US 20220386544A1

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2022/0386544 A1

An et al. (43) Pub. Date: Dec. 8, 2022

(54) **HYDRATION AND SANITIZATION SYSTEM FOR AN INDOOR GARDENING APPLIANCE**

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(21) Appl. No.: **17/339,259**

(22) Filed: **Jun. 4, 2021**

Publication Classification

(51) **Int. Cl.**

A01G 31/02	(2006.01)
A61L 2/00	(2006.01)
C25B 1/22	(2006.01)

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

CPC ***A01G 31/02*** (2013.01); ***A61L 2/0088*** (2013.01); ***C25B 1/22*** (2013.01); *A61L 2202/15* (2013.01); *A61L 2101/20* (2020.08)

(57) **ABSTRACT**

An indoor gardening appliance includes a grow module positioned within a grow chamber for receiving one or more plant pods. The indoor gardening system includes a hydration and sanitization system that includes a water supply for providing a flow of water into a mixing tank that is periodically discharged through a discharge nozzle to hydrate and provide nutrients to plants. A sanitization assembly includes an electrolytic hypochlorous acid generator that is fluidly coupled to the mixing tank for selectively generating hypochlorous acid that helps sanitize plants within the grow chamber.

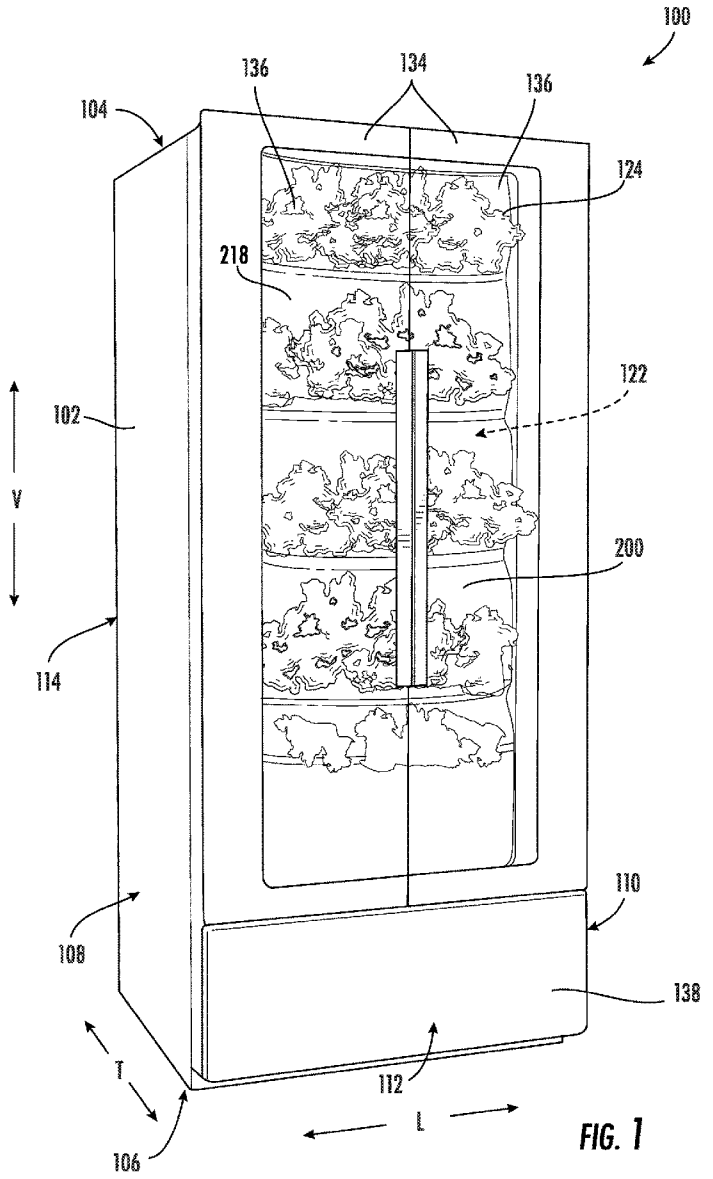

FIG. 1

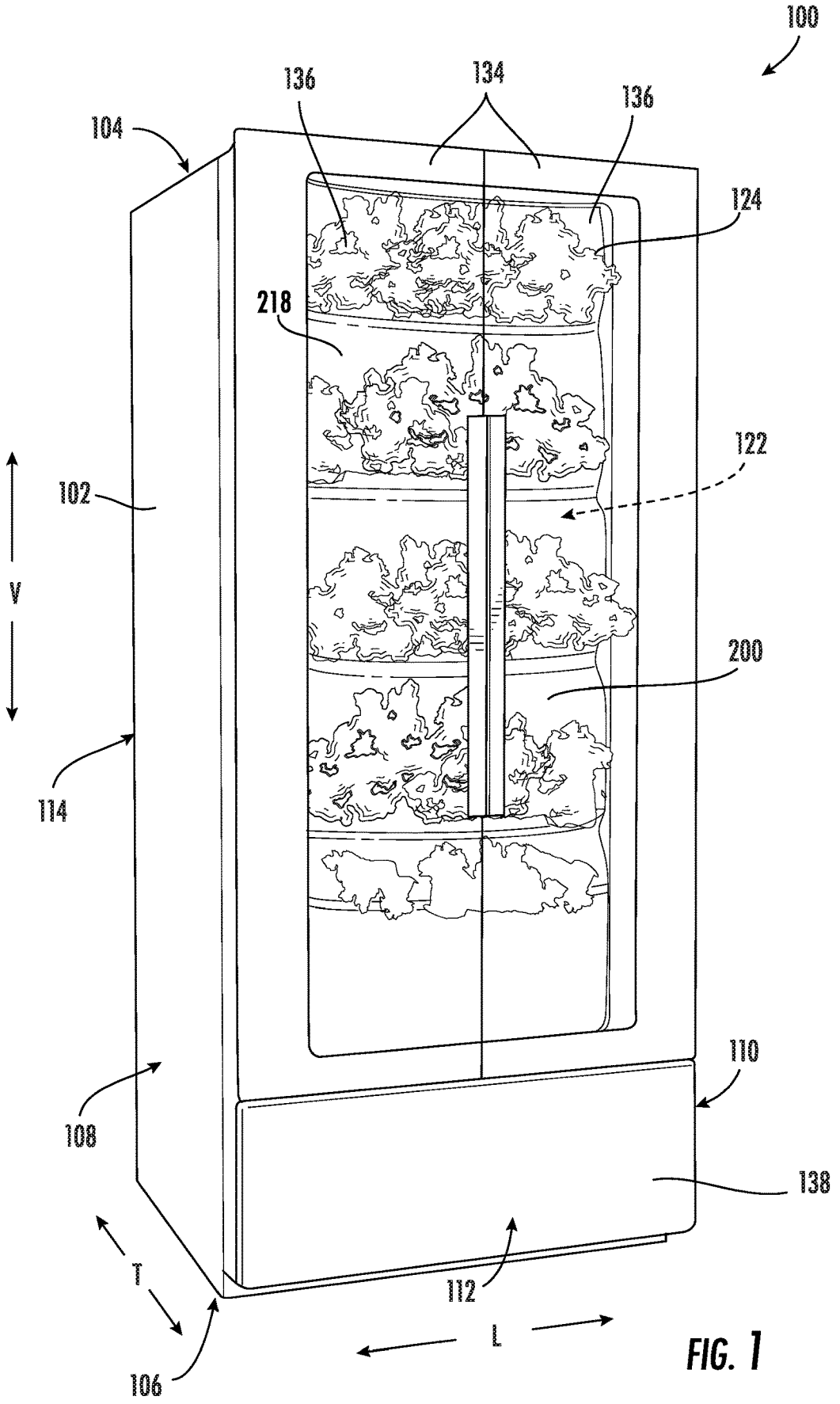
100
136
134
136
104
124
218
122
102
V
200
114
110
108
138
T
112
L
106

FIG. 1

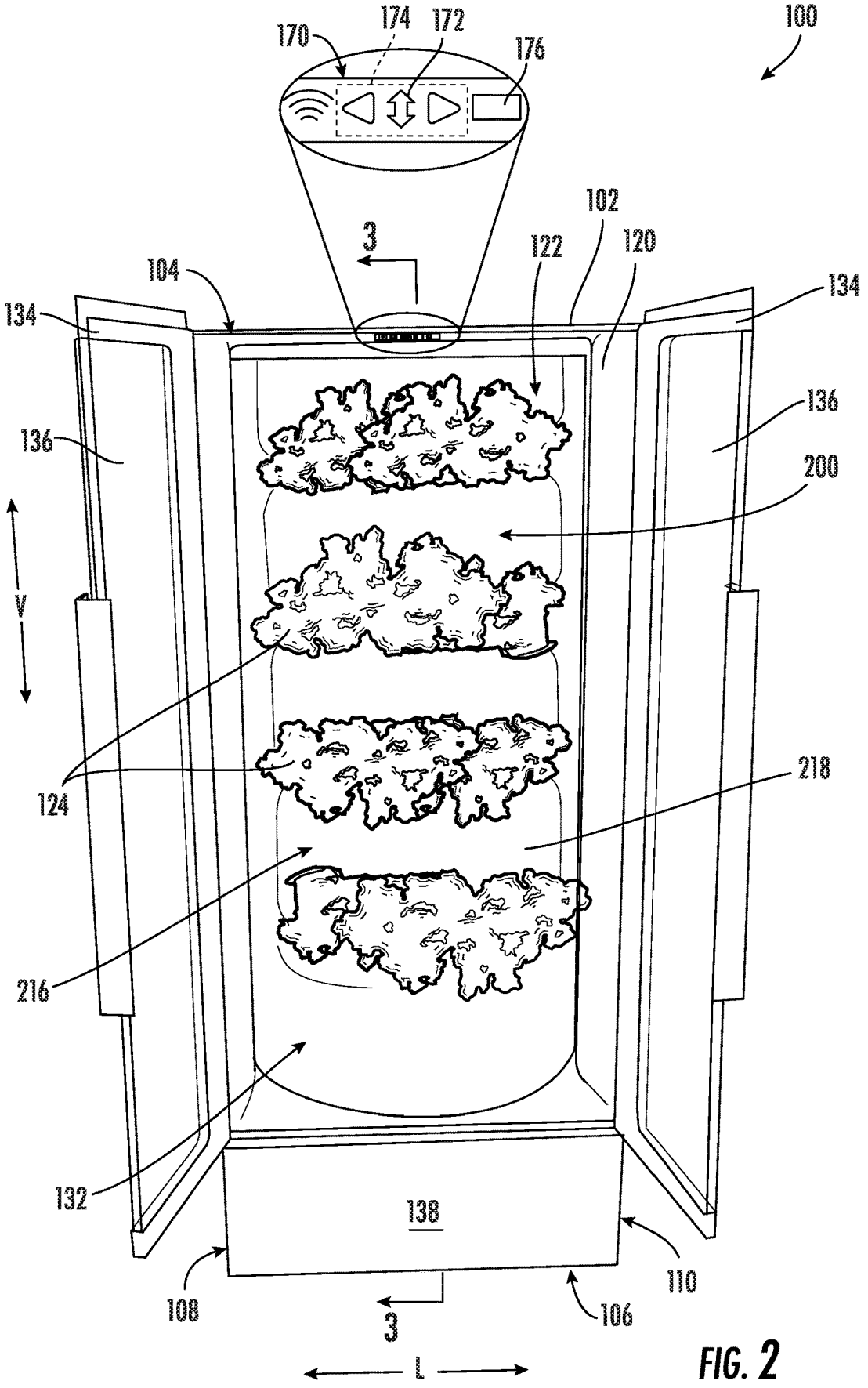
100
170
174
172
176
102
3
122
120
104
134
134
136
136
200
V
124
218
216
132
138
110
108
106
3
L

