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(54) **VAPORIZATION DEVICE**

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(52) **U.S. Cl.**

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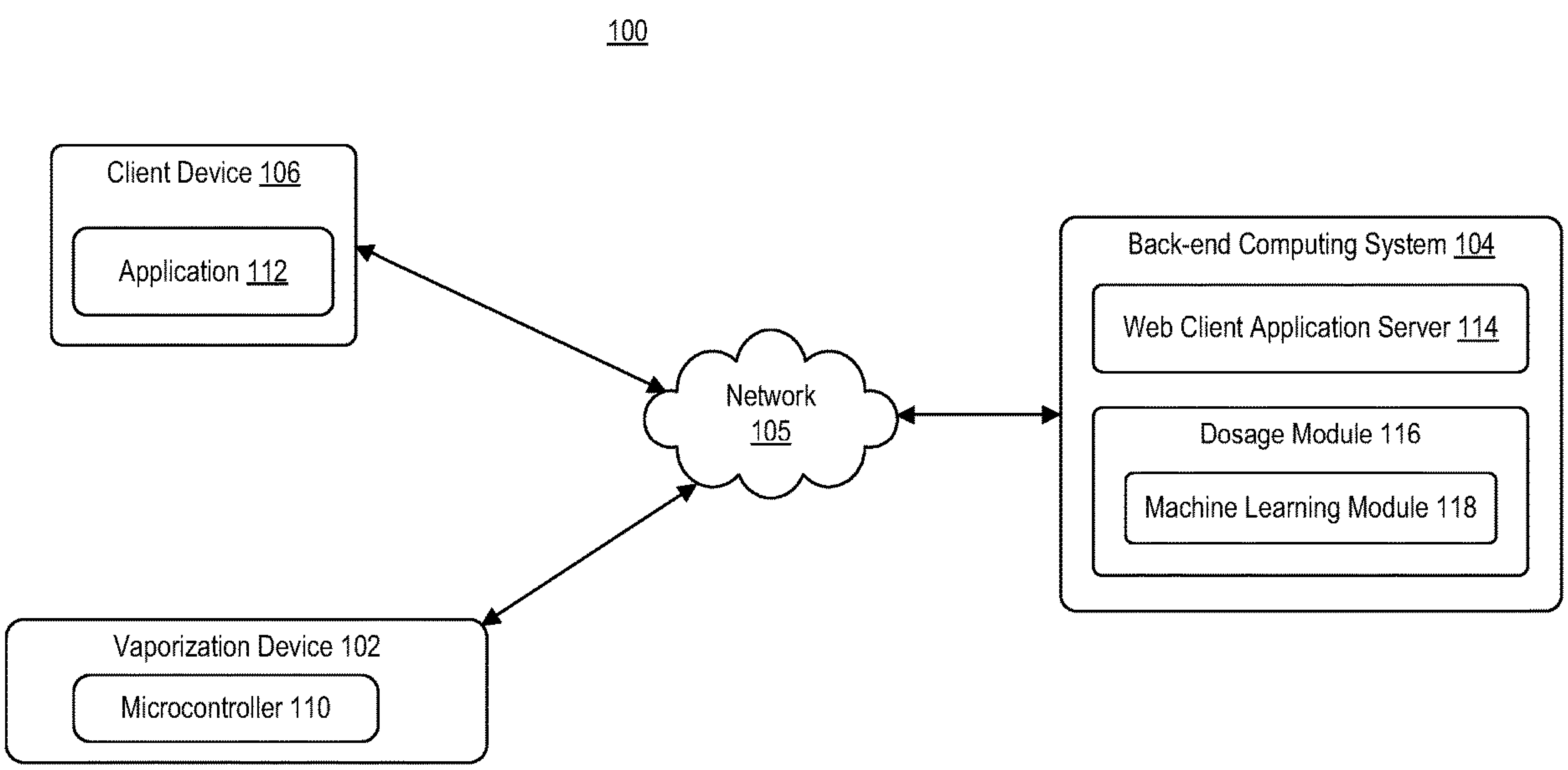
(57) **ABSTRACT**

A vaporization device includes a mouthpiece, an inner shell, a first pod, a second pod, a one-way valve, and a carbon monoxide sensor. The mouthpiece has first opening. The inner shell is disposed in the mouthpiece. The inner shell has a second opening in fluid communication with the first opening. The first pod is disposed in the inner shell. The first pod is configured to hold a nicotine-containing liquid. The second pod is disposed in the inner shell. The second pod is configured to hold a non-nicotine-containing liquid. The one-way valve is positioned over the second opening. The one-way valve is configurable between an open position and a closed position. The carbon monoxide sensor is disposed in the mouthpiece.



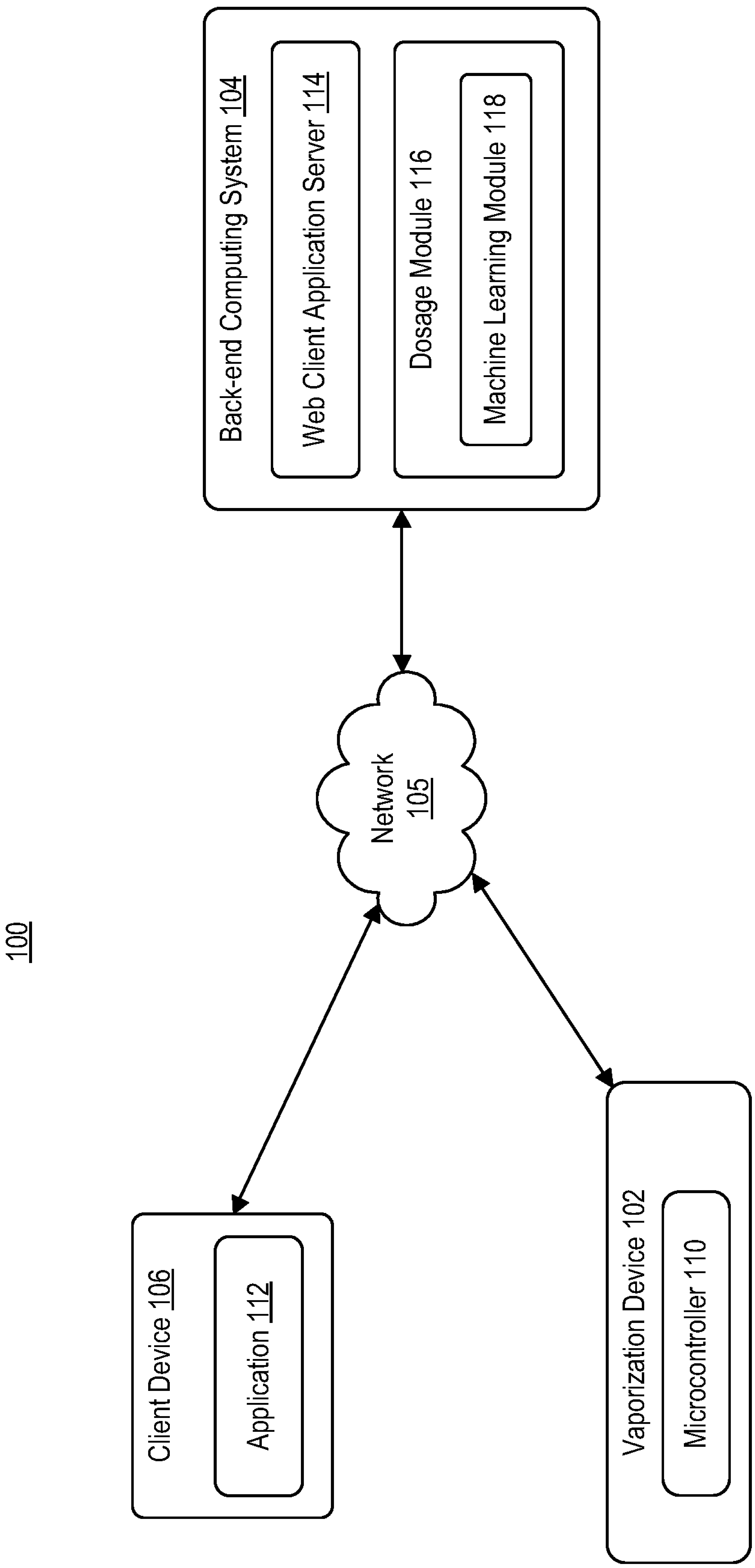

100
Back-end Computing System 104
Web Client Application Server 114
Dosage Module 116
Machine Learning Module 118
Network 105
Client Device 106
Application 112
Vaporization Device 102
Microcontroller 110

