Analysis Regarding Invalidity of Patent No. 8,205,622

The following is an analysis of each of the independent claims of Patent No. 8,205,622 (the "'622 Patent"). For purposes of this analysis, we will be considering invalidity of the independent claims under 35 U.S.C. §103.

Obviousness Standard

A claim is unpatentable if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. 35 U.S.C. §103(a). In *KSR v. Teleflex*, (2007) 127 S. Ct. 1727 ("KSR"), the Supreme Court held there are no rigid rules for determining obviousness, and expressly rejected the Federal Circuit's previous rigid application of the teaching-suggestion-motivation test for obviousness. The Supreme Court found the Federal Circuit had erred in four ways: (1) "by holding that courts and patent examiners should look only to the problem the patentee was trying to solve" (*KSR* at 1742); (2) by assuming "that a person of ordinary skill attempting to solve a problem will be led only to those elements of prior art designed to solve the same problem" (Id.); (3) by concluding "that a patent claim cannot be proved obvious merely by showing that the combination of elements was 'obvious to try'" (Id.); and (4) by overemphasizing "the risk of courts and patent examiners falling prey to hindsight bias" and as a result applying "[r]igid preventative rules that deny factfinders recourse to common sense" (Id).

Thus, in making a determination of obviousness, the Supreme Court instructed that: (1) common sense should be used to decide whether references can be combined to render a claim obvious, even if there is no explicit teaching-suggestion-motivation to combine them; (2) a patent claim is obvious if the combination of known elements was "obvious to try"; and (3) a claim is likely obvious if the improvement or substitution of element(s) yields no more than predictable results. *KSR* at 1742.

Detailed Analysis of Claims

Claim 1

Independent claim 1 as issued reads:

> "An electronic cigarette comprising a tubular electronic inhaler and a tubular electronic atomizer that is detachably attached to the electronic inhaler, wherein the electronic inhaler includes an electric power source that provides an electric current to the electronic atomizer, and wherein the tubular electronic atomizer includes a container and media within the container, the media is soaked with a solution to be atomized, and between the container and the media there is a side-space for airflow tubular electronic, and wherein the tubular electronic inhaler includes an electric airflow sensor configured to turn on and off the electric power source by way of detecting an airflow, and the airflow sensor is a diaphragm microphone."

Claim 1 is unpatentable over Hon (AU2007250368) (hereinafter "Hon"), in view of Wang (WO2008138650) (hereinafter "Wang").

Hon teaches an electronic cigarette comprising a tubular electronic inhaler and a tubular electronic atomizer that is detachably attached to the electronic inhaler, wherein the electronic inhaler includes an electric power source that provides an electric current to the electronic atomizer, and wherein the tubular electronic atomizer includes a container and media within the container, the media is soaked with a solution to be atomized, and between the container and the media there is a side-space for airflow tubular electronic, and wherein the tubular electronic inhaler includes an electric airflow sensor configured to turn on and off the electric power source by way of detecting an airflow (see page 3, line 6 through page 4, line 5).

However, Hon does not specifically state that the airflow sensor is a diaphragm microphone. Wang teaches an airflow sensor that is a diaphragm microphone (see FIG. 1D and paragraphs [0026]-[0027]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the device of Hon with the airflow sensor as a diaphragm microphone of Wang, thereby rendering claim 1 obvious and not patentable.

It will be appreciated that several alternative references can be used as substitutes for the reference to Hon. For example, and without limitation, the following references teach the same elements of claim 1 as Hon:

1. Han (CN201079011Y): See paragraphs [0011]-[0013], [0022], [0075], [0076], and [0081]
2. Shanghong (CN2000997909Y): See page 2
3. Long (CN201146824Y): See Abstract and pages 3-4
4. Hon (US20070267031): See paragraphs [0008], [0026] and [0028]

It will be appreciated that several alternative references can be used as substitutes for the reference to Wang. For example, and without limitation, the following references teach the same element of a diaphragm microphone of claim 1 as Wang:

1. Dehong (CN201199922Y): See paragraph [0038]
2. Guojun (CN201064185Y): See page 3 and microphone 8 (FIG. 1)
3. Kobal et al (US20070006889 A1): See paragraphs [0050] and [0059] and claim 57.