FIG. 2

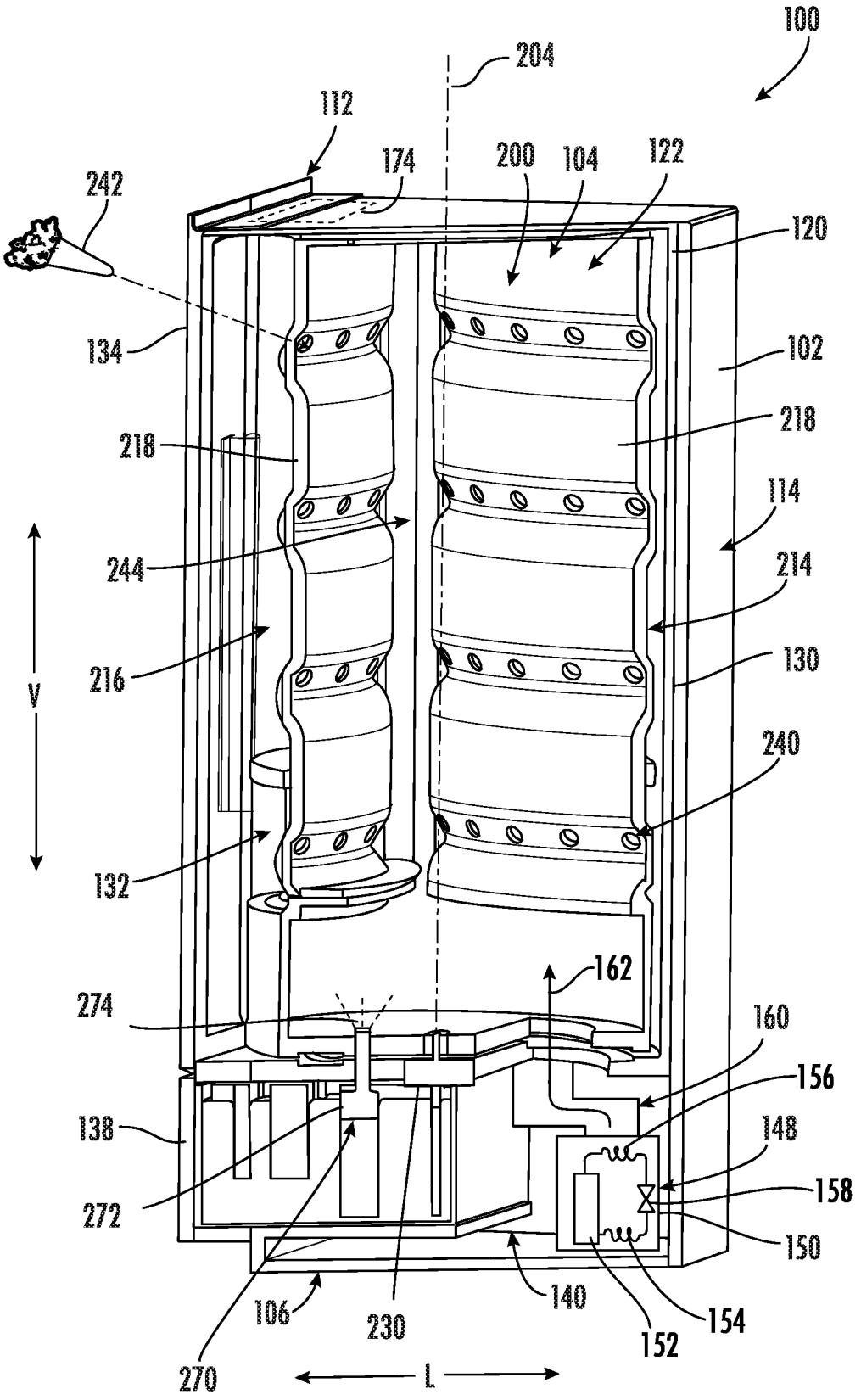
100
204
112
174
200
104
122
242
120
134
102
218
218
114
244
214
216
130
V
240
132
162
274
160
156
138
148
158
272
150
106
230
140
154
152
270
L

FIG. 3

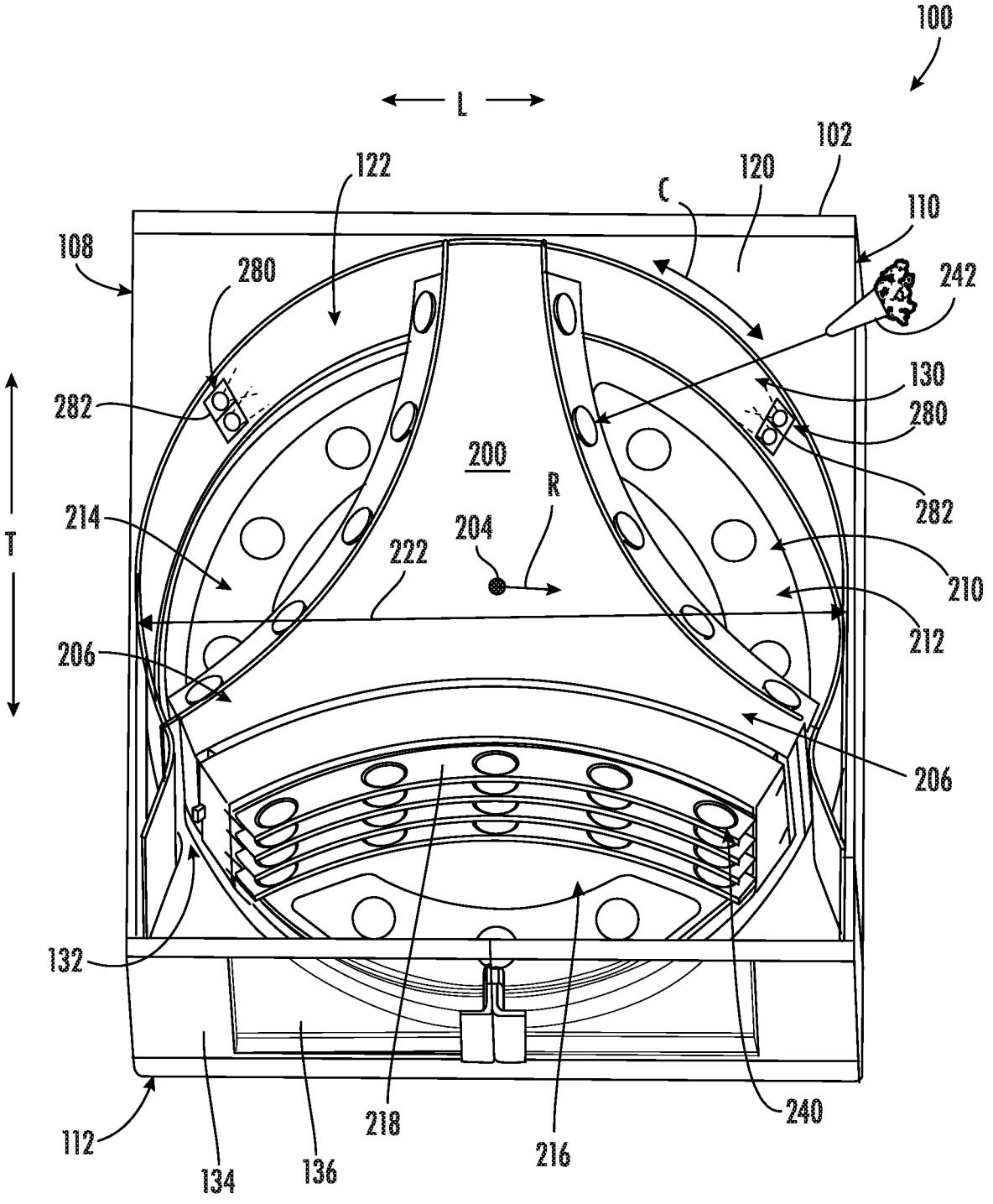
100
L
102
122
120
C
110
108
280
242
130
282
280
200
R
214
204
282
T
222
210
212
206
206
132
112
134
136
218
216
240

