information. Further, currently described systems may not provide social interaction with other users.

[5] For example with regard to dosing, previous attempts to determine the dosage of vapor and/or an active ingredient in the vapor have been unsatisfactory. Systems that pre-determine dosage by restricting the amount of material to be delivered in a session assume, often incorrectly, that all of the material will be inhaled, and may not be adjustable for partial dosages. Such systems may also meter the amount of material, and require accurate measurement of the mass and/or volume of material being delivered for vaporization, or measure the difference between a starting mass/volume and post-delivery mass or volume. These measurements may be difficult, requiring a high level of accuracy and expense, and may result in inaccurate results. Further, current dose controlling electronic smoking devices typically control the dose delivered without a link to or actual knowledge of the actual clinical and medical needs of the user, and may not allow a controlled dose to be adjusted based on the user biometrics such as weight, age, symptoms, etc. Existing systems may also lack features that allow a user to customize usage based on their habits and goals, as well as their social needs.

[6] The systems, apparatuses, and methods described herein address at least these problems and concerns.

SUMMARY

[6a] According to a first aspect of the present invention, there is provided a cartridge for use with a vaporizer body, the cartridge including: a heater configured to heat a vaporizable material; a cartridge memory including information about the cartridge, the cartridge memory configured to be readable by a controller of the vaporizer body for reading a baseline resistance of the cartridge therefrom, the baseline resistance corresponding to an electrical resistance of the heater at an ambient temperature, and the cartridge memory further configured to output at least a portion of the information stored thereon via fluctuations in the baseline resistance; and one or more cartridge contacts configured for engagement with one or more vaporizer body contacts of the vaporizer body when the cartridge is coupled to the vaporizer body.

[6b] According to a second aspect of the present invention, there is provided a vaporizer including: a vaporizer body including a power source, a controller, and one or more vaporizer body contacts in communication with the controller; and a cartridge including a cartridge memory, a heater configured to heat a vaporizable material, and one or more cartridge contacts configured for engagement with the one or more vaporizer body contacts on the vaporizer body when the cartridge is coupled to the vaporizer body, the cartridge memory storing information about the cartridge, the cartridge memory configured to be readable by

the controller of the vaporizer body for reading a baseline resistance of the cartridge therefrom, the baseline resistance corresponding to an electrical resistance of the heater at an ambient temperature, and the cartridge memory further configured to output at least a portion of the information stored therein via fluctuations in the baseline resistance; wherein the controller is configured to perform operations including: causing an application of power to the one or more vaporizer body contacts engaged with the one or more cartridge contacts to heat the heater; reading, via the one or more vaporizer body contacts engaged with the one or more cartridge contacts, at least a portion of the information from the cartridge memory; and controlling, based on at least the portion of the information read from the cartridge memory, one or more operating parameters of the vaporizer.

[6c] According to a third aspect of the present invention, there is provided a method including: coupling, to a vaporizer body to form a vaporizer, a cartridge including a heater configured to heat a vaporizable material, a cartridge memory, and one or more cartridge contacts, the cartridge memory including information about the cartridge, the cartridge memory configured to be readable by a first controller of the vaporizer body for reading a baseline resistance of the cartridge therefrom, the baseline resistance corresponding to an electrical resistance of the heater at an ambient temperature, and the cartridge memory further configured to output at least a portion of the information stored thereon via fluctuations in the baseline resistance, the vaporizer body including a power source, the first controller, and one or more vaporizer body contacts configured to engage the one or more cartridge contacts on the cartridge to form the coupling between the cartridge and the vaporizer body; applying power to at least one of the one or more vaporizer body contacts engaged with the one or more cartridge contacts to heat the heater; reading, via the one or more vaporizer body contacts engaged with the one or more cartridge contacts, at least a portion of the information from the cartridge memory to the first controller; and controlling, by the first controller, one or more operating parameters of the vaporizer based at least on the information read from the cartridge memory.