Accordingly, several combinations between each of the references discussed above can be made in order to render claim 1 obvious.

Claim 12

Independent claim 12 as issued reads:

> "An electronic cigarette comprising a tubular electronic inhaler and a tubular electronic atomizer, wherein the electronic inhaler includes an electric power source that provides an electric current to the electronic atomizer, the electronic cigarette further comprising an integrated circuit board that has a Single Chip Micyoco that controls atomization of a liquid solution."

Claim 12 is unpatentable over Hon, in view of Wang, and in further view of Ying et al (CN2092877U) (hereinafter "Ying").

Hon teaches an electronic cigarette comprising a tubular electronic inhaler and a tubular electronic atomizer, wherein the electronic inhaler includes an electric power source that provides an electric current to the electronic atomizer (see page 3, line 6 through page 4, line 5).

However, Hon does not appear to teach the electronic cigarette further comprising an integrated circuit board that has a Single Chip Micyoco that controls atomization of a liquid solution. Wang teaches an integrated circuit board that controls atomization of a liquid (see paragraphs [0021]-[0022]). Ying teaches a Single Chip Micyoco (see page 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the device of Hon with the circuit board of Wang and the Single Chip Micyoco of Ying, thereby rendering claim 12 obvious and not patentable.

It will be appreciated that several alternative references can be used as substitutes for the reference to Hon. For example, and without limitation, the following references teach the same elements of claim 12 as Hon:

1. Han (CN201079011Y): See paragraphs [0011]-[0013], [0022], [0075], [0076], and [0081]
2. Shanghong (CN2000997909Y): See page 2
3. Long (CN201146824Y): See Abstract and pages 3-4
4. Hon (US20070267031): See paragraphs [0008], [0026] and [0028]

It will be appreciated that several alternative references can be used as substitutes for the reference to Wang. For example, and without limitation, the following references teach the same element of an integrated circuit board that controls atomization of a liquid of claim 12 as Wang:

1. Dehong (CN201199922Y): See paragraph [0036] with Kobal et al (US20070006889 A1): See paragraphs [0050] and [0059] and claim 57
2. Guojun (CN201064185Y): See page 3 with Kobal et al (US20070006889 A1): See paragraphs [0050] and [0059] and claim 57

It will be appreciated that several alternative references can be used as substitutes for the reference to Ying. For example, and without limitation, the following references teach the same element of a Single Chip Micyoco of claim 12 as Ying:

1. Wang (US7451012): See claims 1-2.

2. CN2826409Y: See Abstract and pages 2-3

Accordingly, several combinations between each of the references discussed above can be made in order to render claim 12 obvious.

Claim 13

Independent claim 13 as issued reads:

> "An electronic cigarette comprising a tubular electronic inhaler and a tubular electronic atomizer, wherein the electronic inhaler includes an electric power source that provides an electric current to the electronic atomizer, the electronic cigarette further comprising an electric airflow sensor that is used to turn on and off the electric power source by way of detecting an airflow and sending a signal to a Single Chip Micyoco, wherein the Single Chip Micyoco receives the signal from the electric airflow sensor, instructs the electric power source to send an electric current to the electronic atomizer, and a time period and a magnitude of the electric current."

Claim 13 is unpatentable over Hon, in view of Wang, and in further view of Ying.

Hon teaches an electronic cigarette comprising a tubular electronic inhaler and a tubular electronic atomizer, wherein the electronic inhaler includes an electric power source that provides an electric current to the electronic atomizer (see page 3, line 6 through page 4, line 5).

However, Hon does not appear to teach an electric airflow sensor that is used to turn on and off the electric power source by way of detecting an airflow and sending a signal to a Single Chip Micyoco, wherein the Single Chip Micyoco receives the signal from the electric airflow sensor, instructs the electric power source to send an electric current to the electronic atomizer, and a time period and a magnitude of the electric current. Wang teaches an airflow sensor with control function (see FIG. 1D and paragraphs [0021]-[0022] and [0026]-[0027]). Ying teaches a Single Chip Micyoco (see page 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the device of Hon with the airflow sensor of Wang and the Single Chip Micyoco of Ying, thereby rendering claim 13 obvious and not patentable.