FIG. 4

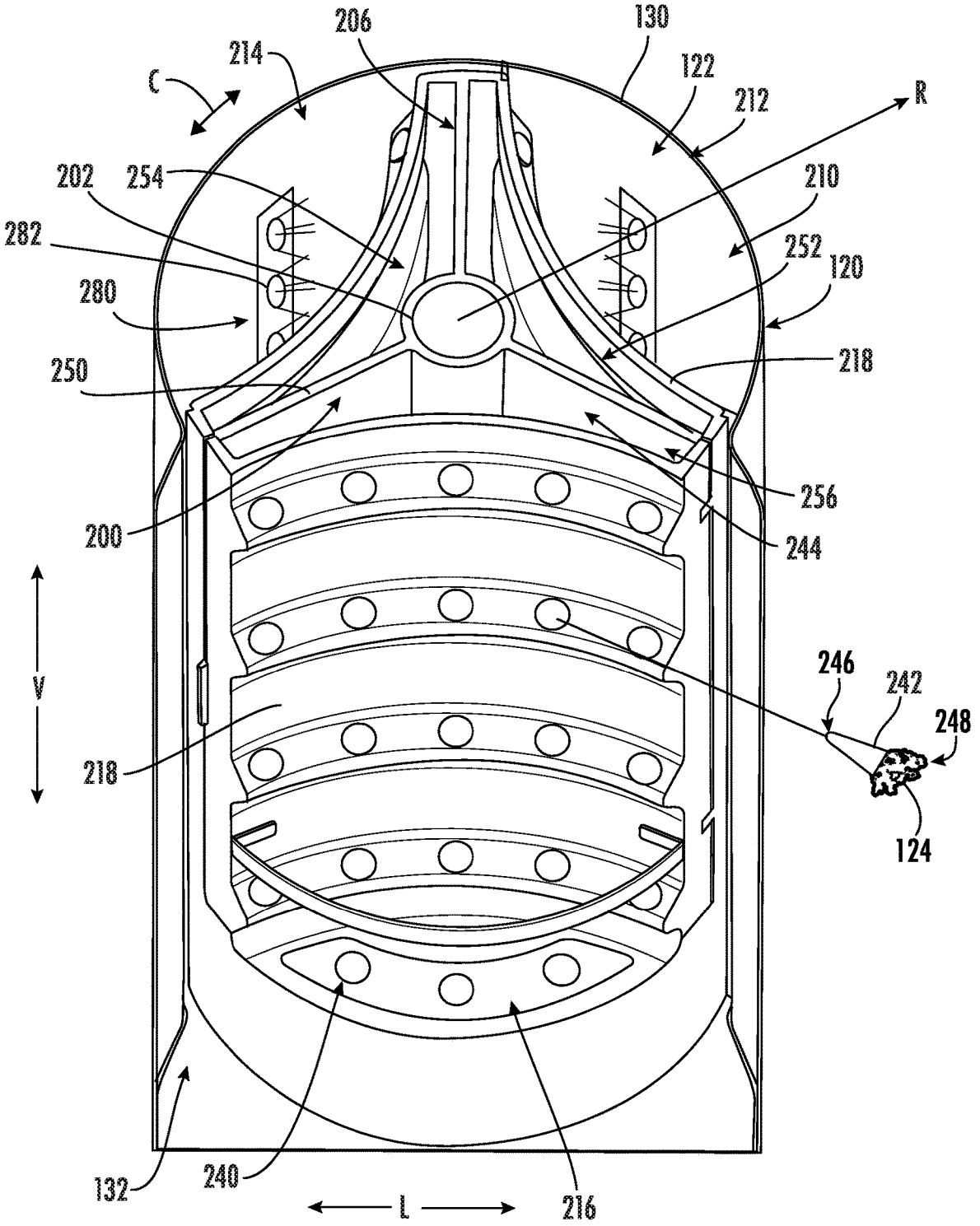
206
130
214
122
C
212
R
202
254
210
282
252
120
280
218
250
256
200
244
246
242
V
248
218
124
132
240
L
216