FIG. 1

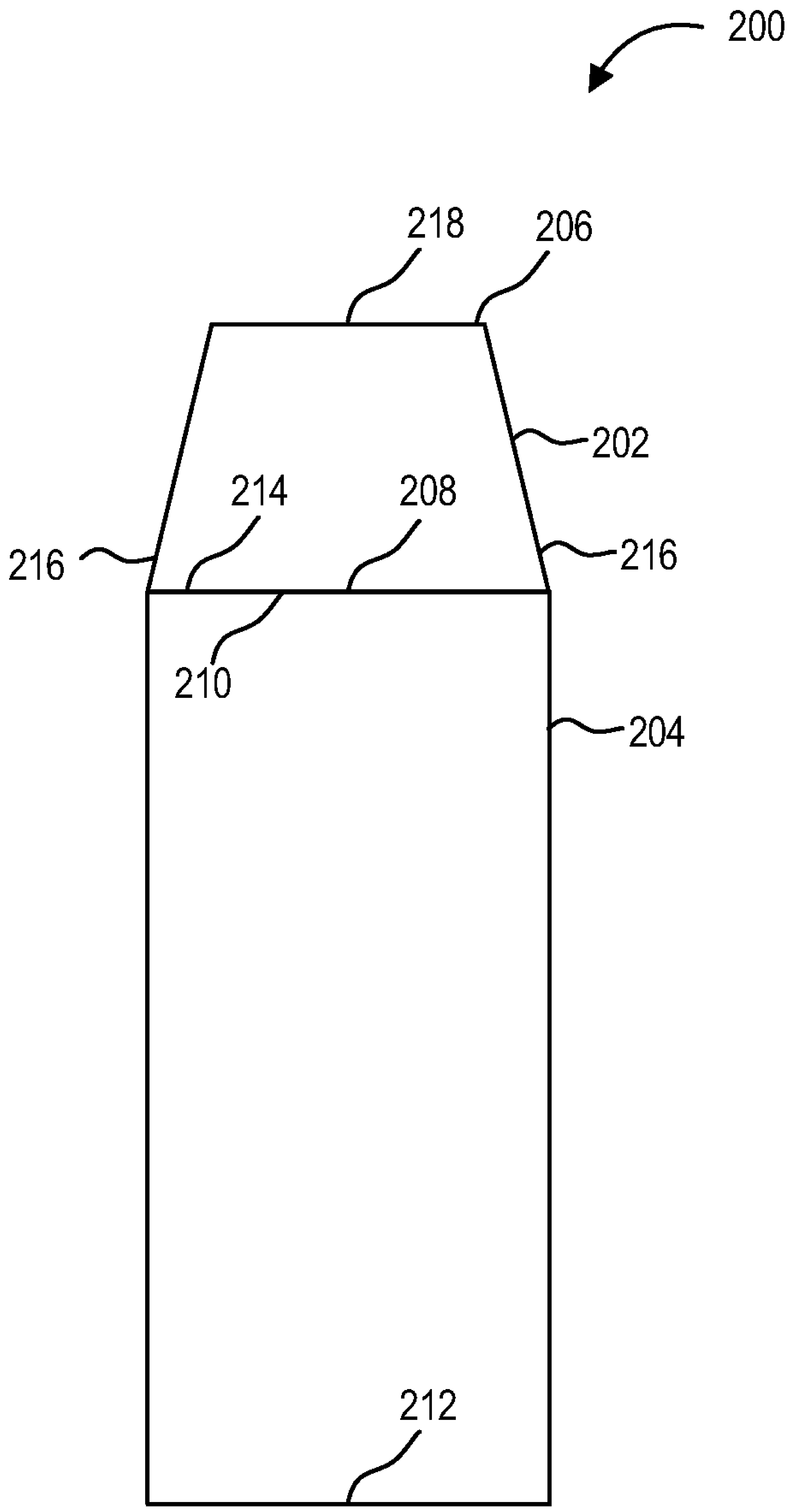


FIG. 2

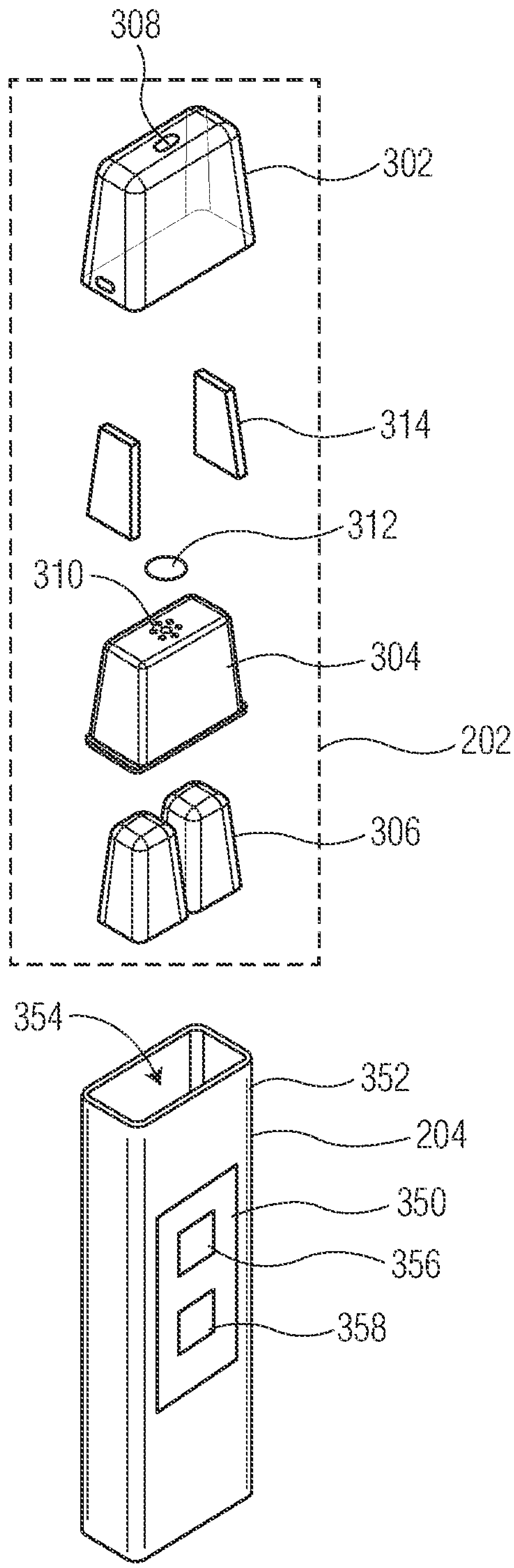


FIG. 3

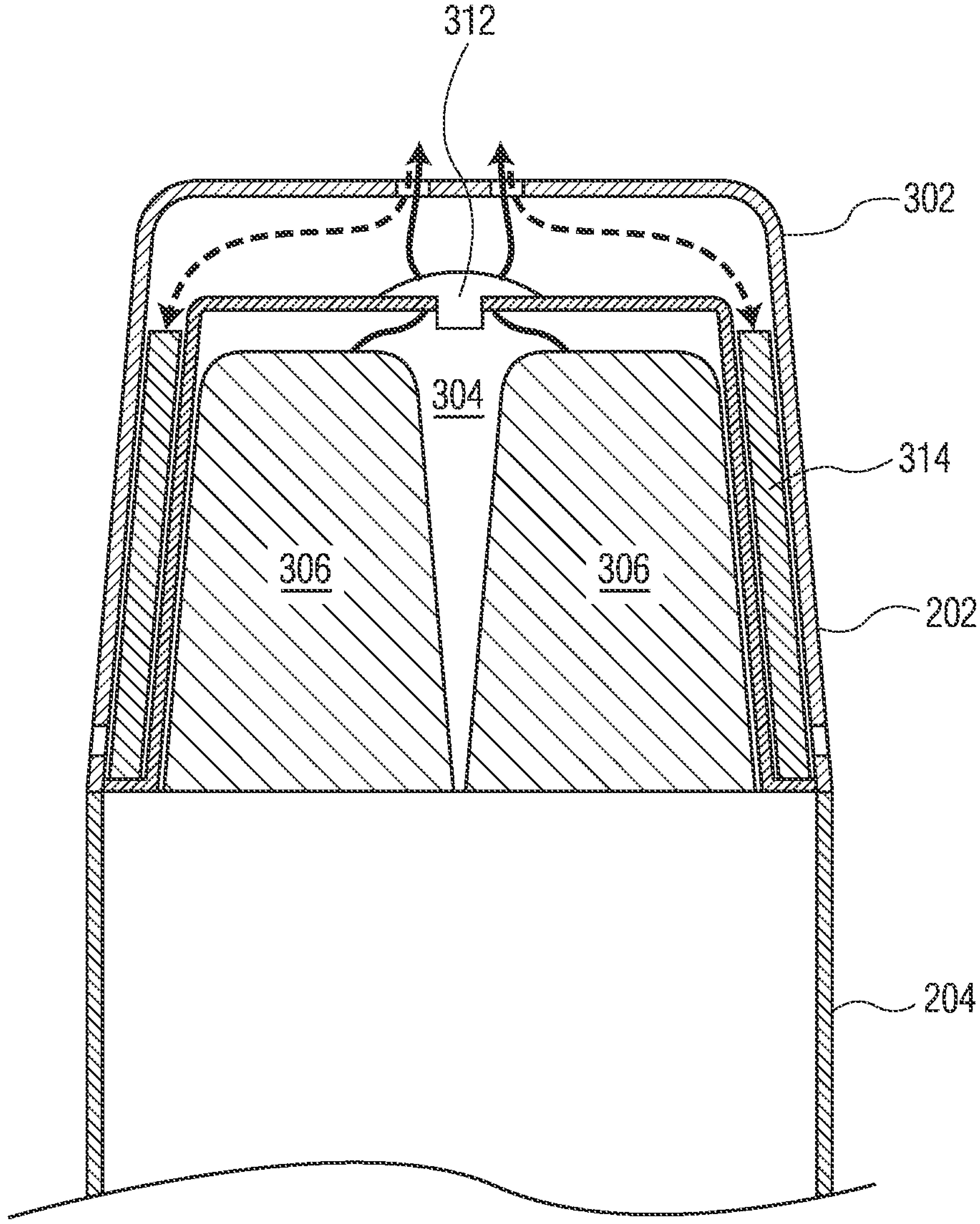


FIG. 4

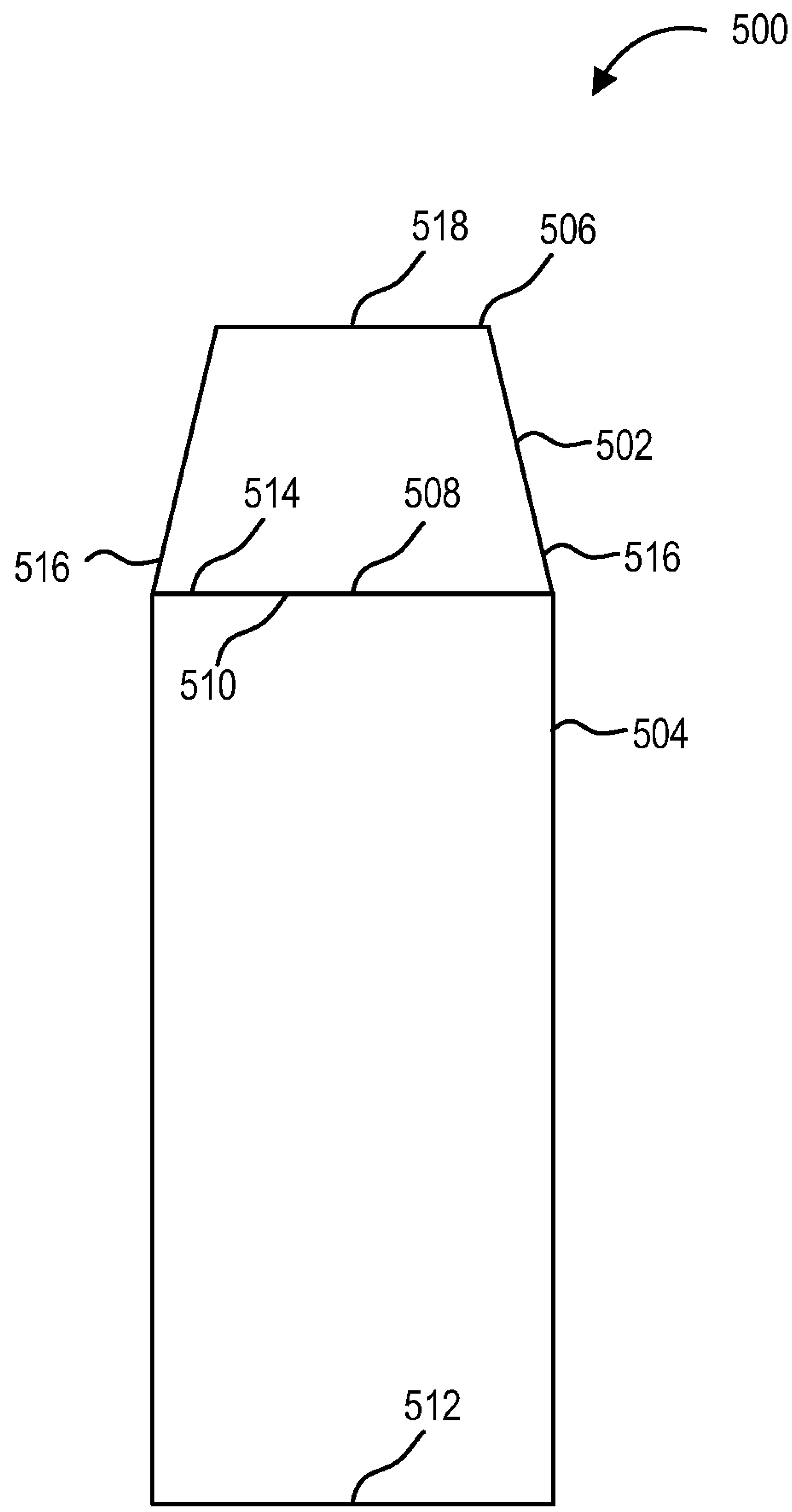


FIG. 5

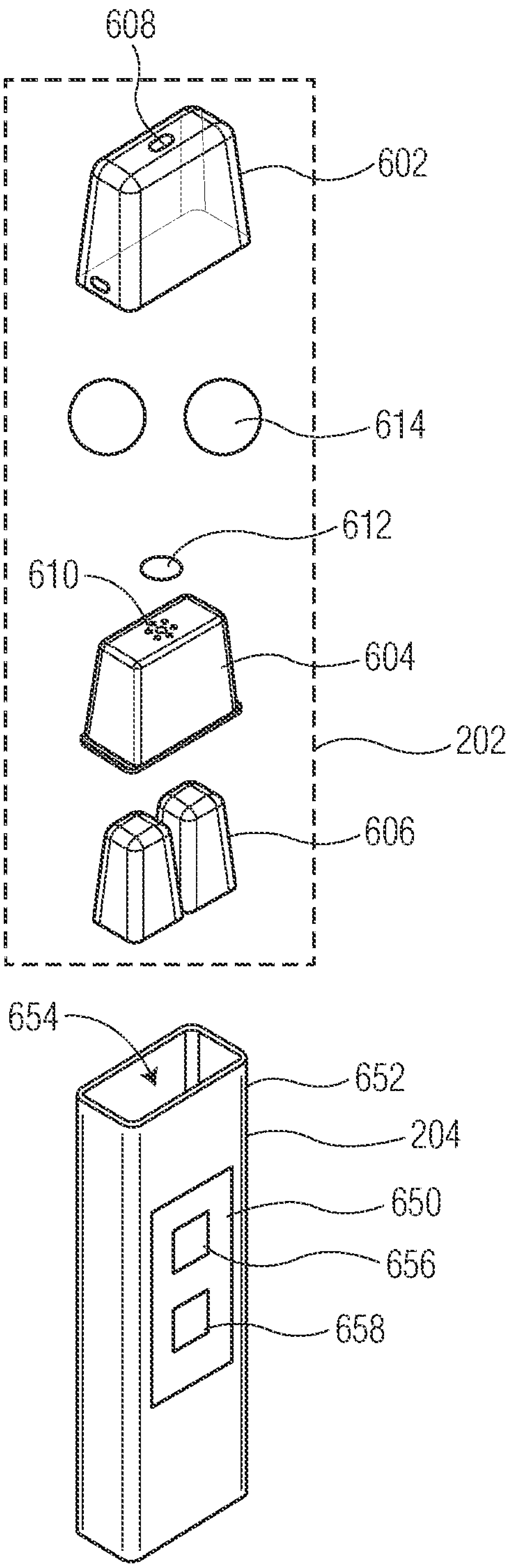


FIG. 6

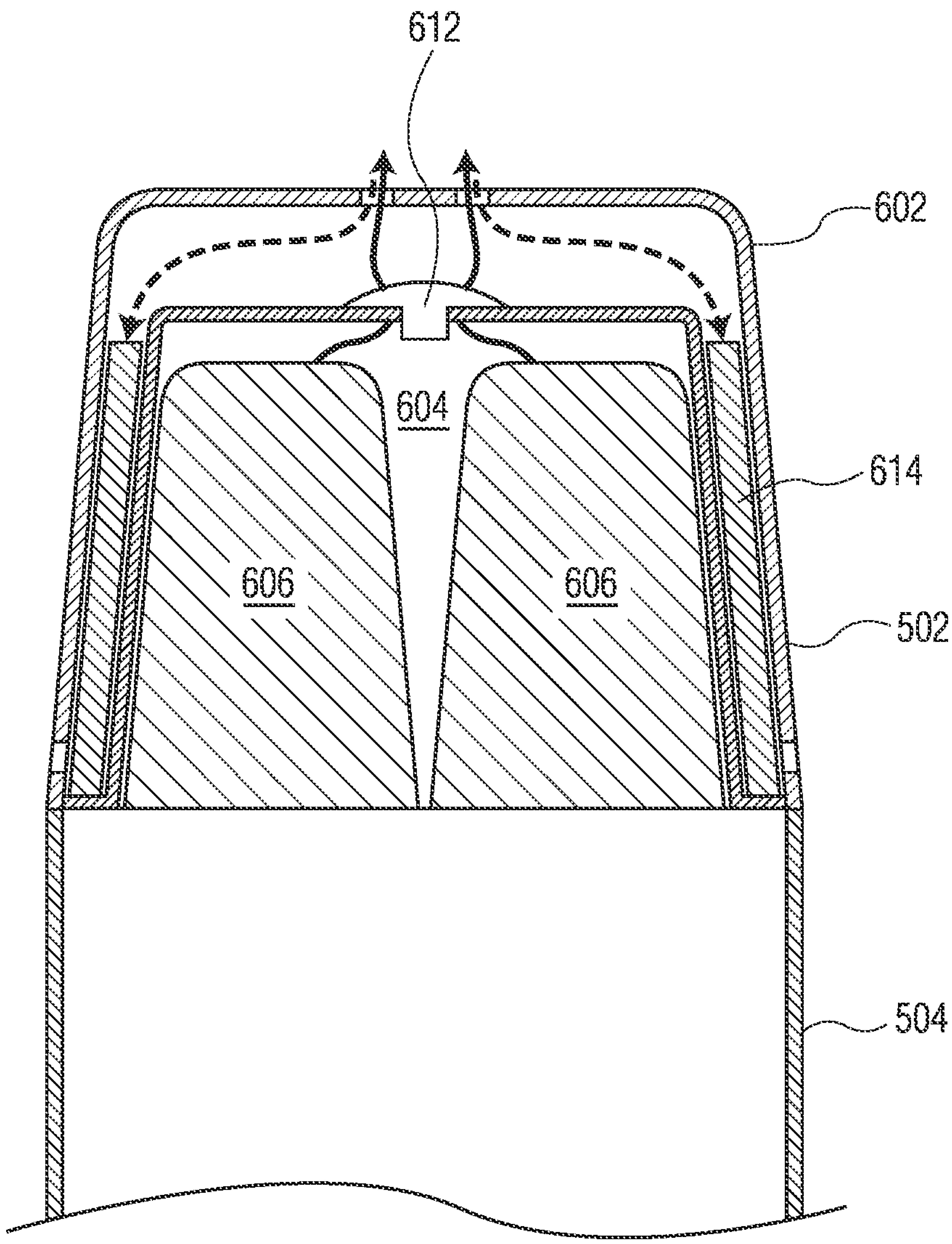


FIG. 7

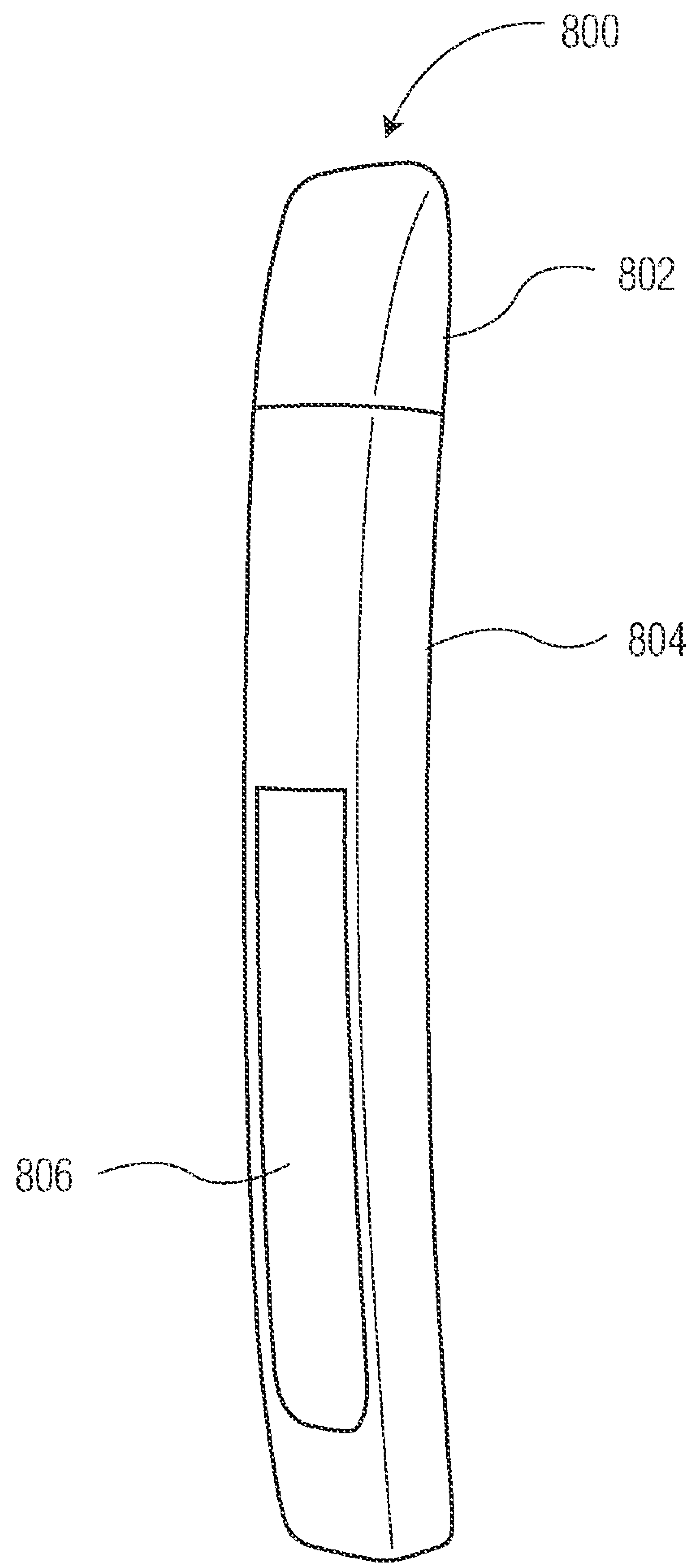


FIG. 8

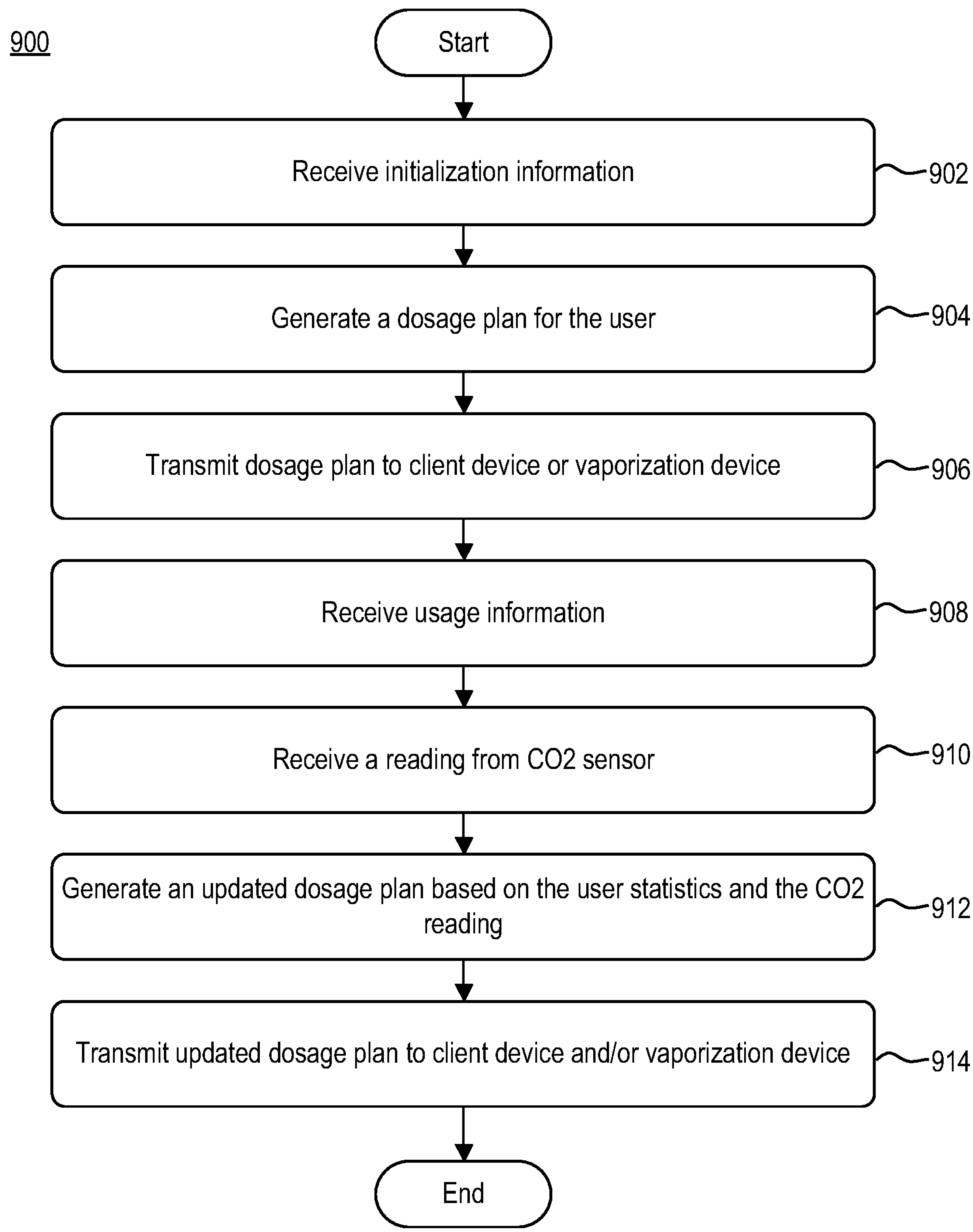

900
Start
Receive initialization information
902
Generate a dosage plan for the user
904
Transmit dosage plan to client device or vaporization device
906
Receive usage information
908
Receive a reading from CO2 sensor
910
Generate an updated dosage plan based on the user statistics and the CO2 reading
912
Transmit updated dosage plan to client device and/or vaporization device
914
End

FIG. 9

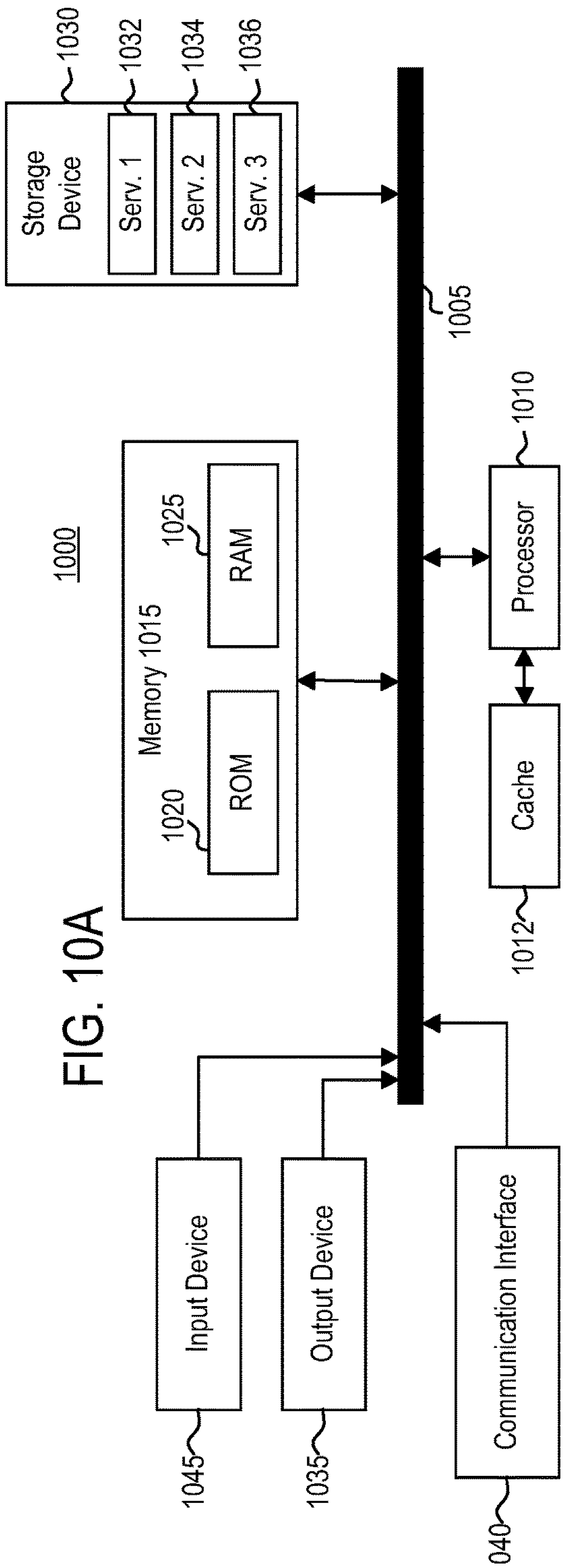


FIG. 10A

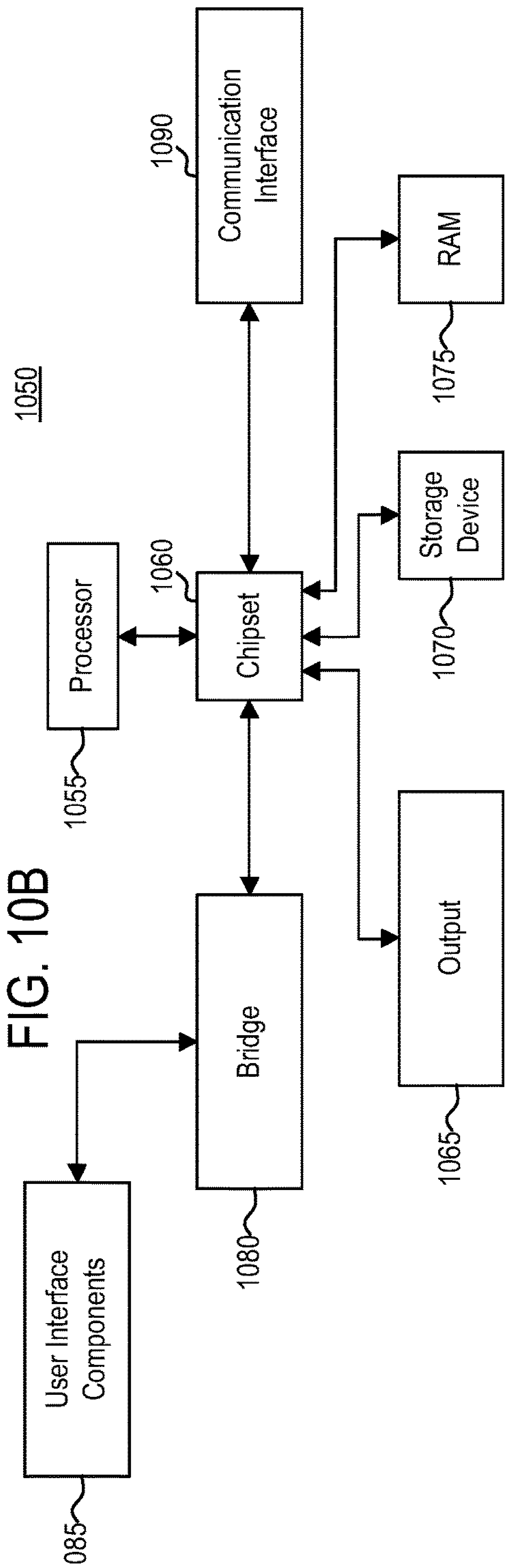


FIG. 10B

VAPORIZATION DEVICE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Application Ser. No. 63/265,046, filed Dec. 7, 2021 and U.S. Provisional Application Ser. No. 63/265,473, filed Dec. 15, 2021, both of which are hereby incorporated by reference in their entireties.

FIELD OF THE DISCLOSURE

[0002] The present disclosure generally relates to a vaporization device.

BACKGROUND

[0003] Vaporization devices have been frequently used as a cigarette replacement or as a means to wean users of cigarettes. For example, vaporization devices may be a battery operated device that is specially configured to mimic or simulate the feeling of smoking a cigarette. However, rather than burning actual tobacco, the vaporization device is configured to burn a liquid solution, thereby creating a vapor inhalable by the user. Such liquid solutions may include a nicotine-containing substance similar to that of cigarettes or a medicated substance.

SUMMARY