It will be appreciated that several alternative references can be used as substitutes for the reference to Hon. For example, and without limitation, the following references teach the same elements of claim 13 as Hon:

1. Han (CN201079011Y): See paragraphs [0011]-[0013], [0022], [0075], [0076], and [0081]
2. Shanghong (CN2000997909Y): See page 2
3. Long (CN201146824Y): See Abstract and pages 3-4
4. Hon (US20070267031): See paragraphs [0008], [0026] and [0028]

It will be appreciated that several alternative references can be used as substitutes for the reference to Wang. For example, and without limitation, the following references teach the same elements of claim 13 as Wang:

1. Dehong (CN201199922Y): See paragraphs [0036] and [0038] with Kobal et al (US20070006889 A1): See paragraphs [0050] and [0059] and claim 57
2. Guojun (CN201064185Y): See page 3 and microphone 8 (FIG. 1) with Kobal et al (US20070006889 A1): See paragraphs [0050] and [0059] and claim 57

It will be appreciated that several alternative references can be used as substitutes for the reference to Ying. For example, and without limitation, the following references teach the same element of a Single Chip Micyoco of claim 13 as Ying:

1. Wang (US7451012): See claims 1-2.
2. CN2826409Y: See Abstract and pages 2-3

Accordingly, several combinations between each of the references discussed above can be made in order to render claim 13 obvious.

Claim 14

Dependent claim 14 as issued reads:

> "The electronic cigarette of claim 13, wherein the electric airflow sensor is a diaphragm microphone."

The reference to Wang also discloses that the airflow sensor is a diaphragm microphone (see FIG. 1D and paragraphs [0026]-[0027]). Accordingly, claim 14 is rendered obvious.

Claim 15

Dependent claim 15 as issued reads:

> "The electronic cigarette of claim 13, further comprising an LED indicator inside the electronic inhaler, wherein the LED indicator is connected to the Single Chip Micyoco and the electric power source, and wherein the on time of the LED indicator is controlled by the Single Chip Micyoco."

The reference to Hon also discloses an LED connected to the Single Chip Micyoco and the electric power source and controlled by the Single Chip Micyoco(see page3, last paragraph – Page 3a). Accordingly, claim 15 is rendered obvious.

Claim 16

Independent claim 16 as issued reads:

> "An electronic cigarette comprising a tubular electronic inhaler and a tubular electronic atomizer, wherein the electronic inhaler includes an electric power source that provides an electric current to the electronic atomizer, wherein the electronic inhaler includes, sequentially from a first end of the electronic inhaler to the second end, a cigarette cap, an LED indicator, the electric power source, an electric airflow sensor, a circuit board for a Single Chip Micyoco, and a first electric connector."

Claim 16 is unpatentable over Hon, in view of Wang, and in further view of Ying.

Hon teaches an electronic cigarette comprising a tubular electronic inhaler and a tubular electronic atomizer, wherein the electronic inhaler includes an electric power source that provides an electric current to the electronic atomizer, wherein the electronic inhaler includes, sequentially from a first end of the electronic inhaler to the second end, a cigarette cap, an LED indicator, the electric power source (see page 3, line 6 through page 4, line 5).

However, Hon does not appear to teach an electric airflow sensor, a circuit board for a Single Chip Micyoco. Wang teaches an airflow sensor and a circuit board (see FIG. 1D and paragraphs [0021]-[0022] and [0026]-[0027]). Ying teaches a Single Chip Micyoco (see page 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the device of Hon with the airflow sensor and circuit board of Wang and the Single Chip Micyoco of Ying, thereby rendering claim 16 obvious and not patentable.

It will be appreciated that several alternative references can be used as substitutes for the reference to Hon. For example, and without limitation, the following references teach the same elements of claim 16 as Hon:

5. Han (CN201079011Y): See paragraphs [0011]-[0013], [0022], [0075], [0076], and [0081]
6. Shanghong (CN2000997909Y): See page 2
7. Long (CN201146824Y): See Abstract and pages 3-4
8. Hon (US20070267031): See paragraphs [0008], [0026] and [0028]

It will be appreciated that several alternative references can be used as substitutes for the reference to Wang. For example, and without limitation, the following references teach the same elements of claim 16 as Wang:

