the taste of regular tobacco, menthol, vanilla, coffee, cola and various fruits. E-liquids containing a wide range of nicotine concentrations, as well as nicotine-free liquids are available in the marketplace.

[0005] Known vaporizers typically contain a single straight air channel, with air flowing into the bottom of the vaporizer, mixing with vapor, and then exiting through the top of the vaporizer. This structural configuration contributes to E-liquid condensation in the device, and in some instances, causes overflowing E-liquid to overflow in the device and/or leak out of the device's bottom air intake. Accordingly, users of known commercial vaporizer devices have experienced problems with, inter alia, the leakage of E-liquid from the cartomizer in use and/or under storage conditions, especially after use. Such leakage is undesirable for at least the reasons of cost and/or inadvertent contamination of person or personal effects, ultimately adversely affecting a user's opinion of the overall experience associated with using the device. Certain embodiments described in the present disclosure are directed to the reducing, inhibiting, and/or eliminating such leakage from the user's experience, as well as other important ends, which will become apparent to the reader once armed with the disclosures provided herein.

BRIEF SUMMARY

[0005a] According to a first aspect of the present invention, there is provided a vaporizer including: a body, the body including a battery and a control panel, wherein the body has an upper end with a chamber; and cartridge sized and shaped to complement the chamber, the cartridge having a vaporizable product tank, a fluid intake at an upper end of cartridge, a heating unit at a lower end of the cartridge, and a fluid outlet at an upper end of the cartridge.

[0005b] According to a second aspect of the present invention, there is provided a cartridge for a vaporizer, including: a body having an upper end and a base; a replaceable heater within the base of the body; a fluid intake proximate the upper end of the body, the intake providing a fluid path into the body and to the replaceable heater; a mouthpiece at an upper end of the body, the mouthpiece providing a fluid passage from the replaceable heater; and a cavity configured to store a product for vaporizing.

[0005c] According to a third aspect of the present invention, there is provided a battery case for a vaporizer, including: a body; a battery disposed within the body; circuitry disposed within the body and configured to operate the vaporizer; at least one light source within the body; andat least one pattern of holes positioned over the at least one light source, wherein the holes have a diameter less than fifty micrometers.

[0006] Disclosed herein is a vaporizer having a body and a cartridge, typically referred to as a cartomizer. In use, the cartomizer portion of the vaporizer is proximate to the user and the body is distal to the user. The body houses a battery and a control panel. The body has a

proximate end defining a chamber for receiving a distal end of the cartridge. The cartridge's distal end is sized and shaped to complement the shape of the chamber defined by the body's proximate end. The cartridge is configured to house a vaporizable product and includes an air intake at a middle portion or proximate end of the cartridge, a heating unit proximate to the distal end of the cartridge, and a vapor outlet proximate to the distal end of the cartridge. In embodiments where the vaporizer is designed for use with E-liquids, a fluid connection exists between the heating unit and a cavity or container within the cartridge used to store the E-liquid prior to use.

[0007] Disclosed herein is a cartridge for a vaporizer. The cartridge includes a cartridge body having a base, an air intake, a mouthpiece, a cavity, a printed circuit board (PCB) and a replaceable heater. The air intake is proximate to a middle portion or proximate end of the cartridge body and provides a fluid passage into the cartridge body and further into the replaceable heater. The replaceable heater is disposed within the base of the cartridge body and is fluidly connected to the intake and the mouthpiece. The mouthpiece is located at the proximate end of the cartridge body and provides a fluid passage from the replaceable heater through the mouthpiece to the user or external environment. Thus, there is fluid connectivity from an external environment through the intake, into and out from the replaceable heater through the mouthpiece to an external environment and/or to the user. The cavity is configured to store a product for vaporizing and is fluidly connected to the replaceable heater.

[0008] Disclosed herein is a battery case for a vaporizer. The battery case includes a body, a battery disposed in the battery case body, at least one light source within the body, and circuitry disposed within the body, configured to operate the vaporizer and at the least one light source within the body. The body has at least one pattern of micro holes positioned over at least one of the at least one light source(s), with the micro holes independently having a diameter less than fifty micrometers.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 illustrates an embodiment of a cartridge for a vaporizer.

[0010] FIG. 2 a cross section of the cartridge of FIG. 1 taken at line AA.

[0011] FIG. 3 illustrates a partially exploded view of a cartridge showing a replaceable heater.

[0012] FIG. 4 illustrates a cross section of a vaporizer having a cartridge and battery unit.

[0013] FIG. 5 illustrates a vaporizer having a cartridge and battery unit.

[0014] FIG. 6 a base of a battery unit showing a ring LED.