[0004] In some embodiments, a vaporization device is disclosed herein. The vaporization device includes a mouthpiece, an inner shell, a first pod, a second pod, a one-way valve, and a carbon monoxide sensor. The mouthpiece has a first opening. The inner shell is disposed in the mouthpiece. The inner shell has a second opening in fluid communication with the first opening. The first pod is disposed in the inner shell. The first pod is configured to hold a nicotine-containing liquid. The second pod is disposed in the inner shell. The second pod is configured to hold a non-nicotine-containing liquid. The one-way valve is positioned over the second opening. The one-way valve is configurable between an open position and a closed position. The carbon monoxide sensor is disposed in the vaporization device

[0005] In some embodiments, a vaporization device is disclosed herein. The vaporization device includes a mouthpiece, an inner shell, a first pod, a second pod, a one-way valve, and a vapor filtration mesh. The mouthpiece has a first opening. The inner shell is disposed in the mouthpiece. The inner shell has a second opening in fluid communication with the first opening. The first pod is disposed in the inner shell. The first pod is configured to hold a medication-containing liquid. The second pod is disposed in the inner shell. The second pod is configured to hold a non-medication-containing liquid. The one-way valve is positioned over the second opening. The one-way valve configurable between an open position and a closed position. The vapor filtration mesh disposed in the vaporization device.

[0006] In some embodiments, a computer-implemented method is disclosed herein. An initial smoking cessation plan is generated based on one or more inputs provided by a client device in communication with a vaporization device. The initial smoking cessation plan includes one or more phases, wherein each phase is associated with a predefined ratio of a vapor mixture for the vaporization device to deliver to a user. The initial