Bae, Lee & Kim
Intellectual Property Law Firm

Re: Korean Patent Application No. (PCT) 10-2016-700XXXX
Applicant:
Your Ref.:
Our Ref.:

Dear Sir or Madam:

This correspondence is a follow-up to our letter of August 8, 2016. These are our comments on and English translation of the Office Action (OA).

Bae, Lee & Kim's Comments on the Office Action

In the OA, the examiner preliminarily rejected the present application because all claims lack an inventive step over JPH 07-50XXXX (published on July 6, 1995; hereinafter "D1").

For your reference, we have attached US 5,372,XXX corresponding to D1.

Ⅰ. Pending claims

The pending claims correspond to the originally filed claims set that was attached to your February 15, 2016 e-mail. Please refer to the attached pending claims.

Ⅱ. Regarding: *inventive step*

1. Summary of D1

D1 relates to a method and apparatus for controlling the delivery of energy to a heater array in a smoking article so that a predetermined amount of energy is delivered to individual heating elements in the heater array on demand (see column 1, line 65 – column 2, line 2 in D1).

2. Comparison of the present application with D1

If an independent claim is regarded as having an inventive step, then its dependent claims are also regarded as having an inventive step. Thus, in the following analysis we will mainly focus on the inventive step of the independent claims.

The examiner indicated that the representative independent claim, claim 1 could easily be conceived by a person skilled in the art from D1. On comparing claim 1 of the present application with D1, the examiner indicated that they correspond as shown in the table below.

Claim 1 of the present application	D1
A controller (200) of an electronic vaporizer (100), characterized in that the controller (200) is configured to:	An apparatus for controlling delivery of energy from a power supply to a heating load in a smoking article (see claim 1 of D1)
store (302) a table comprising resistance values and a power value for each resistance value;	-
measure (306) the resistance of a heating element (106) of a heating unit (104) of the electronic vaporizer (100);	energy measurement means (106, 116) for measuring resistance of a heating load (101) and determining a power value for the measured resistance (see claim 1 of D1)
determine (308) a power value for the measured resistance on the basis of the stored table; and	
control (310) a power source (206) to feed the heating element (106) of the heating unit (104) with the determined power.	control means for controlling a power source to supply the determined energy (see claim 1 of D1)

Subject claim 1 differs from D1 in that the former comprises the feature of storing a table which comprises a power value for each resistance value.

However, the examiner indicated that D1 also discloses the energy measurement means (see Fig. 1), and the feature of making a table, which comprises a power value for a resistance value based on the energy measurement means, then storing the table to the control means, is a well-known, simple design modification which can be modified by a person skilled in the art, as needed.

However, we do **not** agree with the examiner's indication.

It seems that D1 does not disclose the features of "**measure (306) the resistance** of a heating element (106) of a heating unit (104) of the electronic vaporizer (100), **determine (308) a power value for the measured resistance** on the basis of the stored table; and **control (310) a power source (206)** to feed the heating element (106) of the heating unit (104) **with the determined power**" in claim 1 of the present application.

In this regard, the examiner indicated that the features of "**measure (306) the resistance** of a heating element (106) of a heating unit (104) of the electronic vaporizer (100), **determine (308) a power value for the measured resistance** on the basis of the stored table" in claim 1 of the present application correspond to the feature of "energy measurement means (106, 116) for **measuring resistance of a heating load (101)** and **determining a power value for the measured resistance"** in D1.

In addition, the examiner indicated that the feature of "**control (310) a power source (206)** to feed the heating element (106) of the heating unit (104) **with the determined power**" in claim 1 of the

present application corresponds to the feature of "control means for **controlling a power source to supply the determined energy**" in D1.

However, we found that D1 does not disclose the features indicated by the examiner.

Specifically, D1 discloses the feature of "energy measurement means **for measuring an amount of energy delivered to the heating load," not the resistance of the heating load** (see claim 1 of D1).

In addition, D1 discloses the feature of "**control means for disabling a switching means to disconnect the heating load from the power supply when a predetermined amount of energy as measured by said energy measurement means has been delivered to the heating load**" (see claim 1 of D1). **That is, D1 discloses the feature of controlling the heating load, not the power supply.**

In other words, D1 discloses an apparatus configured to **measure an amount of energy delivered to the heating load, and control the heating load.**

Contrary to D1, claim 1 of the present application discloses a controller configured to **measure (306) the resistance of a heating element (106) and control (310) a power source (206).**

Regarding the above features of the present application, the detailed description of the present application discloses the following:

(********** omitted **********)

As disclosed above, **the heating unit which includes the heating element can be changed** to change the resistance **so that the user enjoys a better usage experience of the electronic vaporizer**. For your information, if the resistance is reduced, the vapor from the liquid material is increased.

In addition, since the power source is controlled based on the resistance which is changed by the user, **the present invention prevents the burning of the heating element.**

In other words, the present invention provides the advantageous effects of **1)** providing the better usage experience of the electronic vaporizer and **2)** preventing the burning of the heating element.

However, above advantageous effect **1)** of the present invention could not be derived from D1, since D1 merely disclose the feature of **measuring an amount of energy delivered to the heating load, and not disclose the feature of measuring the resistance of a heating element which is changed by the user.**

Furthermore, D1 discloses that *"In smoking articles which use an array of heating elements, control circuitry should be provided for selecting which of the heating elements in the array will be energized for a particular puff. If the smoker is required to manually select the particular element to be heated,*

the enjoyment associated with using a smoking article may be diminished" (see column 1, lines 30-37 in D1).

In other words, in D1, there is no motivation to derive the feature of "measure (306) the resistance of a heating element (106) of a heating unit (104) of the electronic vaporizer (100), wherein the heating unit can be changed" in the present invention.

Thus, we think that claim 1 of the present application cannot be easily derived from D1.

3. Our suggestions

As stated above, D1 does not disclose the features of claim 1 of the present application.

Meanwhile, if we add the feature that "the heating unit can be changed" to the independent claims, we can further differentiate the present invention from D1.

To elaborate the above differences between the present invention and D1, we suggest adding the feature "the heating unit can be changed" to the independent claims.

For the detailed amendments, please see our Proposed Claims attached herewith.

After reviewing the reason(s) in the notice in view of our comments, please provide us with your instructions on responding to this Office Action at the very latest three working days before the due date: XXXX, in order for us to have sufficient time to prepare a Response to the Office Action. If we do not receive your instructions by the above due date, we will obtain an initial one-month extension, assuming that you want to proceed with responding to this Office Action. If you have any contrary instructions on this matter, please let us know.

Thank you for your kind and continued cooperation.

Yours sincerely,

Hyoung-sang Bae (Mr.)
Partner