FIG. 5

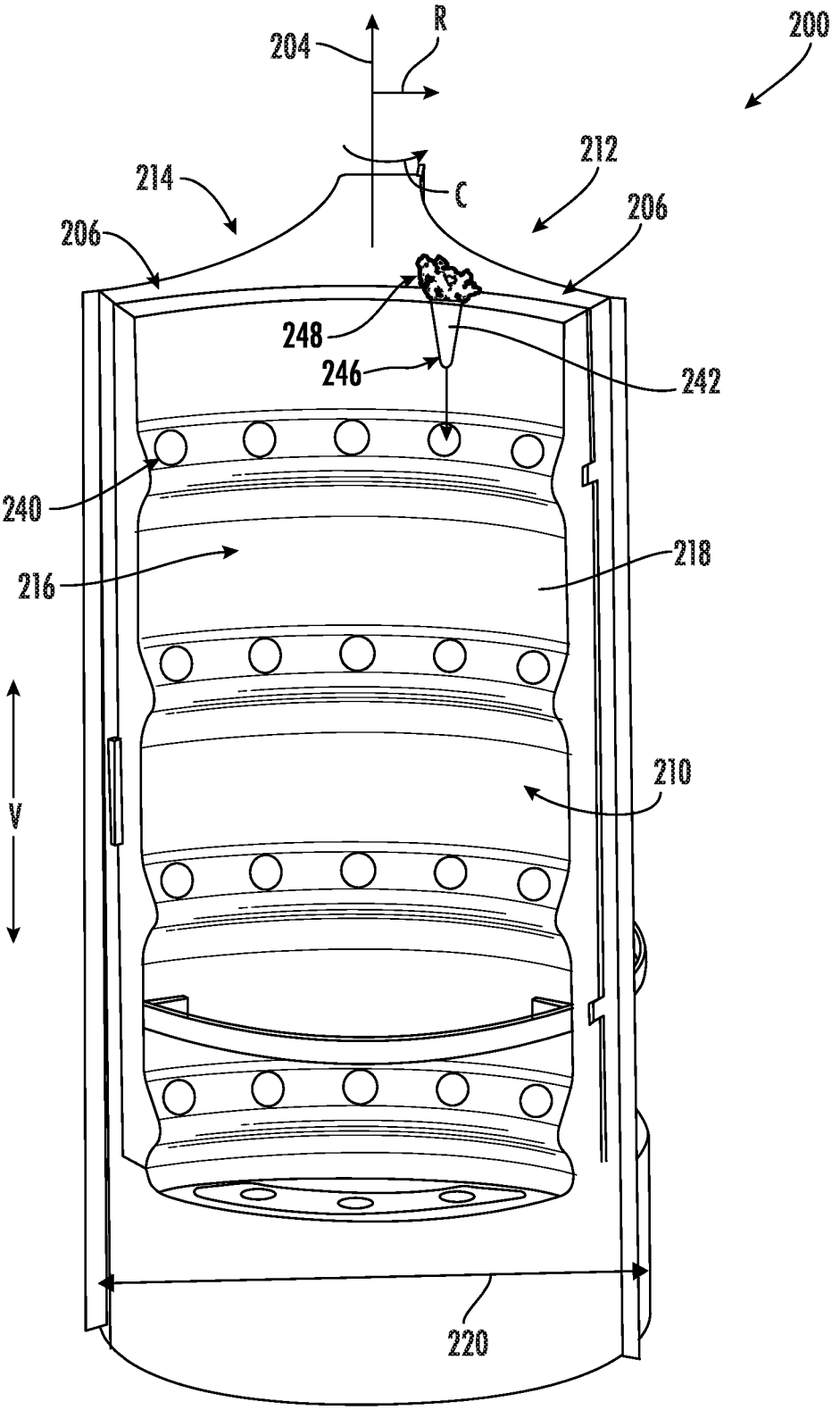

FIG. 6

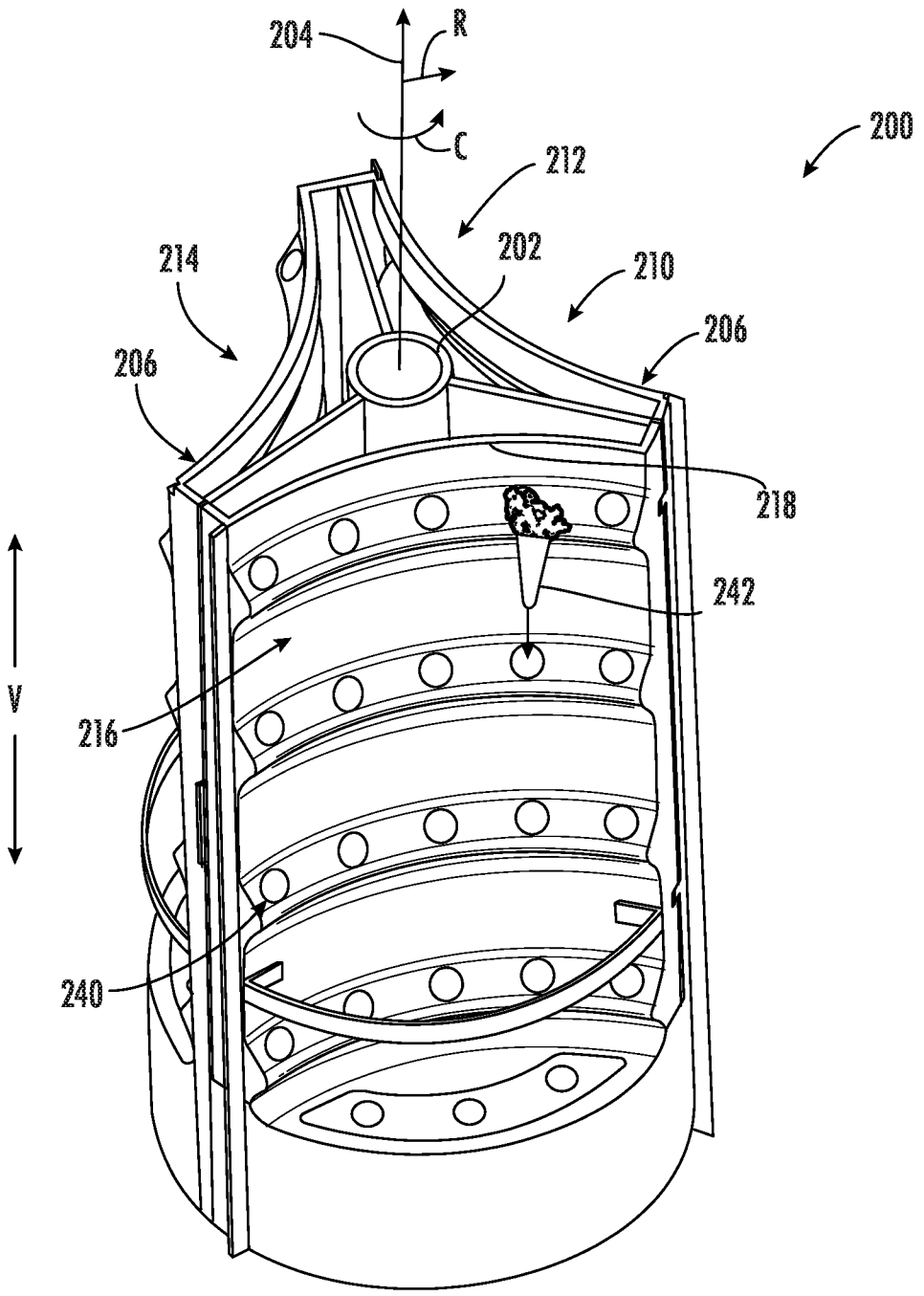

FIG. 7

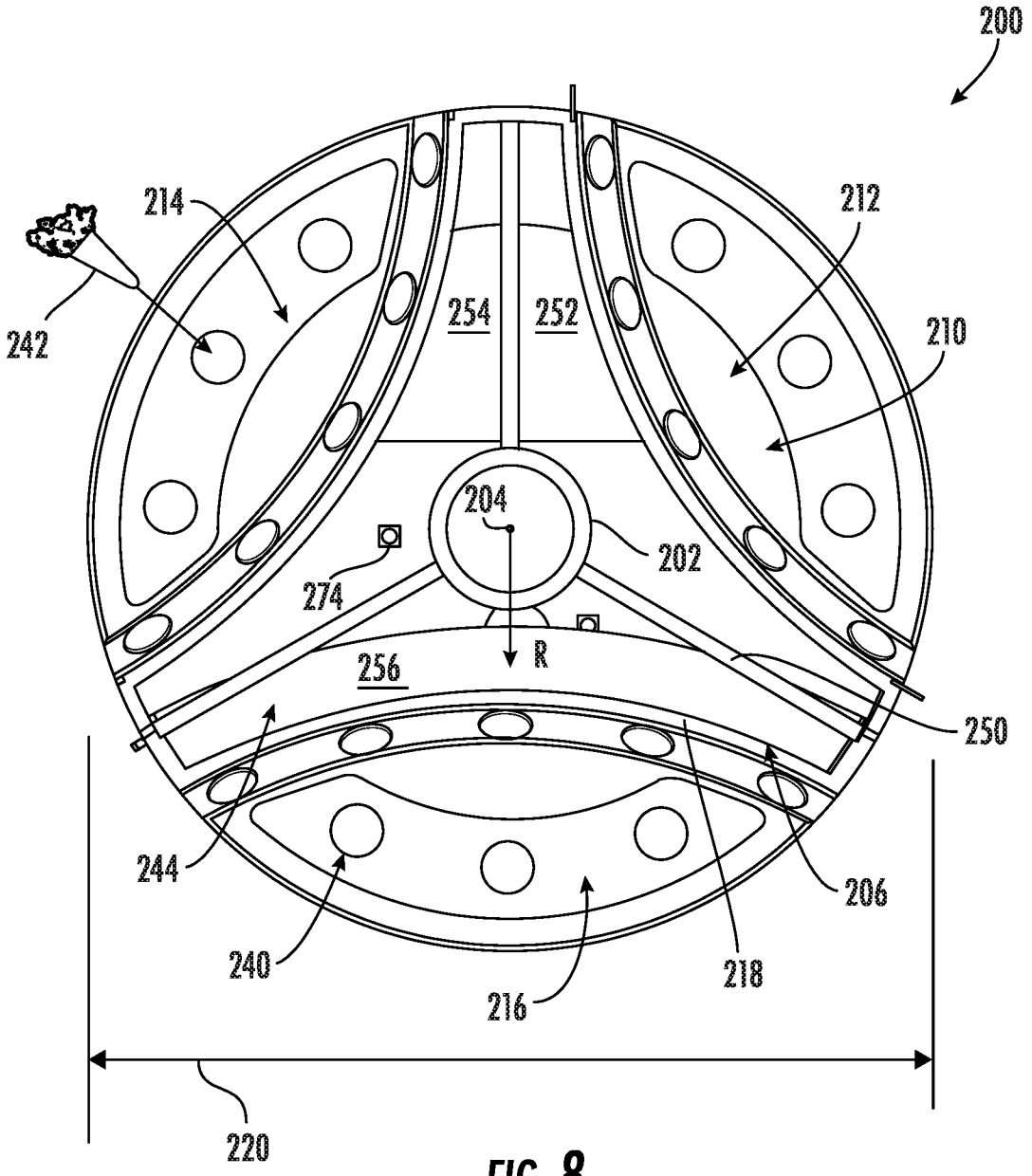
200
214
212
242
254
252
210
204
202
274
R
256
250
244
206
240
218
216
220

FIG. 8

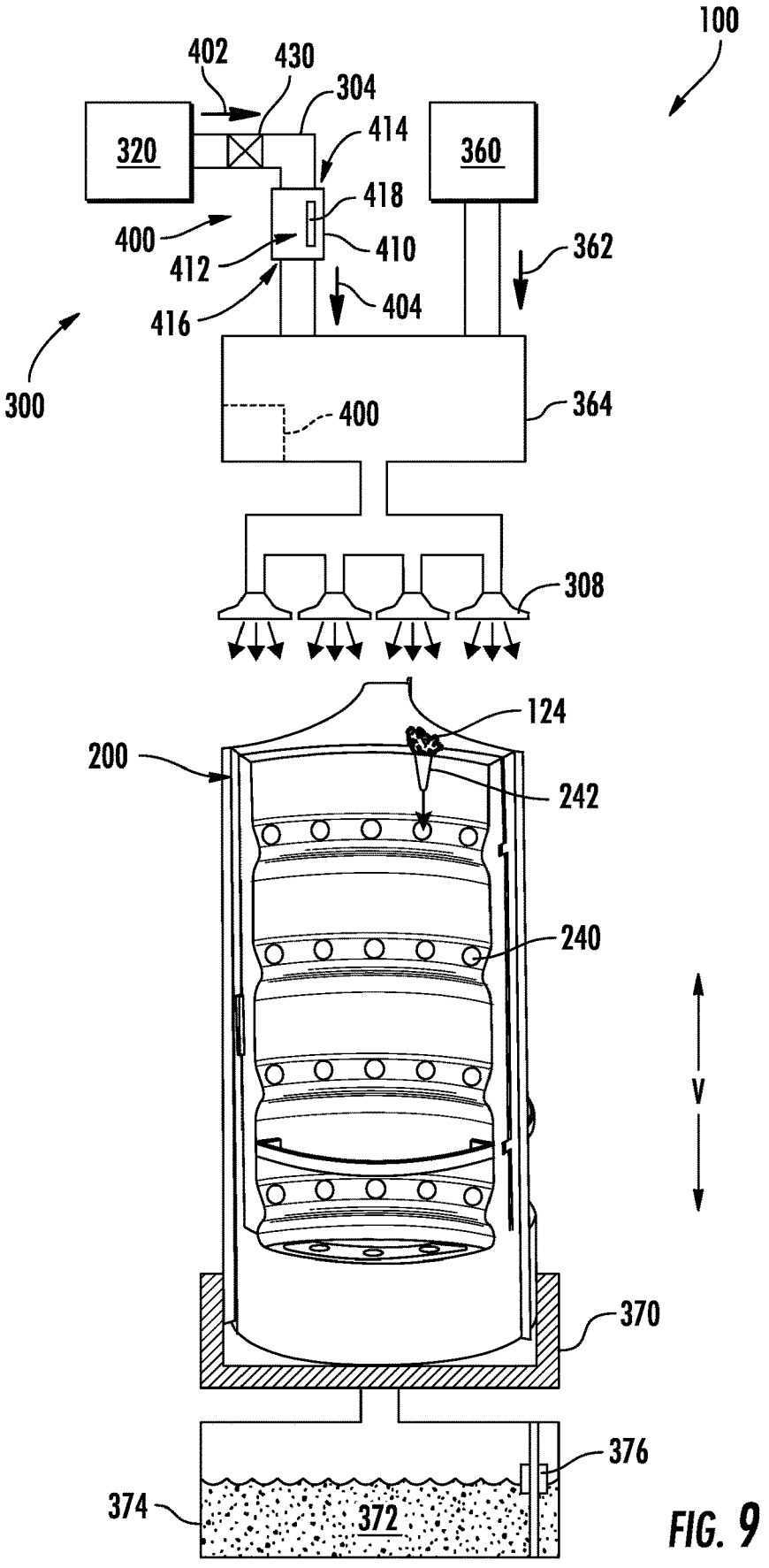
100
402
430
304
320
360
414
418
400
410
412
362
416
404
300
400
364
308
124
200
242
240
V
370
376
374
372