smoking cessation plan is loaded onto the client device. One or more streams of usage statistics associated with the user's use of the vaporization device is received. A carbon monoxide and/or carbon monoxide reading from a carbon monoxide sensor disposed in the vaporization device is received. The one or more streams of usage statistics and the carbon monoxide and/or carbon monoxide reading are analyzed to determine whether the user's use of the vaporization device is in accordance with the initial smoking cessation plan. The user's use of the vaporization device is determined to deviate from the initial smoking cessation plan. The initial smoking cessation plan is modified based on the determining.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] So that the manner in which the above-recited features of the present disclosure can be understood in detail, a more particular description of the disclosure, briefly summarized above, may be had by reference to embodiments, some of which are illustrated in the appended drawings. It is to be noted, however, that the appended drawings illustrated only typical embodiments of this disclosure and are therefore not to be considered limiting of its scope, for the disclosure may admit to other equally effective embodiments.

[0008] FIG. **1** is a block diagram illustrating a computing environment, according to example embodiments.

[0009] FIG. **2** illustrates a vaporization device, according to example embodiments.

[0010] FIG. **3** is an exploded view of the vaporization device of FIG. **2**, according to example embodiments.

[0011] FIG. **4** is a block diagram illustrating the flow of air of the vaporization device of FIG. **2**, according to example embodiments.

[0012] FIG. **5** is a block diagram of vaporization device, according to example embodiments.

[0013] FIG. **6** is an exploded view of the vaporization device of FIG. **5**, according to example embodiments.