[7] Embodiments of the present invention relate to management of operation (e.g. one or more settings or operation parameters of a vaporizer. In some embodiments, a cartridge may be coupled to a vaporizer body. The cartridge may include a vaporizable material and a heater as well as an identifier, which may optionally be a cartridge memory. The vaporizer body may include a controller, which may exchange data (e.g. via one or two way communication) with the identifier. This exchange of data may optionally occur via a same circuit over which electrical power from a power source of the vaporizer body is delivered to the heater of the cartridge.

[8] In another embodiment, a vaporizer system can include a device in communication with a vaporizer. The device may execute software or other instructions that result in an application usable to obtain information from a vaporizer, optionally over a wireless

CLAIMS

1. A cartridge for use with a vaporizer body, the cartridge comprising:

a heater configured to heat a vaporizable material;

a cartridge memory comprising information about the cartridge, the cartridge memory configured to be readable by a controller of the vaporizer body for reading a baseline resistance of the cartridge therefrom, the baseline resistance corresponding to an electrical resistance of the heater at an ambient temperature, and the cartridge memory further configured to output at least a portion of the information stored thereon via fluctuations in the baseline resistance; and

one or more cartridge contacts configured for engagement with one or more vaporizer body contacts of the vaporizer body when the cartridge is coupled to the vaporizer body.

2. The cartridge as in claim 1, wherein the one or more cartridge contacts are further configured to, when engaged with the one or more vaporizer body contacts, form an electrical power circuit via which the controller in the vaporizer body regulates power flow from a power source in the vaporizer body to control a temperature at which the heater heats at least a portion of the vaporizable material.

3. The cartridge as in claim 1 or 2, wherein at least one of the one or more cartridge contacts is further configured to, when engaged with at least one of the one or more vaporizer body contacts, form a data exchange circuit via which the controller reads the baseline resistance from the cartridge memory.

4. The cartridge as in claim 3, further comprising a capacitive circuit configured to apply a charge to the cartridge memory when the vaporizer body is not applying energy to the one or more cartridge contacts.

5. The cartridge as in claim 3, wherein the cartridge memory comprises an electrically erasable programmable read-only memory (EEPROM).

6. The cartridge as in any one of the preceding claims, wherein the fluctuations in the baseline resistance is detectable by the controller on an electrical power circuit between a power source in the vaporizer body and the heater, and wherein the baseline resistance occurs at a fluctuation frequency.

7. The cartridge as in any one of the preceding claims, wherein the cartridge memory is coupled to an H-bridge circuit configured to rectify an input through the one or more cartridge contacts when the one or more cartridge contacts are engaged with the one or more vaporizer body contacts.

8. The cartridge as in any one of the preceding claims, wherein the information further comprises a cartridge-specific identification.

9. The cartridge as in any one of the preceding claims, wherein the information further comprises a parameter relating to one or more of an identification of the vaporizable material within the cartridge, a type of heater in the cartridge, a concentration and/or amount of vaporizable material in the cartridge, and a preferred temperature setting for use with the cartridge.

10. A vaporizer comprising:

a vaporizer body comprising a power source, a controller, and one or more vaporizer body contacts in communication with the controller; and

a cartridge comprising a cartridge memory, a heater configured to heat a vaporizable material, and one or more cartridge contacts configured for engagement with the one or more vaporizer body contacts on the vaporizer body when the cartridge is coupled to the vaporizer body, the cartridge memory storing information about the cartridge, the cartridge memory configured to be readable by the controller of the vaporizer body for reading a baseline resistance of the cartridge therefrom, the baseline resistance corresponding to an electrical resistance of the heater at an ambient temperature, and the cartridge memory further configured to output at least a portion of the information stored therein via fluctuations in the baseline resistance;

wherein the controller is configured to perform operations comprising:

causing an application of power to the one or more vaporizer body contacts engaged with the one or more cartridge contacts to heat the heater;

reading, via the one or more vaporizer body contacts engaged with the one or more cartridge contacts, at least a portion of the information from the cartridge memory; and

controlling, based on at least the portion of the information read from the cartridge memory, one or more operating parameters of the vaporizer.