FIG. 9

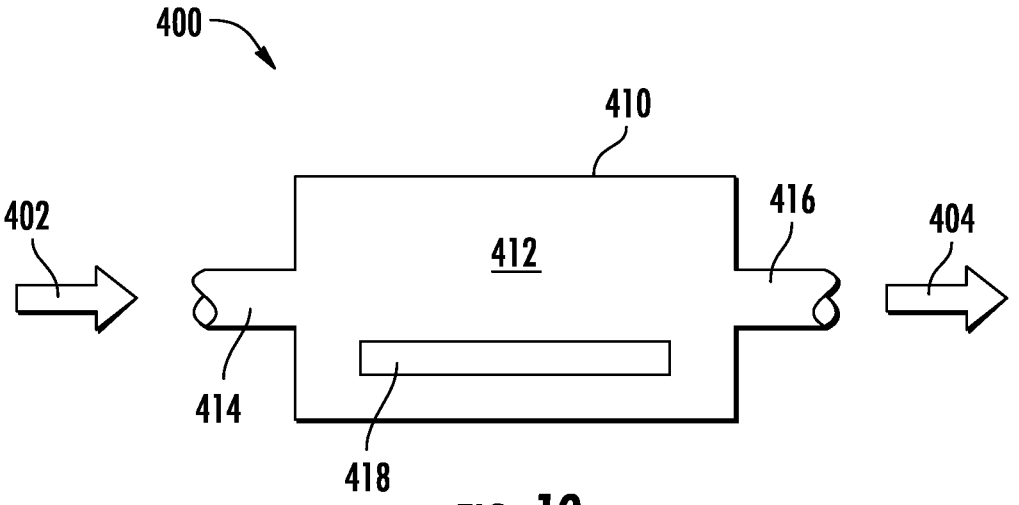
400
410
402
412
416
404
414
418

FIG. 10

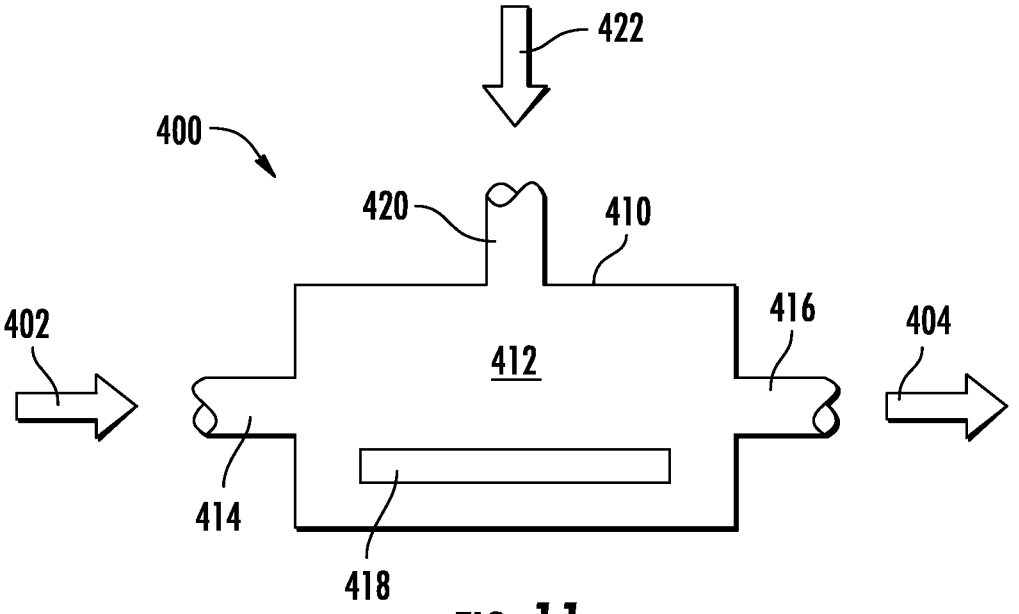
422
400
420
410
402
412
416
404
414
418

FIG. 11

HYDRATION AND SANITIZATION SYSTEM FOR AN INDOOR GARDENING APPLIANCE

FIELD OF THE INVENTION

[0001] The present subject matter relates generally to systems for gardening plants indoors, and more particularly, to systems and methods for hydrating and sanitizing plants within an indoor gardening appliance.

BACKGROUND OF THE INVENTION

[0002] Conventional indoor garden centers include a cabinet defining a grow chamber having a number of trays or racks positioned therein to support seedlings or plant material, e.g., for growing herbs, vegetables, or other plants in an indoor environment. In addition, such indoor garden centers may include an environmental control system that maintains the growing chamber at a desired temperature or humidity. Certain indoor garden centers may also include hydration systems for watering the plants and/or artificial lighting systems that provide the light necessary for such plants to grow.

[0003] Notably, plants positioned within conventional indoor gardens centers may frequently be contaminated by an external source, resulting in the buildup of bacteria, germs, fungus, etc. For example, a user may frequently interact with and contact growing plants with their hands that are contaminated with various germs and bacteria. Certain conventional indoor gardening appliances may include internal cleaning procedures or systems, but these systems commonly rely on harsh chemicals, ozone generation systems, or other sanitization sources that may be hazardous to humans, whether through direct exposure or secondary exposure by consuming plants sanitized using such sanitization sources.

[0004] Accordingly, an improved indoor garden center would be useful. More particularly, an indoor garden center with a hydration and sanitization system that facilitates improved plant growth in a sanitized environment would be particularly beneficial.

BRIEF DESCRIPTION OF THE INVENTION

[0005] Aspects and advantages of the invention will be set forth in part in the following description, or may be apparent from the description, or may be learned through practice of the invention.

[0006] In one exemplary embodiment, an indoor gardening appliance is provided including a liner positioned within a cabinet and defining a grow chamber, a grow module mounted within the liner and defining a plurality of apertures for receiving one or more plant pods, and a sanitization assembly. The sanitization assembly includes a water supply for providing a flow of water, an electrolytic hypochlorous acid generator for receiving the flow of water and generating a hypochlorous acid solution, and a discharge nozzle for selectively discharging the hypochlorous acid solution into the grow chamber.

[0007] In another exemplary embodiment, a hydration system for a gardening appliance is provided. The gardening appliance includes a liner positioned within a cabinet and defining a grow chamber and a grow module mounted within the liner and defining a plurality of apertures for receiving one or more plant pods. The hydration system includes a water supply for providing a flow of water, a mixing tank fluidly coupled to the water supply through a water supply conduit, and a sanitization assembly. The sanitization assembly includes an electrolytic hypochlorous acid generator fluidly coupled to the mixing tank for receiving the flow of water and generating a hypochlorous acid solution and a discharge nozzle for selectively discharging the hypochlorous acid solution into the grow chamber.

[0008] These and other features, aspects and advantages of the present invention will become better understood with reference to the following description and appended claims. The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and, together with the description, serve to explain the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] A full and enabling disclosure of the present invention, including the best mode thereof, directed to one of ordinary skill in the art, is set forth in the specification, which makes reference to the appended figures.

[0010] FIG. **1** provides a perspective view of a gardening appliance according to an exemplary embodiment of the present subject matter.

[0011] FIG. **2** depicts a front view of the exemplary gardening appliance of FIG. **1** with the doors open according to an exemplary embodiment of the present subject matter.

[0012] FIG. **3** is a cross sectional view of the exemplary gardening appliance of FIG. **1**, taken along Line **3-3** from FIG. **2** with an internal divider removed for clarity.

[0013] FIG. **4** is a top perspective view of the exemplary gardening appliance of FIG. **1**, with the top panel of the cabinet removed to reveal a rotatable grow module according to an exemplary embodiment of the present subject matter.

[0014] FIG. **5** provides a perspective cross sectional view of the exemplary gardening appliance of FIG. **1** according to another exemplary embodiment of the present subject matter.

[0015] FIG. **6** provides a perspective view of the grow module of the exemplary gardening appliance of FIG. **1** according to another exemplary embodiment of the present subject matter.

[0016] FIG. **7** provides a perspective cross sectional view of the exemplary grow module of FIG. **6** according to another exemplary embodiment of the present subject matter.

[0017] FIG. **8** provides a top cross-sectional view of the exemplary grow module of FIG. **6** according to another exemplary embodiment of the present subject matter.

[0018] FIG. **9** provides a schematic view of a hydration and sanitization system of the exemplary gardening appliance of FIG. **1** according to an exemplary embodiment of the present subject matter.

[0019] FIG. **10** provides a schematic view of an electrolytic hypochlorous acid generator according to one or more embodiments of the present disclosure.

[0020] FIG. **11** provides a schematic view of an electrolytic hypochlorous acid generator according to one or more additional embodiments of the present disclosure.

[0021] Repeat use of reference characters in the present specification and drawings is intended to represent the same or analogous features or elements of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0022] Reference now will be made in detail to embodiments of the invention, one or more examples of which are illustrated in the drawings. Each example is provided by way of explanation of the invention, not limitation of the invention. In fact, it will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the scope or spirit of the invention. For instance, features illustrated or described as part of one embodiment can be used with another embodiment to yield a still further embodiment. Thus, it is intended that the present invention covers such modifications and variations as come within the scope of the appended claims and their equivalents.

[0023] As used herein, terms of approximation, such as "approximately," "substantially," or "about," refer to being within a ten percent (10%) margin of error of the stated value. Moreover, as used herein, the terms "first," "second," and "third" may be used interchangeably to distinguish one component from another and are not intended to signify location or importance of the individual components. The terms "upstream" and "downstream" refer to the relative direction with respect to fluid flow in a fluid pathway. For example, "upstream" refers to the direction from which the fluid flows, and "downstream" refers to the direction to which the fluid flows.

[0024] FIG. **1** provides a front view of a gardening appliance **100** according to an exemplary embodiment of the present subject matter. According to exemplary embodiments, gardening appliance **100** may be used as an indoor garden center for growing plants. It should be appreciated that the embodiments described herein are intended only for explaining aspects of the present subject matter. Variations and modifications may be made to gardening appliance **100** while remaining within the scope of the present subject matter.

[0025] Gardening appliance **100** includes a housing or cabinet **102** that extends between a top **104** and a bottom **106** along a vertical direction V, between a first side **108** and a second side **110** along a lateral direction L, and between a front side **112** and a rear side **114** along a transverse direction T. Each of the vertical direction V, lateral direction L, and transverse direction T are mutually perpendicular to one another and form an orthogonal direction system.

[0026] Gardening appliance **100** may include an insulated liner **120** positioned within cabinet **102**. Liner **120** may at least partially define a temperature controlled chamber, referred to herein generally as a grow chamber **122**, within which plants **124** may be grown. Although gardening appliance **100** is referred to herein as growing plants **124**, it should be appreciated that other organisms or living things may be grown or stored in gardening appliance **100**. For example, algae, fungi (e.g., including mushrooms), or other living organisms may be grown or stored in gardening appliance **100**. The specific application described herein is not intended to limit the scope of the present subject matter.

[0027] Cabinet **102**, or more specifically, liner **120** may define a substantially enclosed back region or portion **130**. In addition, cabinet **102** and liner **120** may define a front opening, referred to herein as front display opening **132**, through which a user of gardening appliance **100** may access grow chamber **122**, e.g., for harvesting, planting, pruning, or otherwise interacting with plants **124**. According to an exemplary embodiment, enclosed back portion **130** may be defined as a portion of liner **120** that defines grow chamber **122** proximate rear side **114** of cabinet **102**. In addition, front display opening **132** may generally be positioned proximate or coincide with front side **112** of cabinet **102**.

[0028] Gardening appliance **100** may further include one or more doors **134** that are rotatably mounted to cabinet **102** for providing selective access to grow chamber **122**. For example, FIG. **1** illustrates doors **134** in the closed position such that they may help insulate grow chamber **122**. By contrast, FIG. **2** illustrates doors **134** in the open positioned for accessing grow chamber **122** and plants **124** stored therein. Doors **134** may further include a transparent window **136** through which a user may observe plants **124** without opening doors **134**.

[0029] Although doors **134** are illustrated as being rectangular and being mounted on front side **112** of cabinet **102** in FIGS. **1** and **2**, it should be appreciated that according to alternative embodiments, doors **134** may have different shapes, mounting locations, etc. For example, doors **134** may be curved, may be formed entirely from glass, etc. In addition, doors **134** may have integral features for controlling light passing into and/or out of grow chamber **122**, such as internal louvers, tinting, UV treatments, polarization, etc. One skilled in the art will appreciate that other chamber and door configurations are possible and within the scope of the present invention.