[0014] FIG. **7** is a block diagram illustrating the flow of air of the vaporization device of FIG. **5**, according to example embodiments.

[0015] FIG. **8** illustrates a vaporization device, according to example embodiments.

[0016] FIG. **9** is a flow diagram illustrating a method of generating a dosage plan, according to exemplary embodiments.

[0017] FIG. **10**A is a block diagram illustrating a computing device, according to example embodiments.

[0018] FIG. **10**B is a block diagram illustrating a computing device, according to example embodiments.

[0019] To facilitate understanding, identical reference numerals have been used, where possible, to designate identical elements that are common to the figures. It is contemplated that elements disclosed in one embodiment may be beneficially utilized on other embodiments without specific recitation.

DETAILED DESCRIPTION

[0020] One or more embodiments disclosed herein generally relate to a vaporization device and a system for implementing a dosage plan utilizing the vaporization device. In some embodiments, the vaporization device may include a one-way valve and vapor filtration mesh. Use of the one-way valve with the vapor filtration mesh may allow a user to filter out any contaminants that may be contained in a user's exhale. In this manner, the user can exhale into the vaporization device, which can filter and release the filtered air into the atmosphere. In this manner, a user can be mindful of any toxins caused by the user's secondhand vapor.

[0021] In some embodiments, the vaporization device may include a carbon monoxide sensor. The carbon monoxide sensor may be implemented as part of a smoking cessation plan. For example, as described below, a user can utilize vaporization device when trying to quit a smoking habit. The carbon monoxide sensor may be utilized to determine whether the user is "cheating" their smoking cessation plan by consuming nicotine from external sources.

[0022] FIG. **1** is a block diagram illustrating a computing environment **100**, according to example embodiments. Computing environment **100** may include vaporization device **102**, back-end computing system **104**, and client device **106** communicating via network **105**.

[0023] Network **105** may be of any suitable type, including individual connections via the Internet, such as cellular or Wi-Fi networks. In some embodiments, network **105** may connect terminals, services, and mobile devices using direct connections, such as radio frequency identification (RFID), near-field communication (NFC), Bluetooth™, low-energy Bluetooth™ (BLE), Wi-Fi™, ZigBee™, ambient backscatter communication (ABC) protocols, USB, WAN, or LAN. Because the information transmitted may be personal or confidential, security concerns may dictate one or more of these types of connection be encrypted or otherwise secured. In some embodiments, however, the information being transmitted may be less personal, and therefore, the network connections may be selected for convenience over security.

[0024] Network **105** may include any type of computer networking arrangement used to exchange data. For example, network **105** may include any type of computer networking arrangement used to exchange information. For example, network **105** may be the Internet, a private data network, virtual private network using a public network and/or other suitable connection(s) that enables components in computing environment **100** to send and receive information between the components of environment **100**.

[0025] Client device **106** may be operated by a user. For example, client device **106** may be a mobile device, a tablet, a desktop computer, or any computing system having the capabilities described herein. Client device **106** may belong to or be provided to a user or may be borrowed, rented, or shared. Users may include, but are not limited to, individuals such as, for example, subscribers, clients, prospective clients, or customers of an entity associated with back-end computing system **104**, such as individuals who have obtained, will obtain, or may obtain a product, service, or consultation from an entity associated with back-end computing system **104**.

[0026] Client device **106** may include at least application **112**. Application **112** may be representative of a web browser that allows access to a website or a stand-alone application. Client device **106** may access application **112** to access functionality of back-end computing system **104**. Client device **106** may communicate over network **105** to request a webpage, for example, from web client application server **114** of back-end computing system **104**. For example, client device **106** may be configured to execute application **112** to access content managed by web client application server **114**. The content that is displayed to client device **106** may be transmitted from web client application server **114** to client device **106**, and subsequently processed by application **112** for display through a graphical user interface (GUI) of client device **106**. In some embodiments, a user can access application **112** to identify other users, similar to social media functionality.

[0027] Client device **106** may communicate with vaporization device **102**. For example, client device **106** may communicate with vaporization device **102** via network **105**. Vaporization device **102** may be representative of device configured to deliver a vapor to a user. In some embodiments, the vapor may be formed from a nicotine-containing substance. In some embodiments, the vapor may be formed from a non-nicotine-containing substance, such as, but not limited to, ketamine, melatonin, oxytocin, amphetamines, vitamins, opioids, caffein, nutraceuticals, and the like.

[0028] In some embodiments, may be representative of a split-pod vaporization device configured to deliver a vapor mixture formed from a nicotine-containing substance and a non-nicotine-containing substance. In some embodiments, may be representative of a split-pod vaporization device configured to deliver a vapor mixture formed from a medication-containing substance and a non-medication-containing substance. Vaporization device **102** is discussed in further detail below in conjunction with FIGS. **2-8**.

[0029] In some embodiments, vaporization device **102** may include microcontroller **110**. Microcontroller **110** may be configured to communicate with client device **106** and/or back-end computing system **104**. Microcontroller **110** may be configured to track use of vaporization device **102**. For example, microcontroller **110** may track a number of uses of vaporization device **102** and a duration of each use. In some embodiments, vaporization device **102** may transmit the usage information to client device **106** for transmission to back-end computing system **104** for further analysis. In some embodiments, vaporization device **102** may transmit usage information directly to back-end computing system **104**.

[0030] Back-end computing system **104** may include at least web client application server **114** and a dosage module **116**. Each of dosage module **116** may be comprised of one or more software modules. The one or more software modules may be collections of code or instructions stored on a media (e.g., memory of back-end computing system **104**) that represent a series of machine instructions (e.g., program code) that implements one or more algorithmic steps. Such machine instructions may be the actual computer code the processor of back-end computing system **104** interprets to implement the instructions or, alternatively, may be a higher level of coding of the instructions that is interpreted to obtain the actual computer code. The one or more software modules may also include one or more hardware components. One or more aspects of an example algorithm may be performed by the hardware components (e.g., circuitry) itself, rather as a result of the instructions.

[0031] Dosage module **116** may be configured to communicate with client device **106**. In some embodiments, dosage module **116** may be configured to communicate with vaporization device **102**. Dosage module **116** may receive usage information from vaporization device **102**. Dosage module **116** may be configured to generate a dosage plan for the user based on user input, usage information, and the type of substance to be provided to the user. For example, dosage module **116** may be configured to generate a dosage plan for delivering Ketamine to the user. In another example, dosage module **116** may be configured to generate a dosage plan for delivering melatonin to the user. In another example, dosage module **116** may be configured to generate a smoking cessation plan for deliver nicotine to the user in a manner that may ween the user off of nicotine and/or cigarettes.

[0032] To generate the dosage plan, dosage module **116** may include machine learning module **118**. Machine learning module **118** may include one or more instructions to train a prediction model used by dosage module **116**. To train the prediction model, machine learning module **118** may receive, as input, usage activity of each user. In some embodiments, machine learning module **118** may further receive, as input, one or more parameters specified by each user via application **112**. Machine learning module **118** may implement one or more machine learning algorithms to train the prediction model. For example, machine learning module **118** may use one or more of a decision tree learning model, association rule learning model, artificial neural network model, deep learning model, inductive logic programming model, support vector machine model, clustering mode, Bayesian network model, reinforcement learning model, representational learning model, similarity and metric learning model, rule based machine learning model, and the like.

[0033] Machine learning module **118** may be configured to generation a dosage plan to the user. In some embodiments, the dosage plan may include one or more phases, wherein each phase of cessation plan may include a specific ratio of a nicotine-containing substance to non-nicotine-containing substance or a medication-containing substance to non-medication-containing substance in a vapor mixture as well as a duration for each phase. Machine learning module **118** may be configured to dynamically adjust the user's dosage plan, based on usage information. For example, if machine learning module **118** determines that the user is using vaporization device **102** more than expected, machine learning module **118** may update the dosage plan accordingly.

[0034] FIG. **2** illustrates a vaporization device **200**, according to example embodiments. Vaporization device **200** may be an example of vaporization device **102** discussed above, in conjunction with FIG. **1**. As illustrated, vaporization device **200** may include a first portion **202** and a second portion **204**. First portion **202** may be selectively coupled with second portion **204**.

[0035] First portion **202** may generally include a first end **206** and a second end **208**, opposite first end **206**. First end **206** may include an opening **218** formed therein. In some embodiments, first portion **202** may taper from second end **208** to first end **206**. As discussed in further detail below, first portion **202** may be configured to store one or more fluids used for delivery of a vapor mixture to users of vaporization device **200**. For example, first portion **202** may be configured to store at least two liquids: a non-nicotine containing liquid and a nicotine containing liquid. In operation, a vapor mixture formed from at least a portion of the non-nicotine containing liquid and the nicotine containing liquid may be delivered to the user of vaporization device **200**.

[0036] First portion **202** may be formed from a thermoplastic material (e.g., high-temperature thermoplastic material). Generally, first portion **202** may be formed from a food-safe, chemical (e.g., oil) resistant material. Exemplary materials may include, but are not limited to, nylon-based plastic (or equivalent), polyphenylene sulfide (PPS), polyether ether ketone (PEEK), polyetherimide (PEI), and the like.

[0037] Second portion **204** may generally include a first end **210** and a second end **212**, opposite first end. Although not shown in this particular figure, second end **212** may include a charging slot formed therein. Exemplary charging slots may include, but are not limited to, universal serial bus (USB) port, lightening port, and the like. As discussed in further detail below, second portion **204** may be configured to house one or more electronic components of vaporization device **200**.

[0038] Second portion **204** may be formed from extruded aluminum alloy, a material having an anodized or powder coating, and the like.

[0039] As illustrated in FIG. **2**, when in selective communication, first portion **202** may create an interface **214** with second portion **204**. Interface **214** may not be uniform about vaporization device **200**. For example, formed between first portion **202** and second portion **204** may be one or more air passages **216**. Each air passage **216** may allow air to flow from outside vaporization device **200** to an interior volume defined therein. For example, when a user inhales via opening **218**, air may be pulled within vaporization device **200** via one or more air passages **216**.

[0040] Generally, first portion **202** may be configured as a disposable component of vaporization device **102**. For example, first portion **202** may be disposed by end user when first portion **202** no longer contains at least one of a nicotine-containing substance or a non-nicotine-containing substance. However, rather than having the user physically refill first portion **202**, the user may purchase a new first portion **202** for use with vaporization device **102**.

[0041] FIG. **3** is an exploded view of vaporization device **200**, according to example embodiments. As shown, first portion **202** may include a mouthpiece **302**, an inner shell **304**, and one or more pods **306**.

[0042] Inner shell **304** may be configured to interface with second portion **204** of vaporization device **200**. Inner shell **304** may include an opening formed therein. One or more pods **306** may be disposed within the opening. Inner shell **304** may be configured such that inner shell **304** separates each of one or more pods **306** within mouthpiece **302**.

[0043] Each of the one or more pods **306** may include an activation element and a liquid. In some embodiments, the activation element may be representative of a heating coil. In operation, when power is applied to the heating coil, which, in turn, may vaporize the liquid in one or more pods **306** to create a vapor for consumption. In some embodiments, the activation element may be representative of a combination piezoelectric and mesh material. Such combination assists in vaporizing a liquid without heating the liquid significantly, thus producing a cool vapor, which may be less toxic compared to heating up other drug compounds to high temperatures. In some embodiments, the liquid in one or more pods **306** may be the same liquid across one or more pods **306**. For example, the liquid in one or more pods **306** may be a nicotine-containing substance, ketamine, and the like. In some embodiments, each pod of one or more pods **306** may contain a different liquid. For example, a first pod of one or more pods **306** may contain a nicotine-containing substance and a second pod of one or more pods **306** may contain a non-nicotine-containing substance. In such embodiments, each pod may include an independent activation element for heating the respective substance in the pod. For example, a first amount of power may be applied to a first activation element in a first pod that contains a nicotine-containing substance, and a second amount of power may be applied to a second activation element in a second pod that contains a non-nicotine-containing substance. In this manner, microcontroller **110** may control the ratio of nicotine-containing substance to non-nicotine-containing substance in a vapor mixture delivered to the user. Vapor created from one or more pods **306** may be pulled through inner shell **304** via an opening **310** formed therein.