3. Dehong (CN201199922Y): See paragraphs [0036] and [0038] with Kobal et al (US20070006889 A1): See paragraphs [0050] and [0059] and claim 57
4. Guojun (CN201064185Y): See page 3 and microphone 8 (FIG. 1) with Kobal et al (US20070006889 A1): See paragraphs [0050] and [0059] and claim 57

It will be appreciated that several alternative references can be used as substitutes for the reference to Ying. For example, and without limitation, the following references teach the same element of a Single Chip Micyoco of claim 16 as Ying:

3. Wang (US7451012): See claims 1-2.
4. CN2826409Y: See Abstract and pages 2-3

Accordingly, several combinations between each of the references discussed above can be made in order to render claim 16 obvious.

Claim 17

Independent claim 17 as issued reads:

"An electronic cigarette comprising:

a tubular electronic inhaler; and

a tubular electronic atomizer that is detachably attached to the electronic inhaler,

wherein the electronic inhaler includes an electric power source that provides an electric current to the electronic atomizer,

wherein the tubular electronic atomizer includes a container and media within the container, the media is soaked with a solution to be atomized,

wherein the tubular electronic atomizer includes an exterior wall having an air-puffing hole formed therethrough, wherein the liquid container includes a container wall, there being a chamber disposed between the exterior wall and the container wall,

wherein the tubular electronic atomizer includes a tube extending from the air-puffing hole and into the chamber, and

wherein the tubular electronic inhaler includes an electric airflow sensor configured to turn on and off the electric power source by way of detecting an airflow, and the airflow sensor is a diaphragm microphone."

Claim 17 is unpatentable over Hon in view of Wang.

Hon teaches an electronic cigarette comprising: a tubular electronic inhaler; and a tubular electronic atomizer that is detachably attached to the electronic inhaler, wherein the electronic inhaler includes an electric power source that provides an electric current to the electronic atomizer, wherein the tubular electronic atomizer includes a container and media within the container, the media is soaked with a solution to be atomized, wherein the tubular electronic atomizer includes an exterior wall having an air-puffing hole formed therethrough, wherein the liquid container includes a container wall, there being a chamber disposed between the exterior wall and the container wall, wherein the tubular electronic atomizer includes a tube

extending from the air-puffing hole and into the chamber (see page 3, line 6 through page 4, line 5).

However, Hon does not specifically state an electric airflow sensor configured to turn on and off the electric power source by way of detecting an airflow, and the airflow sensor is a diaphragm microphone. Wang teaches an airflow sensor (see FIG. 1D and paragraphs [0026]-[0027].

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the device of Hon with the airflow sensor of Wang, thereby rendering claim 17 obvious and not patentable.

It will be appreciated that several alternative references can be used as substitutes for the reference to Hon. For example, and without limitation, the following references teach the same elements of claim 17 as Hon:

1. Han (CN201079011Y): See paragraphs [0011]-[0013], [0022], [0075], [0076], and [0081]
2. Shanghong (CN2000997909Y): See page 2
3. Long (CN201146824Y): See Abstract and pages 3-4
4. Hon (US20070267031): See paragraphs [0008], [0026] and [0028]

It will be appreciated that several alternative references can be used as substitutes for the reference to Wang. For example, and without limitation, the following references teach the same element of a airflow sensor of claim 17 as Wang:

1. Dehong (CN201199922Y): See paragraph [0038]
2. Guojun (CN201064185Y): See page 3 and microphone 8 (FIG. 1)
3. Kobal et al (US20070006889 A1): See paragraphs [0050] and [0059] and claim 57.

Accordingly, several combinations between each of the references discussed above can be made in order to render claim 17 obvious.

Conclusion

With regard to the independent claims, it is clear that there are several different combinations of prior art references that can be utilized to render the independent claims of the

‘622 Patent obvious and not patentable. The remainder of the claims depending from these independent claims will also be rendered unpatentable for at least being dependent on the unpatentable independent claim. However, it should be noted that we have multiple references that can be relied on in multiple combinations to render all claims of the ‘622 Patent unpatentable. Accordingly, based on the above analysis at least the above references may be utilized to challenge the validity of the claims of the ‘622 Patent, whether by motion in the litigation, through and Inter Partes Review or through an Ex Parte Reexamination.