[0030] According to the illustrated embodiment, cabinet **102** further defines a drawer **138** positioned proximate bottom **106** of cabinet **102** and being slidably mounted to cabinet **102** for providing convenient storage for plant nutrients, system accessories, water filters, etc. In addition, behind drawer **138** is a mechanical compartment **140** for receipt of an environmental control system including a sealed system for regulating the temperature within grow chamber **122**, as described in more detail below.

[0031] FIG. **3** provides a schematic view of certain components of an environmental control system **148** that may be used to regulate a temperature within grow chamber **122**. Specifically, environmental control system **148** may include a sealed system **150**, a duct system **160**, and a hydration system **270**, or any other suitable components or subsystems for regulating an environment within grow chamber **122**, e.g., for facilitating improved or regulated growth of plants **124** positioned therein. Specifically, FIG. **3** illustrates sealed system **150** within mechanical compartment **140**. Although an exemplary sealed system is illustrated and described herein, it should be appreciated that variations and modifications may be made to sealed system **150** while remaining within the scope of the present subject matter. For example, sealed system **150** may include additional or alternative components, different ducting configurations, etc.

[0032] As shown, sealed system **150** includes a compressor **152**, a first heat exchanger or evaporator **154** and a second heat exchanger or condenser **156**. As is generally understood, compressor **152** is generally operable to circulate or urge a flow of refrigerant through sealed system **150**, which may include various conduits which may be utilized to flow refrigerant between the various components of sealed system **150**. Thus, evaporator **154** and condenser **156** may be between and in fluid communication with each other and compressor **152**.

[0033] During operation of sealed system **150**, refrigerant flows from evaporator **154** and to compressor **152**, and

compressor **152** is generally configured to direct compressed refrigerant from compressor **152** to condenser **156**. For example, refrigerant may exit evaporator **154** as a fluid in the form of a superheated vapor. Upon exiting evaporator **154**, the refrigerant may enter compressor **152**, which is operable to compress the refrigerant. Accordingly, the pressure and temperature of the refrigerant may be increased in compressor **152** such that the refrigerant becomes a more superheated vapor.

[0034] Condenser **156** is disposed downstream of compressor **152** and is operable to reject heat from the refrigerant. For example, the superheated vapor from compressor **152** may enter condenser **156** and transfer energy to air surrounding condenser **156** (e.g., to create a flow of heated air). In this manner, the refrigerant condenses into a saturated liquid and/or liquid vapor mixture. A condenser fan (not shown) may be positioned adjacent condenser **156** and may facilitate or urge the flow of heated air across the coils of condenser **156** (e.g., from ambient atmosphere) in order to facilitate heat transfer.

[0035] According to the illustrated embodiment, an expansion device or a variable electronic expansion valve **158** may be further provided to regulate refrigerant expansion. During use, variable electronic expansion valve **158** may generally expand the refrigerant, lowering the pressure and temperature thereof. In this regard, refrigerant may exit condenser **156** in the form of high liquid quality/saturated liquid vapor mixture and travel through variable electronic expansion valve **158** before flowing through evaporator **154**. Variable electronic expansion valve **158** is generally configured to be adjustable, e.g., such that the flow of refrigerant (e.g., volumetric flow rate in milliliters per second) through variable electronic expansion valve **158** may be selectively varied or adjusted.

[0036] Evaporator **154** is disposed downstream of variable electronic expansion valve **158** and is operable to heat refrigerant within evaporator **154**, e.g., by absorbing thermal energy from air surrounding the evaporator (e.g., to create a flow of cooled air). For example, the liquid or liquid vapor mixture refrigerant from variable electronic expansion valve **158** may enter evaporator **154**. Within evaporator **154**, the refrigerant from variable electronic expansion valve **158** receives energy from the flow of cooled air and vaporizes into superheated vapor and/or high quality vapor mixture. An air handler or evaporator fan (not shown) is positioned adjacent evaporator **154** and may facilitate or urge the flow of cooled air across evaporator **154** in order to facilitate heat transfer. From evaporator **154**, refrigerant may return to compressor **152** and the vapor-compression cycle may continue.

[0037] As explained above, environmental control system **148** includes a sealed system **150** for providing a flow of heated air or a flow cooled air throughout grow chamber **122** as needed. To direct this air, environmental control system **148** includes a duct system **160** for directing the flow of temperature regulated air, identified herein simply as flow of air **162** (see, e.g., FIG. **3**). In this regard, for example, an evaporator fan can generate a flow of cooled air as the air passes over evaporator **154** and a condenser fan can generate a flow of heated air as the air passes over condenser **156**.

[0038] These flows of air **162** are routed through a cooled air supply duct and/or a heated air supply duct (not shown), respectively. In this regard, it should be appreciated that environmental control system **148** may generally include a plurality of ducts, dampers, diverter assemblies, and/or air handlers to facilitate operation in a cooling mode, in a heating mode, in both a heating and cooling mode, or any other mode suitable for regulating the environment within grow chamber **122**. It should be appreciated that duct system **160** may vary in complexity and may regulate the flows of air from sealed system **150** in any suitable arrangement through any suitable portion of grow chamber **122**.

[0039] Gardening appliance **100** may include a control panel **170**. Control panel **170** includes one or more input selectors **172**, such as e.g., knobs, buttons, push buttons, touchscreen interfaces, etc. In addition, input selectors **172** may be used to specify or set various settings of gardening appliance **100**, such as e.g., settings associated with operation of sealed system **150**. Input selectors **172** may be in communication with a processing device or controller **174**. Control signals generated in or by controller **174** operate gardening appliance **100** in response to input selectors **172**. Additionally, control panel **170** may include a display **176**, such as an indicator light or a screen. Display **176** is communicatively coupled with controller **174** and may display information in response to signals from controller **174**. Further, as will be described herein, controller **174** may be communicatively coupled with other components of gardening appliance **100**, such as e.g., one or more sensors, motors, or other components.

[0040] As used herein, "processing device" or "controller" may refer to one or more microprocessors or semiconductor devices and is not restricted necessarily to a single element. The processing device can be programmed to operate gardening appliance **100**. The processing device may include, or be associated with, one or more memory elements (e.g., non-transitory storage media). In some such embodiments, the memory elements include electrically erasable, programmable read only memory (EEPROM). Generally, the memory elements can store information accessible processing device, including instructions that can be executed by processing device. Optionally, the instructions can be software or any set of instructions and/or data that when executed by the processing device, cause the processing device to perform operations.

[0041] Referring now generally to FIGS. **1** through **8**, gardening appliance **100** generally includes a rotatable carousel, referred to herein as a grow module **200** that is mounted within liner **120**, e.g., such that it is within grow chamber **122**. As illustrated, grow module **200** includes a central hub **202** that extends along and is rotatable about a central axis **204**. Specifically, according to the illustrated embodiment, central axis **204** is parallel to the vertical direction V. However, it should be appreciated that central axis **204** could alternatively extend in any suitable direction, e.g., such as the horizontal direction. In this regard, grow module **200** generally defines an axial direction, i.e., parallel to central axis **204**, a radial direction R that extends perpendicular to central axis **204**, and a circumferential direction C that extends around central axis **204** (e.g. in a plane perpendicular to central axis **204**).

[0042] Grow module **200** may further include a plurality of partitions **206** that extend from central hub **202** substantially along the radial direction R. In this manner, grow module **200** defines a plurality of chambers, referred to herein generally by reference numeral **210**, by dividing or partitioning grow chamber **122**. Referring specifically to a first embodiment of grow module **200** illustrated in FIGS. **1**

through **8**, grow module **200** includes three partitions **206** to define a first chamber **212**, a second chamber **214**, and a third chamber **216**, which are circumferentially spaced relative to each other. In general, as grow module **200** is rotated within grow chamber **122**, the plurality of chambers **210** define substantially separate and distinct growing environments, e.g., for growing plants **124** having different growth needs.

[0043] More specifically, partitions **206** may extend from central hub **202** to a location immediately adjacent liner **120**. Although partitions **206** are described as extending along the radial direction, it should be appreciated that they need not be entirely radially extending. For example, according to the illustrated embodiment, the distal ends of each partition is joined with an adjacent partition using an arcuate wall **218**, which is generally used to support plants **124**.

[0044] Notably, it is desirable according to exemplary embodiments to form a substantial seal between partitions **206** and liner **120**. Therefore, according to an exemplary embodiment, grow module **200** may define a grow module diameter **220** (e.g., defined by its substantially circular footprint formed in a horizontal plane). Similarly, enclosed back portion **130** of liner **120** may be substantially cylindrical and may define a liner diameter **222**. In order to prevent a significant amount of air from escaping between partitions **206** and liner **120**, liner diameter **222** may be substantially equal to or slightly larger than grow module diameter **220**.

[0045] According to still other embodiments, grow module **200** may include one or more sealing elements **224** positioned on a radially distal end of each of partitions **206**. In this regard, sealing elements **224** may extend from partitions **206** toward liner **120** to contact and seal against liner **120**. For example, according to the illustrated embodiment, sealing elements **224** are wiper blades formed from silicone or another suitably resilient material. Thus, as grow module **200** rotates, sealing elements **224** slide against liner **120** to substantially seal each of the plurality of chambers **210**. It should be appreciated that as used herein, the term "substantial seal" and the like is not intended to refer to a perfectly airtight junction. Instead, this term is generally used to refer to an environment which may be regulated independently of adjacent environments to a reasonable degree. For example, if plants **124** and the first chamber **212** prefer a 10° F. increase in temperature relative to plants **124** and second chamber **214**, the substantial seal between these two chambers may facilitate such temperature difference.

[0046] Referring now specifically to FIG. **3**, gardening appliance **100** may further include a motor **230** or another suitable driving element or device for selectively rotating grow module **200** during operation of gardening appliance **100**. In this regard, according to the illustrated embodiment, motor **230** is positioned below grow module **200**, e.g., within mechanical compartment **140**, and is operably coupled to grow module **200** along central axis **204** for rotating grow module **200**.

[0047] As used herein, "motor" may refer to any suitable drive motor and/or transmission assembly for rotating grow module **200**. For example, motor **230** may be a brushless DC electric motor, a stepper motor, or any other suitable type or configuration of motor. For example, motor **230** may be an AC motor, an induction motor, a permanent magnet synchronous motor, or any other suitable type of AC motor. In addition, motor **230** may include any suitable transmission assemblies, clutch mechanisms, or other components.