[0044] Mouthpiece **302** may include an interior volume defined by a body of mouthpiece **302**. The interior volume is configured to house inner shell **304** and one or more pods **306**. For example, mouthpiece **302** may at least partially surround inner shell **304** and one or more pods **306**. Inner shell **304** may be configured such that inner shell **304** creates a channel of space within mouthpiece **302**. The channel of space allows for vapor from each of one or more pods **306** to mix before delivery of the resulting vapor mixture to the user.

[0045] As shown, mouthpiece **302** may include an opening **308**. Opening **308** may be in fluid communication with opening **310** of inner shell **304**. In this manner, when a user activates the activation elements, vapor produced by the activation elements may exit inner shell **304** via opening **310**. Vapor may then aggregate within the channel of space between inner shell **304** and mouthpiece **302**, which is created by inner shell **304**. Vapor may exit the channel through opening **308**.

[0046] In some embodiments, first portion **202** may further include a valve **312**. Valve **312** may be positioned over opening **310** of inner shell **304**. In some embodiments, valve **312** may be representative of a one-way valve. For example, when a user activates the coils of vaporization device **102** and inhales, valve **312** may allow air to pass through inner shell **304** towards opening **308**. If, for example, a user attempts to exhale through opening **308**, valve **312** may be configured to block air from passing through inner shell **304**.

[0047] Such use of valve **312** may allow vaporization device **102** to be specially configured. For example, in some embodiments, first portion **202** may further include vapor filtration mesh **314**. As shown, vapor filtration mesh may be positioned within the interior volume of mouthpiece **302**, along the outer walls of inner shell **304**. Vapor filtration mesh **314** may be configured to trap vapor exhaled into vaporization device **102**, via opening **308**, such that any harmful toxins that may be present in a user's exhale can be filtered through vaporization device **102**.

[0048] For example, one or more pods **306** may contain a ketamine liquid. Ketamine may contain substances, which, when exhaled, may harm those individuals that are co-located with a user of vaporization device **102**. Instead of the user exhaling into open air, thereby creating second-hand vapor that could contain harmful substances, the user can exhale into vaporization device **102** via opening **308**. With valve **312** in place, the vapor exhaled by the user into the channel between mouthpiece **302** and inner shell **304** cannot enter inner shell **304** via opening **310**. Instead, the vapor is forced to a periphery of inner shell **304**, towards one or more air passages **216**. As the exhales into the vaporization device **102**, the air that is exhaled is forced towards one or more air passages **216**, such that the air travels through vapor filtration mesh **314**. In this manner, the resultant air that leaves vaporization device **102** may be free from any harmful contaminants, thus protecting bystanders from second-hand vapor.

[0049] FIG. **4** is a block diagram illustrating the flow of air of vaporization device **200**, according to example embodiments. The inhale airflow is shown in dashed lines, while exhale airflow is shown in solid lines.

[0050] As illustrated, when a user inhales, vapor created by excitation of the activation elements in one or more pods **306** may flow in an upward direction towards the user. The act of inhaling may create negative pressure within first portion **202** of vaporization device **200**, such that valve **312** is placed in an open position, thereby allowing vapor to pass through inner shell **304** and into the channel between inner shell **304** and mouthpiece **302** for mixing, before delivery to the user.

[0051] When a user exhales into vaporization device **200**, the air enters the channel between inner shell **304** and mouthpiece **302**. Because negative pressure is not created within vaporization device **200**, valve **312** maintains a closed position, thereby preventing the air from entering inner shell **304**. As a result, the air is forced towards one or more air passages **216**. As the air travels towards one or more air passages **216**, any harmful contaminants that may be present in the air are filtered using vapor filtration mesh **314**. In this manner, when the air exits vaporization device **200**, via one or more air passages **216**, the resultant air is free from any harmful contaminants.

[0052] As those skilled in the art understand, the design illustrated in FIGS. **3** and **4** may be modified to achieve the same result. For example, rather than utilizing valve **312**, vaporization device **200** may include a straw-like device contained therein. When a user wishes to exhale, the straw-like device can extend partially outside of vaporization device **200**. The straw-like device can extend down a length of vaporization device **200**, such that the air exhaled by the user can exit the vaporization device **200** at one or more air passages formed in the bottom of vaporization device **200**. In such configuration, vapor filtration mesh **314** may be moved to the end of the straw-like device, such that the exhaled air can be filtered before exiting vaporization device **200** in a similar manner.

[0053] Referring back to FIG. **3**, second portion **204** may include a body **352** that defines interior volume **354**. Disposed within interior volume **354** may be at least microcontroller **350**. Microcontroller **350** may include a printed circuit board **356** and a power source **358**. Printed circuit board **356** may include at least one or more of power control circuitry, current sensing circuitry, voltage sensing circuitry, charging interface, battery charging circuity, network interface (e.g., radio frequency identification (RFID) module, near-field communication (NFC) module, Bluetooth™ module, low-energy Bluetooth™ (BLE) module, Wi-Fi™ adapter, ZigBee™ module, etc.), microcontroller, and one or more safety mechanisms.

[0054] Microcontroller **350** may be configured to communicate with a remote computing server. For example, microcontroller **350** may be configured to communicate user consumption information to a remote computing server and receive, from the remote computing server, dosage instructions. The dosage instructions (described in further detail below) provide the microcontroller with instructions directed to a target temperature of each activation element and a duration each activation element is heated.

[0055] Microcontroller **350** may instruct the power control circuitry regarding the amount of power to be provide to the activation elements in one or more pods **306**. Power control circuitry may be configured to control the amount of power provided by power source **358** to one or more activation elements. For example, temperature of activation elements may be measured using the resistance change of the coil, and implementing a feedback look with the microcontroller to adjust the power output to meet the target temperature (e.g., proportional-integral-derivative (PID) control loop). In some embodiments, power control circuitry may be a metal oxide silicon field effect transistor (MOSFET). The amount of power provided by power source **358** to each activation element affects the amount of vapor produced by vaporization device **200**. In some embodiments, power source **358** may be a re-chargeable battery (e.g., 3.7 V battery).

[0056] In some embodiments, microcontroller **350** may use a regression-based algorithm programmed locally on each device, which may be loaded to microcontroller via application **112** executing on client device **106** associated with vaporization device **200**. The regression-based algorithm may include instructions on how and when to reduce a user's consumption of the medication. In some embodiments, for each user, there may be a control period in which back-end computing system **104** learns and understands a user's consumption patterns. For example, back-end computing system **104** may learn the amount of time, milligrams of the medication taken per day, and/or the number of times vaporization device **200** is used. This data may be used to design each user's consumption plan.

[0057] FIG. **5** is a block diagram of vaporization device **500**, according to example embodiments. Vaporization device **500** may be configured similarly to vaporization device **200**. Vaporization device **500** may be an example of vaporization device **102** discussed above, in conjunction with FIG. **1**. As illustrated, vaporization device **500** may include a first portion **502** and a second portion **504**. First portion **502** may be selectively coupled with second portion **504**.

[0058] First portion **502** may generally include a first end **506** and a second end **508**, opposite first end **506**. First end **206** may include an opening **518** formed therein. In some embodiments, first portion **502** may taper from second end **508** to first end **506**. As discussed in further detail below, first portion **502** may be configured to store one or more fluids used for delivery of a vapor mixture to users of vaporization device **500**. For example, first portion **502** may be configured to store at least two liquids: a non-nicotine containing liquid and a nicotine containing liquid. In operation, a vapor mixture formed from at least a portion of the non-nicotine containing liquid and the nicotine containing liquid may be delivered to the user of vaporization device **500**.

[0059] First portion **502** may be formed from a thermoplastic material (e.g., high-temperature thermoplastic material). Generally, first portion **502** may be formed from a food-safe, chemical (e.g., oil) resistant material. Exemplary materials may include, but are not limited to, nylon-based plastic (or equivalent), polyphenylene sulfide (PPS), polyether ether ketone (PEEK), polyetherimide (PEI), and the like.

[0060] Second portion **504** may generally include a first end **510** and a second end **512**, opposite first end. Although not shown in this particular figure, second end **512** may include a charging slot formed therein. Exemplary charging slots may include, but are not limited to, universal serial bus (USB) port, lightening port, and the like. As discussed in further detail below, second portion **504** may be configured to house one or more electronic components of vaporization device **500**.

[0061] Second portion **504** may be formed from extruded aluminum alloy, a material having an anodized or powder coating, and the like.

[0062] As illustrated in FIG. **5**, when in selective communication, first portion **502** may create an interface **514** with second portion **504**. Interface **514** may not be uniform about vaporization device **500**. For example, formed between first portion **502** and second portion **504** may be one or more air passages **516**. Each air passage **516** may allow air to flow from outside vaporization device **500** to an interior volume defined therein. For example, when a user inhales via opening **518**, air may be pulled within vaporization device **500** via one or more air passages **516**.

[0063] Generally, first portion **502** may be configured as a disposable component of vaporization device **500**. For example, first portion **502** may be disposed by end user when first portion **502** no longer contains at least one of a nicotine-containing substance or a non-nicotine-containing substance. However, rather than having the user physically refill first portion **502**, the user may purchase a new first portion **502** for use with vaporization device **102**.

[0064] FIG. **6** is an exploded view of vaporization device **500**, according to example embodiments. As shown, first portion **502** may include a mouthpiece **602**, an inner shell **604**, and one or more pods **606**.

[0065] Inner shell **604** may be configured to interface with second portion **504** of vaporization device **500**. Inner shell **604** may include an opening formed therein. One or more pods **606** may be disposed within the opening. Inner shell **604** may be configured such that inner shell **604** separates each of one or more pods **606** within mouthpiece **602**.

[0066] Each of the one or more pods **606** may include an activation element and a liquid. In some embodiments, the activation element may be representative of a heating coil. In operation, when power is applied to the heating coil, which, in turn, may vaporize the liquid in one or more pods **606** to create a vapor for consumption. In some embodiments, the activation element may be representative of a combination piezoelectric and mesh material. Such combination assists in vaporizing a liquid without heating the liquid significantly, thus producing a cool vapor, which may be less toxic compared to heating up other drug compounds to high temperatures. In some embodiments, each pod of one or more pods **606** may contain a different liquid. For example, a first pod of one or more pods **606** may contain a nicotine-containing substance and a second pod of one or more pods **606** may contain a non-nicotine-containing substance. In such embodiments, each pod may include an independent activation element for heating the respective substance in the pod. For example, a first amount of power may be applied to a first activation element in a first pod that contains a nicotine-containing substance, and a second amount of power may be applied to a second activation element in a second pod that contains a non-nicotine-containing substance. In this manner, microcontroller **110** may control the ratio of nicotine-containing substance to non-nicotine-containing substance in a vapor mixture delivered to the user. In some embodiments, microcontroller **350**

disposed in second portion **504** may determine the ratio of nicotine-containing substances to non-nicotine containing substance to deliver to the user. Vapor created from one or more pods **606** may be pulled through inner shell **604** via an opening **610** formed therein.