11. The vaporizer as in claim 10, wherein the one or more cartridge contacts and the one or more vaporizer body contacts are configured to, when engaged, form an electrical power circuit via which the controller in the vaporizer body regulates power flow from the power source in the vaporizer body to control a temperature of the heater.

12. The vaporizer as in claim 10 or 11, wherein the one or more cartridge contacts and the one or more vaporizer body contacts are configured to, when engaged, form a data exchange circuit via which the controller reads at least the portion of the information from the cartridge memory.

13. A method comprising:

coupling, to a vaporizer body to form a vaporizer, a cartridge comprising a heater configured to heat a vaporizable material, a cartridge memory, and one or more cartridge contacts, the cartridge memory comprising information about the cartridge, the cartridge memory configured to be readable by a first controller of the vaporizer body for reading a baseline resistance of the cartridge therefrom, the baseline resistance corresponding to an electrical resistance of the heater at an ambient temperature, and the cartridge memory further configured to output at least a portion of the information stored thereon via fluctuations in the baseline resistance, the vaporizer body comprising a power source, the first controller, and one or more vaporizer body contacts configured to engage the one or more cartridge contacts on the cartridge to form the coupling between the cartridge and the vaporizer body;

applying power to at least one of the one or more vaporizer body contacts engaged with the one or more cartridge contacts to heat the heater;

reading, via the one or more vaporizer body contacts engaged with the one or more cartridge contacts, at least a portion of the information from the cartridge memory to the first controller; and

controlling, by the first controller, one or more operating parameters of the vaporizer based at least on the information read from the cartridge memory.

14. The method as in claim 13, wherein the engaging of the one or more cartridge contacts with the one or more vaporizer body contacts forms a data exchange circuit via which data is passed between the cartridge memory and the first controller.

15. The method as in claim 13 or 14, further comprising:

accessing, through operation of an application executing on one or more processors, an identifying information encoded in the cartridge memory;

presenting at least a portion of the identifying information via a user interface generated on a display by the one or more processors;

receiving a user input comprising an interaction with the user interface; and

controlling, by the first controller, the vaporizer to operate consistent with one or more parameters determined based at least on the user input.

16. The cartridge as in any one of claims 1 to 3, wherein the information-further comprises a number of uses of the cartridge.

17. The cartridge as in any one of claims 1 to 3 or 16, wherein the information further comprises a duration of use of the cartridge.

18. The cartridge as in any one of claims 1 to 3, 16 or 17, wherein the information further comprises at least one temperature setting applied during use of the cartridge.

19. The vaporizer as in any one of claims 10 to 12, wherein the information further comprises a number of uses of the cartridge.

20. The vaporizer as in any one of claims 10 to 12 or 19, wherein the information further comprises a duration of use of the cartridge.

21. The vaporizer as in any one of claims 10 to 12, 19 or 20, wherein the information further comprises at least one temperature setting applied during use of the cartridge.

22. The method as in any one of claims 13 to 15, wherein the information further comprises a number of uses of the cartridge.

23. The method as in any one of claims 13 to 15 or 22, wherein the information further comprises a duration of use of the cartridge.

24. The method as in any one of claims 13 to 15, 22 or 23, wherein the information further comprises at least one temperature setting applied during use of the cartridge.

25. The method as in any one of claims 13 to 15 and 22 to 24, further comprising:

writing, by the first controller, usage data to the cartridge memory, the cartridge being uncoupled from the vaporizer body subsequent to the writing of the usage data;

re-coupling the cartridge to the vaporizer body or a different vaporizer body;

reading the usage data from the cartridge memory to the first controller of the vaporizer body or a second controller of the different vaporizer body; and

determining, by the first controller or the second controller, an estimate of an amount of the vaporizable material remaining in the cartridge based at least on the usage data.