[0048] According to an exemplary embodiment, motor **230** may be operably coupled to controller **174**, which is programmed to rotate grow module **200** according to predetermined operating cycles, based on user inputs (e.g. via touch buttons **172**), etc. In addition, controller **174** may be communicatively coupled to one or more sensors, such as temperature or humidity sensors, positioned within the various chambers **210** for measuring temperatures and/or humidity, respectively. Controller **174** may then operate motor **230** in order to maintain desired environmental conditions for each of the respective chambers **210**. For example, as will be described in more detail below, gardening appliance **100** includes features for providing certain locations of gardening appliance **100** with light, temperature control, proper moisture, nutrients, and other requirements for suitable plant growth. Motor **230** may be used to position specific chambers **210** where needed to receive such growth requirements.

[0049] According to an exemplary embodiment, such as where three partitions **206** form three chambers **212-216**, controller **174** may operate motor **230** to index grow module **200** sequentially through a number of preselected positions. More specifically, motor **230** may rotate grow module **200** in a counterclockwise direction (e.g. when viewed from a top of grow module **200**) in 120° increments to move chambers **210** between sealed positions and display positions. As used herein, a chamber **210** is considered to be in a "sealed position" when that chamber **210** is substantially sealed between grow module **200** (i.e., central hub **202** and adjacent partitions **206**) and liner **120**. By contrast, a chamber **210** is considered to be in a "display position" when that chamber **210** is at least partially exposed to front display opening **132**, such that a user may access plants **124** positioned within that chamber **210**.

[0050] For example, as illustrated in FIGS. **4** and **5**, first chamber **212** and second chamber **214** are both in a sealed position, whereas third chamber **216** is in a display position. As motor **230** rotates grow module **200** by 120 degrees in the counterclockwise direction, second chamber **214** will enter the display position, while first chamber **212** and third chamber **216** will be in the sealed positions. Motor **230** may continue to rotate grow module **200** in such increments to cycle grow chambers **210** between these sealed and display positions.

[0051] Referring now generally to FIGS. **4** through **8**, grow module **200** will be described in more detail according to an exemplary embodiment of the present subject matter. As shown, grow module **200** defines a plurality of apertures **240** which are generally configured for receiving plant pods **242** into an internal root chamber **244**. Plant pods **242** generally contain seedlings or other material for growing plants positioned within a mesh or other support structure through which roots of plants **124** may grow within grow module **200**. A user may insert a portion of plant pod **242** (e.g., a seed end or root end **246**) having the desired seeds through one of the plurality of apertures **240** into root chamber **244**. A plant end **248** of the plant pod **242** may remain within grow chamber **210** such that plants **124** may grow from grow module **200** such that they are accessible by a user. In this regard, grow module **200** defines root chamber **244**, e.g., within at least one of central hub **202** and the plurality of partitions **206**. As will be explained below, water

and other nutrients may be supplied to the root end **246** of plant pods **242** within root chamber **244**. Notably, apertures **240** may be covered by a flat flapper seal (not shown) to prevent water from escaping root chamber **244** when no plant pod **242** is installed.

[0052] As best shown in FIGS. **5** and **7**, grow module **200** may further include an internal divider **250** that is positioned within root chamber **244** to divide root chamber **244** into a plurality of root chambers, each of the plurality of root chambers being in fluid communication with one of the plurality of grow chambers **210** through the plurality of apertures **240**. More specifically, according to the illustrated embodiment, internal divider **250** may divide root chamber **244** into a first root chamber **252**, a second root chamber **254**, and a third root chamber **256**. According to an exemplary embodiment, first root chamber **252** may provide water and nutrients to plants **124** positioned in the first grow chamber **212**, second root chamber **254** may provide water and nutrients to plants **124** positioned in the second grow chamber **214**, and third root chamber **256** may provide water and nutrients to plants **124** positioned in the third grow chamber **216**. In this manner, environmental control system **148** may control the temperature and/or humidity of each of the plurality of chambers **212-216** and the plurality of root chambers **252-256** independently of each other.

[0053] Environmental control system **148** may further include a hydration system **270** which is generally configured for providing water to plants **124** to support their growth. Specifically, according to the illustrated embodiment, hydration system **270** generally includes a water supply **272** and misting device **274** (e.g., such as a fine mist spray nozzle or nozzles). For example, water supply **272** may be a reservoir containing water (e.g., distilled water) or may be a direct connection municipal water supply. Misting device **274** may be positioned at a bottom of root chamber **244** and may be configured for charging root chamber **244** with mist for hydrating the roots of plants **124**. Alternatively, misting devices **274** may pass through central hub **204** along the vertical direction V and periodically include a nozzle for spraying a mist or water into root chamber **244** or grow chamber **122**. Because various plants **124** may require different amounts of water for desired growth, hydration system **270** may alternatively include a plurality of misting devices **274**, e.g., all coupled to water supply **272**, but being selectively operated to charge each of first root chamber **252**, second root chamber **254**, and third root chamber **256** independently of each other.

[0054] Notably, environmental control system **148** described above is generally configured for regulating the temperature and humidity (e.g., or some other suitable water level quantity or measurement) within one or all of the plurality of chambers **210** and/or root chambers **252-256** independently of each other. In this manner, a versatile and desirable growing environment may be obtained for each and every chamber **210**.

[0055] Referring now for example to FIGS. **4** and **5**, gardening appliance **100** may further include a light assembly **280** which is generally configured for providing light into selected grow chambers **210** to facilitate photosynthesis and growth of plants **124**. As shown, light assembly **280** may include a plurality of light sources **282** stacked in an array, e.g., extending along the vertical direction V. For example, light sources **282** may be mounted directly to liner **120** within grow chamber **122**, or may alternatively be positioned behind liner **120** such that light is projected through a transparent window or light pipe into grow chamber **122**. The position, configuration, and type of light sources **282** described herein are not intended to limit the scope of the present subject matter in any manner.

[0056] Light sources **282** may be provided as any suitable number, type, position, and configuration of electrical light source(s), using any suitable light technology and illuminating in any suitable color. For example, according to the illustrated embodiment, light source **282** includes one or more light emitting diodes (LEDs), which may each illuminate in a single color (e.g., white LEDs), or which may each illuminate in multiple colors (e.g., multi-color or RGB LEDs) depending on the control signal from controller **174**. However, it should be appreciated that according to alternative embodiments, light sources **282** may include any other suitable traditional light bulbs or sources, such as halogen bulbs, fluorescent bulbs, incandescent bulbs, glow bars, a fiber light source, etc.

[0057] According to an exemplary embodiment, light assembly **280** is positioned only within the enclosed back portion **130** of liner **120** such that only grow chambers **210** which are in a sealed position are exposed to light from light sources **282**. Specifically, grow module **200** acts as a physical partition between light assemblies **280** and front display opening **132**. In this manner, as illustrated in FIG. **5**, no light may pass from first chamber **212** or second chamber **214** through grow module **200** and out front display opening **132**. As grow module **200** rotates, two of the three grow chambers **210** will receive light from light assembly **280** at a time. According still other embodiments, a single light assembly may be used to reduce costs, whereby only a single grow chamber **210** will be lit at a single time.

[0058] Gardening appliance **100** and grow module **200** have been described above to explain an exemplary embodiment of the present subject matter. However, it should be appreciated that variations and modifications may be made while remaining within the scope of the present subject matter. For example, according to alternative embodiments, gardening appliance **100** may be a simplified to a two-chamber embodiment with a square liner **120** and a grow module **200** having two partitions **206** extending from opposite sides of central hub **202** to define a first grow chamber and a second grow chamber. According to such an embodiment, by rotating grow module **200** by 180 degrees about central axis **206**, the first chamber may alternate between the sealed position (e.g., facing rear side **114** of cabinet **102**) and the display position (e.g., facing front side **112** of cabinet **102**). By contrast, the same rotation will move the second chamber from the display position to the sealed position.

[0059] According to still other embodiments, gardening appliance **100** may include a three chamber grow module **200** but may have a modified cabinet **102** such that front display opening **132** is wider and two of the three grow chambers **210** are displayed at a single time. Thus, first chamber **212** may be in the sealed position, while second chamber **214** and third chamber **216** may be in the display positions. As grow module **200** is rotated counterclockwise, first chamber **212** is moved into the display position and third chamber **216** is moved into the sealed position.

[0060] Referring now specifically to FIG. **9**, gardening appliance **100** may further include a hydration system **300** that is generally configured for hydrating and/or sanitizing

plants **124** within gardening appliance **100**. In this regard, for example, hydration system **300** may be a part of or may entirely replace a hydration system **270** described above. Although an exemplary configuration and operation of hydration system **300** will be described below, it should be appreciated that variations and modifications may be made to such systems and methods while remaining within the scope of the present subject matter.

[0061] Although hydration system **300** is described herein as being used with gardening appliance **100**, it should be appreciated that aspects of the present subject matter may be applied in any other suitable hydration system. For example, the hydration system **300** described herein may be used to provide hydrating water, nutrition, and/or sanitizing spray in any other suitable application, in any other suitable appliance, etc. In addition, variations and modifications may be made to the exemplary constructions described herein while remaining within the scope of the present subject matter.

[0062] According to the illustrated embodiment, hydration system **300** includes a supply conduit **304** and is generally configured for providing a flow of water and/or other nutrients into grow chamber **122** and/or root chamber **244**. Specifically, hydration system **300** further includes one or more discharge nozzles **308** that are in fluid communication with supply conduit **304** to selectively provide the flow of liquid through discharge nozzles **308** to hydrate and/or sanitize plants **124**. According to an exemplary embodiment, discharge nozzle **308** may be a part of or replace a hydration system **270** as illustrated in FIGS. **1** through **8**. In this regard, discharge nozzle **308** may be equivalent to misting device **274** or may be used in addition to misting device **274**. Although one exemplary configuration of discharge nozzle **308** is described herein, it should be appreciated that discharge nozzle **308** may include any other suitable number, type, configuration, and position of devices for supplying water, hydration, sanitizing spray, nutrients, etc. to plants **124**.

[0063] According to exemplary embodiments, hydration system **300** may further include one or more valves positioned throughout hydration system **300** for regulating the flow of fluid therein. For example, as illustrated in FIG. **9**, hydration system **300** includes a discharge valve **430** that is operably coupled to supply conduit **304** or directly to discharge nozzle **308** for selectively regulating the flow of liquid therethrough. Although a single discharge valve **430** is illustrated as regulating the flow of liquid to all discharge nozzles **308**, it should be appreciated that hydration system **300** may include a plurality of independently adjustable discharge valves that can provide the flow of liquid to specific plants according to specific hydration schedules.