[0067] Mouthpiece **602** may include an interior volume defined by a body of mouthpiece **602**. The interior volume is configured to house inner shell **604** and one or more pods **606**. For example, mouthpiece **602** may at least partially surround inner shell **604** and one or more pods **606**. Inner shell **604** may be configured such that inner shell **604** creates a channel of space within mouthpiece **602**. The channel of space allows for vapor from each of one or more pods **606** to mix before delivery of the resulting vapor mixture to the user.

[0068] As shown, mouthpiece **602** may include an opening **608**. Opening **608** may be in fluid communication with opening **610** of inner shell **604**. In this manner, when a user activates the activation elements, vapor produced by the activation elements may exit inner shell **604** via opening **610**. Vapor may then aggregate within the channel of space between inner shell **604** and mouthpiece **602**, which is created by inner shell **604**. Vapor may exit the channel through opening **608**.

[0069] In some embodiments, first portion **502** may further include a valve **612**. Valve **612** may be positioned over opening **610** of inner shell **604**. In some embodiments, valve **612** may be representative of a one-way valve. For example, when a user activates the coils of vaporization device **102** and inhales, valve **612** may allow air to pass through inner shell **604** towards opening **608**. If, for example, a user attempts to blow into opening **608**, valve **612** may be configured to block air from passing through inner shell **604**.

[0070] As shown, vaporization device **500** may further include one or more carbon monoxide sensors **614**. Each carbon monoxide sensor **614** may be configured to measure a level of carbon monoxide in the user's breath. Such information may be used to assist dosage module **116** to accurately generate or adjust a smoking cessation plan for the user. For example, by utilizing carbon monoxide sensor **614**, dosage module **116** may determine whether the user is utilizing other devices or products to consume nicotine. This may signal to dosage module **116** that the amount of nicotine-containing substance should be increased or maintained over a longer period of time. Similarly, if the level of carbon monoxide in the user's breath is within an acceptable range, this may signal to dosage module **116** that the user is on track with the smoking cessation plan.

[0071] FIG. **7** is a block diagram illustrating the flow of air of vaporization device **500**, according to example embodiments. The inhale airflow is shown in dashed lines, while breath airflow is shown in solid lines.

[0072] As illustrated, when a user inhales, vapor created by excitation of the activation elements in one or more pods **606** may flow in an upward direction towards the user. The act of inhaling may create negative pressure within first portion **502** of vaporization device **500**, such that valve **612** is placed in an open position, thereby allowing vapor to pass through inner shell **604** and into the channel between inner shell **604** and mouthpiece **602** for mixing, before delivery to the user.

[0073] When a user blows into vaporization device **500** to test the nicotine levels in their breath, the air enters the channel between inner shell **604** and mouthpiece **602**. Because negative pressure is not created within vaporization device **500**, valve **612** maintains a closed position, thereby preventing the air from entering inner shell **604**. As a result, the air is forced towards one or more air passages **516**. As the air travels towards one or more air passages **516**, it will pass one or more carbon monoxide sensors **614** before exiting vaporization device **500**.

[0074] As those skilled in the art understand, the design illustrated in FIGS. **5** and **6** may be modified to achieve the same result. For example, rather than utilizing valve **612**, vaporization device **500** may include a straw-like device contained therein. When a user tests their nicotine levels, the straw-like device can extend partially outside of vaporization device **500**. The straw-like device can extend down a length of vaporization device **500**, such that the air exhaled by the user can exit the vaporization device **500** at one or more air passages formed in the bottom of vaporization device **500**. In such configuration, one or more carbon monoxide sensors may be moved to the end of the straw-like device, such that the carbon monoxide levels in the air can be measured before exiting vaporization device **500** in a similar manner.

[0075] Referring back to FIG. **6**, second portion **504** may include a body **652** that defines interior volume **654**. Disposed within interior volume **654** may be at least microcontroller **650** in communication with one or more carbon monoxide sensors **614**. Microcontroller **650** may include a printed circuit board **656** and a power source **658**. Printed circuit board **656** may include at least one or more of power control circuitry, current sensing circuitry, voltage sensing circuitry, charging interface, battery charging circuity, network interface (e.g., radio frequency identification (RFID) module, near-field communication (NFC) module, Bluetooth™ module, low-energy Bluetooth™ (BLE) module, Wi-Fi™ adapter, ZigBee™ module, etc.), microcontroller, and one or more safety mechanisms.

[0076] Microcontroller **650** may be configured to communicate with a remote computing server. For example, microcontroller **650** ay be configured to communicate user consumption information to a remote computing server and receive, from the remote computing server, dosage instructions. The dosage instructions (described in further detail below) provide the microcontroller with instructions directed to a target temperature of each activation element and a duration each activation element is heated. The dosage instructions may be a part of a larger cessation plan generated by remote computing server.

[0077] Microcontroller **650** may instruct the power control circuitry regarding the amount of power to be provide to the activation elements in one or more pods **306**. Power control circuitry may be configured to control the amount of power provided by power source **658** to one or more activation elements. For example, temperature of activation elements may be measured using the resistance change of the coil, and implementing a feedback look with the microcontroller to adjust the power output to meet the target temperature (e.g., proportional-integral-derivative (PID) control loop). In some embodiments, power control circuitry may be a metal oxide silicon field effect transistor (MOSFET). The amount of power provided by power source **658** to each activation element affects the amount of vapor produced by vaporization device **500**. In some embodiments, power source **658** may be a re-chargeable battery (e.g., 3.7 V battery).

[0078] In some embodiments, microcontroller **650** may use a regression-based algorithm programmed locally on each device, which may be loaded to microcontroller via application **112** executing on client device **106** associated with vaporization device **500**. The regression-based algorithm may include instructions on how and when to reduce a user's nicotine intake. In some embodiments, for each user, there may be a control period in which back-end computing system **104** learns and understands a user's smoking behaviors. For example, back-end computing system **104** may learn the amount of time, milligrams of nicotine taken per day from vaporization device **500**, milligrams of nicotine taken per day from other devices (from carbon monoxide sensors **614**), and/or the number of times vaporization device **500** is used. This data may be used to design each user's cessation plan.

[0079] FIG. **8** illustrates a vaporization device **800**, according to example embodiments. In some embodiments, vaporization device **800** may be configured similar to vaporization device **200**. In some embodiments, vaporization device **800** may be configured similar to vaporization device **500**.

[0080] As shown, vaporization device **800** may include a curved body that includes a first portion **802** and a second portion **804**. The curved body is configured to mimic the physical feel of holding a cigarette. Accordingly, a user can hold vaporization device **800** in a similar way the user would hold a combustible cigarette. Additionally, the curved body is more comfortable for the user to hold compared to conventional vaporization devices. In some embodiments, first portion **802** may be configurated similar to first portion **202** and second portion **804** may be configured similar to second portion **204**. In some embodiments, first portion **802** may be configurated similar to first portion **502** and second portion **804** may be configured similar to second portion **504**.

[0081] Second portion **804** may further include an indicator **806**. Indicator **806** may visually indicate when the user is using vaporization device **800**. For example, indicator **806** may be representative of an LED light that emits light in a gradient fashion to mimic a burn of a cigarette. In some embodiments, indicator **806** may be representative of a display (e.g., OLED display) that similarly emits light in a gradient fashion to mimic a burn of a cigarette. In operation, the gradient of indicator **806** may be controlled by the microcontroller of vaporization device **800**. In some embodiments, vaporization device **800** may further include a pressure sensor. As a user inhales using vaporization device **800**, the pressure sensor may be activated, which may prompt a controller to activate indicator **806** in a manner that mimics the burndown of a cigarette ember.

[0082] In some embodiments, application **112** may further include a timer that activates when application **112** determines that the user has puffed enough times that one cigarette has been smoked in a continuous fashion.

[0083] In some embodiments, indicator **806** may also be used as an alarm or timer to signal to the user that they should consume the vapor mixture at certain times of the day (e.g., in the morning). In some embodiments, application **112** may further cause client device **106** to vibrate slowly after morning alarm to indicate user can use device if needed

[0084] FIG. **9** is a flow diagram illustrating a method **900** of generating a dosage plan, according to exemplary embodiments. In some embodiments, method **900** may involve use of vaporization device **102**, vaporization device **200**, vaporization device **500**, and/or vaporization device **800** discussed above in conjunction with FIGS. **1-8**. For exemplary purposes only, method **900** may be discussed with particular reference to vaporization device **500**. Method **900** may begin at step **902**.

[0085] At step **902**, back-end computing system **104** receives initializing information from client device **106**. Such initializing information may include, but is not limited to, a user's age, gender, smoking habits (e.g., how many times per day, how many packs per week, how long the user has smoked for, etc.), occupation, smoking cessation goals, and the like.

[0086] At step **904**, back-end computing system **104** may generate a dosage plan for the user. In some embodiments, back-end computing system **104** may generate a dosage plan based on the initializing information. Dosage module **116** may leverage a prediction model generated by machine learning module **118** to generate a dosage plan for the user based on those parameters provided by the user. In this manner, dosage module **116** may generate an individualized dosage plan based on the user's attributes and goals.

[0087] In some embodiments, the dosage plan may be representative of a smoking cessation plan that may include one or more phases. Each phase may include a specific ratio of nicotine-containing substance to non-nicotine-containing substance in a vapor mixture. Over time (e.g., as the user progress through the various phases), the ratio of substances within the vapor mixture may change, until a user is almost entirely consuming a vapor formed from the non-nicotine-containing substance.

[0088] In some embodiments, the dosage plan may be representative of a medication plan for depression that involves delivering varying amounts of Ketamine over one or more phases. Each phase may include a specific ratio of Ketamine-containing substance to non-Ketamine-containing substance in a vapor mixture. Over time (e.g., as the user progress through the various phases), the ratio of substances within the vapor mixture may change, depending on how often the user relies on vaporization device **500**.

[0089] At step **906**, back-end computing system **104** may transmit the dosage plan to client device **106** of the user. In some embodiments, back-end computing system **104** may provide client device **106** with access to the dosage plan via one or more application programming interfaces (APIs) that allow client device **106** to access the dosage plan. In some embodiments, back-end computing system **104** may transmit the dosage plan directly to microcontroller **650** of vaporization device **500**.

[0090] In those embodiments in which back-end computing system **104** transmits the dosage plan to client device **106**, client device **106** may communicate the dosage plan to vaporization device **500**. For example, client device **106** may interface with microcontroller **650** of vaporization device **500**, such that vaporization device **500** may store at least a portion of the dosage plan in memory. The portion of the dosage plan transmitted from client device **106** to microcontroller **650** may include instructions as to how much power to deliver to each activation element. As a result, vaporization device **500** may deliver a vapor mixture formed from a predefined ratio of a substances to the end user. For example, when a user attempts to consume a vapor mixture, microcontroller **650** may cause a predefined amount of power to be provided each activation element to heat the liquids contained therein, thereby generating a vapor mixture. In some embodiments, microcontroller **650** may provide a different amount of power to each activation element to obtain a pre-defined ratio, as dictated by the dosage plan.

[0091] At step **908**, back-end computing system **104** may receive usage information. In some embodiments, back-end computing system **104** may receive usage information from client device **106**. In some embodiments, back-end computing system **104** may receive usage information from microcontroller **650**. In some embodiments, back-end computing system **104** may receive usage statistics in real-time (or near real-time). In some embodiments, back-end computing system **104** may receive usage statistics in batches. For example, back-end computing system **104** may receive usage statistics periodically (e.g., daily).

