at Figure 12 (color added).



Mr. Fox will further testify that when field effect transistor U1 is turned on as described above, current flows through heating element RL. *Id.* Current flow continues until the user stops drawing on the device, when K1 opens and turns off FET U1. RX-0088, RX-0103 at 6

("[W]hen K1 is closed, U1, i.e. the field effect transistor, is turned on; RL starts"). Thus, the evidence will show that Hon '043 discloses the claimed "puff- actuated controller."

In addition to starting/stopping current flow when the user's puff (or draw) starts and stops, the evidence will show that Hon '043's circuit also regulates current in that it stops current flow if voltage drops below a certain level, including during a puff/draw. Specifically, if battery voltage is too low, circuit element U2 will turn off FET U1 (even if K1 is shut), and thus stop current flow through the heaters. *See* RX-0088, RX-0103 at 6 (describing the "the low voltage detection element for over-discharge protection of the lithium ion battery").

As they did with the Reynolds Ruyan e-Cigar, Respondents argue that the '123 Patent shows that "regulating current flow through the electrical resistance heater during draw" means something more than just turning on the heater. *See* Clemens Rpt., ¶ 264. For the same reasons discussed in Section VI.D.1.b.i.a., this argument is incorrect and should be rejected.

To the extent that the "puff-actuated controller" limitation is found not to be disclosed in Hon '043 the evidence is expected to show that it would have been obvious in view of Brooks for the same reasons discussed in Section VI.D.1.b.i.a. Further, Mr. Fox will testify that a POSITA would have been motivated to improve the electronic control circuitry in Hon '043 with a more sophisticated system like the one disclosed by Brooks. Fox Op. Rpt., ¶¶ 551-562. Mr. Fox is further expected to explain that the system taught by Brooks would allow the use of a high-powered heater that can rapidly heat up to the optimum temperature (providing the optimum rate of aerosol generation sooner), and then maintain that optimum temperature by reducing the current (or more precisely, average current) for the remainder of the puff. *Id.*; *see also* RX-0001 at 5:1-38 (also noting that maximum aerosol generation may be achieved in 0.5 seconds or less).

Consequently, the evidence will show that the “a puff-actuated controller . . . adapted for regulating current flow through the electrical resistance heater during draw” limitation of claims 1 and 15 is disclosed or rendered obvious by Hon ’043.

The evidence, however, is not expected to show that Hon’043 anticipates or renders obvious the “the mixture comprising the tobacco extract and the aerosol-forming material can be wicked into contact with the electrical resistance heater” limitation of claims 1 and 15.

As with the Reynolds Ruyan e-Cigar, Respondents are unable to show that liquid mixture is “wicked into contact with the electrical resistance heater.” Respondents’ argument that the liquid mixture in Hon ’043 contacts “heating element 26” and is volatilized into an aerosol is not supported by the disclosure of Hon ’043. RPrHB at 136. On the contrary, Hon ’043 discloses that:

The solution in the porous body 27 is driven by the high-speed airflow of the ejection hole and ejected in the form of droplets into the atomization cavity 10; it is atomized ultrasonically by the first piezoelectric element 23 and is further atomized under the effect of the heating element 26; atomized droplets of large diameters are attached to the wall under the vortex effect and are re-absorbed by the porous body 27 via the overflow hole 29; droplets of small diameters suspend in the airflow and form an aerosol, which is sucked out via the aerosol passage 12, gas vent 17, and the mouthpiece 15.

RX-0088, RX-0103 at 7. This passage does not disclose that there is any contact between the droplets and the heating element 26, and instead only states that droplets are atomized “under the effect of the heating element 26.” *Id.* Moreover, this disclosure indicates that “atomized droplets of large diameters are attached to the wall under the vortex effect and are re-absorbed by the porous body 27 via the overflow hole 29,” and that “droplets of small diameters *suspend in the airflow and form an aerosol.*” *Id.* This disclosure therefore indicates that the vapor is formed without any contact between the liquid droplets and the heating elements. As a result, there is no

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