[0092] At step **910**, back-end computing system **104** may receive a reading from carbon monoxide sensor **614**. For example, a user may be prompted to blow into vaporization device **500** to measure an amount of carbon monoxide and/or carbon monoxide contained in the user's breath. In this manner, carbon monoxide sensor **614** may provide an indication to back-end computing system **104** regarding the user's nicotine intake. For example, it may be the case that the user needs more nicotine than originally planned by dosage module **116**. As a result, the user is seeking other sources of nicotine (e.g., cigarettes, chewing tobacco, etc.) in addition to vaporization device **500**.

[0093] At step **912**, back-end computing system **104** may generate an updated dosage plan based on the user statistics and carbon monoxide reading. For example, dosage module **116** may be configured to provide the user data and carbon monoxide reading, as input, to prediction model to determine whether the initial dosage plan should be adjusted. The adjustments may results in an extension of certain phases to the dosage plan or a change to the ratio of substances in a given phase.

[0094] At step **914**, back-end computing system **104** may transmit the updated smoking cessation plan to client device **106** of the user or microcontroller **650**. In some embodiments, back-end computing system **104** may provide client device **106** or microcontroller **650** with access to the updated smoking cessation plan via one or more APIs.

[0095] FIG. **10**A illustrates an architecture of system bus computing system **1000**, according to example embodiments. One or more components of system **1000** may be in electrical communication with each other using a bus **1005**. System **1000** may include a processor (e.g., one or more CPUs, GPUs or other types of processors) **1010** and a system bus **1005** that couples various system components including the system memory **1015**, such as read only memory (ROM) **1020** and random access memory (RAM) **1025**, to processor **1010**. System **1000** can include a cache of high-speed memory connected directly with, in close proximity to, or integrated as part of processor **1010**. System **1000** can copy data from memory **1015** and/or storage device **1030** to cache **1012** for quick access by processor **1010**. In this way, cache **1012** may provide a performance boost that avoids processor **1010** delays while waiting for data. These and other modules can control or be configured to control processor **1010** to perform various actions. Other system memory **1015** may be available for use as well. Memory **1015** may include multiple different types of memory with different performance characteristics. Processor **1010** may be representative of a single processor or multiple processors. Processor **1010** can include one or more of a general purpose processor or a hardware module or software module, such as service **1 1032**, service **2 1034**, and service **3 1036** stored in storage device **1030**, configured to control processor **1010**, as well as a special-purpose processor where software instructions are incorporated into the actual processor design. Processor **1010** may essentially be a completely self-contained computing system, containing multiple cores or processors, a bus, memory controller, cache, etc. A multi-core processor may be symmetric or asymmetric.

[0096] To enable user interaction with the system **1000**, an input device **1045** which can be any number of input mechanisms, such as a microphone for speech, a touch-sensitive screen for gesture or graphical input, keyboard, mouse, motion input, speech and so forth. An output device **1035** (e.g., a display) can also be one or more of a number of output mechanisms known to those of skill in the art. In some instances, multimodal systems can enable a user to provide multiple types of input to communicate with system **1000**. Communications interface **1040** can generally govern and manage the user input and system output. There is no restriction on operating on any particular hardware arrangement and therefore the basic features here may easily be substituted for improved hardware or firmware arrangements as they are developed.

[0097] Storage device **1030** may be a non-volatile memory and can be a hard disk or other types of computer readable media that can store data that are accessible by a computer, such as magnetic cassettes, flash memory cards, solid state memory devices, digital versatile disks, cartridges, random access memories (RAMs) **1025**, read only memory (ROM) **1020**, and hybrids thereof.

[0098] Storage device **1030** can include services **1032**, **1034**, and **1036** for controlling the processor **1010**. Other hardware or software modules are contemplated. Storage device **1030** can be connected to system bus **1005**. In one aspect, a hardware module that performs a particular function can include the software component stored in a computer-readable medium in connection with the necessary hardware components, such as processor **1010**, bus **1005**, output device **1035** (e.g., a display), and so forth, to carry out the function.

[0099] FIG. **10**B illustrates a computer system **1050** having a chipset architecture, according to example embodiments. Computer system **1050** may be an example of computer hardware, software, and firmware that can be used to implement the disclosed technology. System **1050** can include one or more processors **1055**, representative of any number of physically and/or logically distinct resources capable of executing software, firmware, and hardware configured to perform identified computations. One or more processors **1055** can communicate with a chipset **1060** that can control input to and output from one or more processors **1055**. In this example, chipset **1060** outputs information to output **1065**, such as a display, and can read and write information to storage device **1070**, which can include magnetic media, and solid-state media, for example. Chipset **1060** can also read data from and write data to storage device **1075** (e.g., RAM). A bridge **1080** for interfacing with a variety of user interface components **1085** can be provided for interfacing with chipset **1060**. Such user interface components **1085** can include a keyboard, a microphone, touch detection and processing circuitry, a pointing device, such as a mouse, and so on. In general, inputs to system **1050** can come from any of a variety of sources, machine generated and/or human generated.

[0100] Chipset **1060** can also interface with one or more communication interfaces **1090** that can have different physical interfaces. Such communication interfaces can include interfaces for wired and wireless local area networks, for broadband wireless networks, as well as personal area networks. Some applications of the methods for generating, displaying, and using the GUI disclosed herein can include receiving ordered datasets over the physical interface or be generated by the machine itself by one or more processors **1055** analyzing data stored in storage device **1070** or **1075**. Further, the machine can receive inputs from a user through user interface components **1085** and execute appropriate functions, such as browsing functions by interpreting these inputs using one or more processors **1055**.

[0101] It can be appreciated that example systems **1000** and **1050** can have more than one processor **1010** or be part of a group or cluster of computing devices networked together to provide greater processing capability.

[0102] While the foregoing is directed to embodiments described herein, other and further embodiments may be devised without departing from the basic scope thereof. For example, aspects of the present disclosure may be implemented in hardware or software or a combination of hardware and software. One embodiment described herein may be implemented as a program product for use with a computer system. The program(s) of the program product define functions of the embodiments (including the methods described herein) and can be contained on a variety of computer-readable storage media. Illustrative computer-readable storage media include, but are not limited to: (i) non-writable storage media (e.g., read-only memory (ROM) devices within a computer, such as CD-ROM disks readably by a CD-ROM drive, flash memory, ROM chips, or any type of solid-state non-volatile memory) on which information is permanently stored; and (ii) writable storage media (e.g., floppy disks within a diskette drive or hard-disk drive or any type of solid state random-access memory) on which alterable information is stored. Such computer-readable storage media, when carrying computer-readable instructions that direct the functions of the disclosed embodiments, are embodiments of the present disclosure.

[0103] It will be appreciated to those skilled in the art that the preceding examples are exemplary and not limiting. It is intended that all permutations, enhancements, equivalents, and improvements thereto are apparent to those skilled in the art upon a reading of the specification and a study of the drawings are included within the true spirit and scope of the present disclosure. It is therefore intended that the following appended claims include all such modifications, permutations, and equivalents as fall within the true spirit and scope of these teachings.

1. A vaporization device, comprising:

a mouthpiece having a first opening;

an inner shell disposed in the mouthpiece, the inner shell having a second opening in fluid communication with the first opening;

a first pod disposed in the inner shell, the first pod configured to hold a nicotine-containing liquid;

a second pod disposed in the inner shell, the second pod configured to hold a non-nicotine-containing liquid;

a one-way valve positioned over the second opening, the one-way valve configurable between an open position and a closed position, the one way valve directing two airflow pathways defined in the mouthpiece; and

a carbon monoxide sensor disposed in the vaporization device.

2. The vaporization device of claim **1**, further comprising:

a first activation element disposed in the first pod, the first activation element configured to heat the nicotine-containing liquid to form a first vapor; and

a second activation element disposed in the second pod, the second activation element configured to heat the non-nicotine-containing liquid to form a second vapor.

3. The vaporization device of claim **2**, further comprising:

a microcontroller in communication with the first activation element and the second activation element, the microcontroller configured to vary an amount of power applied to the first activation element and the second activation element.

4. The vaporization device of claim **3**, wherein the microcontroller stores a dosage plan that defines the amount of power to be applied to the first activation element and the second activation element.

5. The vaporization device of claim **1**, wherein the carbon monoxide sensor is configured to measure an amount of carbon monoxide and/or carbon monoxide present in a user's breath.

6. The vaporization device of claim **2**, wherein the inner shell defines a channel in the mouthpiece, wherein the first vapor mixes with the second vapor in the channel to form a vapor mixture to be delivered to a user.

7. The vaporization device of claim **1**, further comprising:

an indicator, wherein the indicator is configured to emit a light gradient.

8. The vaporization device of claim **1**, wherein the one-way valve is configurable to the open position when negative pressure is created in the mouthpiece.

9. The vaporization device of claim **1**, further comprising:

one or more air passages, the one or more air passages configured to allow air to exit the mouthpiece.

10. A vaporization device, comprising:

a mouthpiece having a first opening;

an inner shell disposed in the mouthpiece, the inner shell having a second opening in fluid communication with the first opening;

a first pod disposed in the inner shell, the first pod configured to hold a medication-containing liquid;

a second pod disposed in the inner shell, the second pod configured to hold a non-medication-containing liquid;

a one-way valve positioned over the second opening, the one-way valve configurable between an open position and a closed position; and

a vapor filtration mesh disposed in the mouthpiece.

11. The vaporization device of claim **10**, further comprising:

a first activation element disposed in the first pod, the first activation element configured to heat the medication-containing liquid to form a first vapor; and

a second activation element disposed in the second pod, the second activation element configured to heat the non-medication-containing liquid to form a second vapor.

12. The vaporization device of claim **11**, further comprising:

a microcontroller in communication with the first activation element and the second activation element, the microcontroller configured to vary an amount of power applied to the first activation element and the second activation element.

13. The vaporization device of claim **12**, wherein the microcontroller stores a dosage plan that defines the amount of power to be applied to the first activation element and the second activation element.

14. The vaporization device of claim **10**, wherein the vapor filtration mesh is configured to filter contaminants.

15. The vaporization device of claim **10**, further comprising:

one or more air passages, the one or more air passages configured to allow air to exit the mouthpiece.

16. The vaporization device of claim **15**, wherein the one-way valve is configurable to the open position when negative pressure is created in the mouthpiece.

17. The vaporization device of claim **15**, wherein the one-way valve is configurable to the closed position when a user exhales into the mouthpiece, wherein, in the closed position, the one-way valve forces an exhale of the user to pass through the vapor filtration mesh, towards the one or more air passages.

18. A computer-implemented method, comprising:

generating an initial smoking cessation plan based on one or more inputs provided by a client device in communication with a vaporization device, the initial smoking cessation plan comprising one or more phases, wherein each phase is associated with a predefined ratio of a vapor mixture for the vaporization device to deliver to a user;

loading the initial smoking cessation plan onto the client device;

receiving one or more streams of usage statistics associated with the user's use of the vaporization device;

receiving a carbon monoxide and/or carbon monoxide reading from a carbon monoxide sensor disposed in the vaporization device;

analyzing the one or more streams of usage statistics and the carbon monoxide and/or carbon monoxide reading to determine whether the user's use of the vaporization device is in accordance with the initial smoking cessation plan;

determining that the user's use of the vaporization device deviates from the initial smoking cessation plan; and

modifying the initial smoking cessation plan based on the determining.

19. The computer-implemented method of claim **18**, wherein the carbon monoxide and/or carbon monoxide reading indicates a level of nicotine present in the user's breath.

20. The computer-implemented method of claim **18**, wherein the usage statistics comprise one or more uses of the vaporization device and a duration associated with each use of the one or more uses.

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