[0064] According to exemplary embodiments, supply conduit **304** may be fluidly coupled to any suitable number and type of fluid supplies to provide water through discharge nozzles **308**. Specifically, according to an exemplary embodiment, hydration system **300** includes a water supply **320** for providing water such as pure tap water, distilled water, or water from any external fluid supply source. For example, water supply **320** may be a municipal water supply that provides a flow of pressurized water. According to still other embodiments, water supply **320** may include any other suitable sources of water, such as a water storage tank that may be filled by a user and that is contained within cabinet **102**. It should be appreciated that water supply **320** may include any suitable pumps, flow regulating valves, or other flow regulating devices needed to regulate the flow of water.

[0065] According to exemplary embodiments, hydration system **300** may further include a nutrient dosing system **360** that is generally configured for facilitating the distribution of nutrient-rich liquid (identified herein generally by reference numeral **362**) throughout gardening appliance **100** for improved plant growth. In this regard, for example, nutrient dosing system **360** may include a nutrient supply and a mixing system that provides a flow of nutrients **362** in the desired concentrations. Nutrient dosing system **360** may include replaceable nutrient cartridges that are filled with nutrients in concentrated form or may receive a nutrient supply from any other suitable location.

[0066] As used herein, the term "nutrients" and the like are intended generally to refer to any substances which facilitate improved growth of plants **124**. For example, according to exemplary embodiments, nutrients may include calcium, magnesium, potassium, sulfur, copper, zinc, boron, molybdenum, iron, cobalt, manganese, phosphorous, and chlorine. Nutrients may also be used to refer to chemicals or substances that can be used to adjust a pH of the flow of liquid, a level of total dissolved solids (TDS), etc. According to alternative embodiments, any other suitable mixture or combination of compositions for encouraging root growth and plant growth may be used while remaining within the scope of the present subject matter.

[0067] Nutrient dosing system **360** may further include features for discharging selected flow rates or volumes of nutrients **362**, such as pumps or discharge mechanisms. According to exemplary embodiments, nutrient dosing system **360** may include a plurality of solenoid-actuated plunger valves, a dedicated pump (e.g., such as a peristaltic pump), or a flow regulating valve that may selectively dispense any desired nutrients, at desired rates, and at desired times. Thus, nutrient dosing system **360** provides any suitable number, type, and combinations of nutrients **362** at any suitable flow rates and volumes for mixing within hydration system **300**. For example, according to exemplary embodiments, nutrient dosing system **360** may include a plurality of flow regulating valves, discharge mechanisms, pumps, and supply nozzles that are all in operative communication with controller **174** of gardening appliance **100**. As such, controller **174** may make informed decisions regarding the desired flow of diluted nutrient mixture based on the type, quality, and position of plants **124** within grow module **200**. For example, controller **174** may regulate the type of nutrients supplied, the nutrient concentrations, which nozzles receive the flow of diluted nutrients, etc. In addition, nutrient dosing system **360** may make other adjustments that facilitate improved plant growth and ecosystem health within gardening appliance **100**.

[0068] According to the illustrated embodiment, hydration system **300** may further include a mixing tank **364** that is generally configured for receiving water from water supply **320** along with nutrients **362** from nutrient dosing system **360**. Mixing tank **364** may include any suitable agitators, stirrers, or other devices for creating a nutrient mixture out of nutrients **362** and water. Although nutrient dosing system **360** is illustrated as being fluidly coupled to hydration system **300** upstream mixing tank **364**, it should be appreciated that nutrient dosing system **360** may be fluidly coupled to hydration system **300** in any other suitable location and in any other suitable manner.

[0069] Referring still to FIG. **9**, in various embodiments, gardening appliance **100** may include a sanitization device or a sanitization assembly **400**, such as a hypochlorous acid (HOCl) generator. Those of ordinary skill in the art will recognize that the HOCl generator **400** may be an electrolytic HOCl generator which catalyzes a reaction with chlorine in the water to produce the HOCl. As may be seen, e.g., in FIG. **9**, the HOCl generator **400** may, in various embodiments, be positioned at any suitable location upstream of grow chamber **122**. For example, according to the illustrated embodiment, HOCl generator may be integrated into hydration system **300** of gardening appliance **100**. In this manner, HOCl generator **400** may be periodically activated to discharge a cleaning solution into grow chamber **122**, as explained in more detail below. It should be appreciated that according to alternative embodiments, HOCl generator **400** may be an independent system from hydration system **300**, e.g., including dedicated water supply conduits, control valves, discharge nozzles, etc.

[0070] Specifically, HOCl generator **400** may be fluidly coupled to a water supply (e.g., such as water supply **320**) for receiving a flow of water (e.g., identified generally in FIG. **9** as flow of water **402**). Specifically, according to the exemplary illustrated embodiment, HOCl generator **400** is integrated into hydration system **300**, and is thus fluidly coupled to water supply **320** through water supply conduit **304**. As will be explained in more detail below, when water **402** is provided to HOCl generator **400**, a hypochlorous acid solution (e.g., identified generally in FIG. **9** by reference numeral **404**) is generated that may be supplied onto plants **124** within grow chamber **122**. As explained above, hypochlorous acid solution **404** may be a mild acidic solution that helps to kill bacteria, germs, fungi, and other potentially harmful or undesirable contaminants introduced onto the plants **124** during the growth process. In addition, the hypochlorous acid solution **404** is not harmful to humans and is safe for user interaction, contact, and consumption.

[0071] The HOCl generator **400** may be coupled to hydration system **300** in any suitable manner for receiving a flow of water (e.g., flow of water **402**) and generating a flow of hypochlorous acid solution **404** upstream of grow chamber **122** for distribution onto plants **124**. For example, as illustrated in solid lines in FIG. **9**, the HOCl generator **400** is fluidly coupled to the water supply conduit **304** upstream of the mixing tank **364**. In this manner, flow of water **402**, whether supplied for hydration purposes, sanitization purposes, or both, passes through the HOCl generator **400** prior to entering mixing tank **364** where it may be mixed with nutrients and distributed into grow chamber **122**. By activating HOCl generator **400** while the flow of water **402** is passing through the HOCl generator **400**, hypochlorous acid may be generated in some concentration to generate hypochlorous acid solution **404**.

[0072] According to an alternative embodiment, as shown in dotted lines in FIG. **9**, the HOCl generator **400** may also be positioned within mixing tank **364**. In this manner, by energizing HOCl generator **400** while water **402** is present within mixing tank **364**, hypochlorous acid may be continually generated. Notably, this configuration may be used to obtain higher concentrations of hypochlorous acid within the hypochlorous acid solution **404** (e.g., as compared to the inline HOCl generator **400** described above), as the HOCl generator **400** has a longer interaction time with the water **402** that is stored at least temporarily within mixing tank **364**.

[0073] Referring now also to FIGS. **10** and **11**, an exemplary HOCl generator **400** will be described according to exemplary embodiments of the present subject matter. As illustrated, the HOCl generator **400** may generally include a body **410** and a reaction chamber **412** defined in and by the body **410**. As mentioned, an inlet **414** may be formed in or directly connected to the body **410** and the inlet **414** may be coupled to a water supply line whereby the flow of cold water **402** enters the electrolytic hypochlorous acid generator **400** from the water supply line at the inlet **414**. In addition, an outlet **416** may be formed in or directly connected to the body **410** and the outlet **416** may be coupled to or positioned within mixing tank **364** for discharging the flow of hypochlorous acid solution **404** at the outlet **416**.

[0074] An electrode **418** may be positioned in the reaction chamber **412** within the body **410**. Thus, as those of ordinary skill in the art will understand, the electrode **418** may be activated, e.g., by providing a current thereto, and when so activated, the electrode **418** initiates or catalyzes a reaction among constituent elements in the flow of cold water **402**, including solutes and other substances therein, such as chlorine, to form or generate HOCl solution **404** within the reaction chamber **412**. The HOCl generator **400** may discharge the HOCl solution **404**, e.g., including water, HOCl, and/or other substances, through outlet **416** downstream of the reaction chamber **412**.

[0075] In particular, some embodiments, e.g., the exemplary embodiment illustrated in FIG. **10**, of the electrolytic HOCl generator **400** include only a single inlet **414** and no other points of ingress or inflow into the reaction chamber **412**, whereas alternative embodiments, e.g., as illustrated in FIG. **11**, include a second inlet **420**. The inlet **414** may be coupled to and/or in fluid communication with a water supply line, whereby the inlet **414** receives a flow of cold water from the water supply line, e.g., directly from the water supply line (FIG. **9**). Thus, in embodiments where the inlet **414** is the only inlet into the reaction chamber **412**, the electrolytic HOCl generator **400** uses chlorine which is already present in the cold water, e.g., a background or baseline chlorine concentration such as residual chlorine from a water treatment system upstream of gardening appliance **100**, to generate the HOCl. In embodiments which include an additional inlet, e.g., inlet **420**, the electrolytic HOCl generator **400** may receive an additive including a reactant which may then used to create additional HOCl.

[0076] As discussed above, in some embodiments, the inlet **414** of the electrolytic hypochlorous acid generator **400** that is coupled to the water supply line is the only inlet into the reaction chamber **412** of the electrolytic hypochlorous acid generator **400**, whereby the reaction which produces the HOCl in the reaction chamber **412** consumes only background chlorine already present in the cold water **402**. In alternative embodiments, e.g., as illustrated in FIG. **11**, the electrolytic HOCl generator **400** may receive an additive, e.g., a reactant, **422** from a reactant supply (e.g., a reservoir, which is not specifically illustrated or described in further detail because the structure and function of reservoirs would be understood by those of ordinary skill in the art) into the reaction chamber **412** which reacts with the cold water and/or adjusts the conditions, such as pH, within the reaction chamber **412** when the electrode **418** is activated, thereby

resulting in a higher concentration of HOCl, e.g., a higher parts per million (ppm) of HOCl, in the flow of HOCl solution **404** in embodiments with multiple inlets into the reaction chamber **412** within the body **410** of the electrolytic HOCl generator **400**.

[0077] For example, the additive **422** may be a compound including table salt, e.g., sodium chloride or NaCl, water (H2O), and a mild acid such as vinegar, e.g., acetic acid or CH3COOH. The pH of the solution (e.g., tap water and additive mixed together) within the reaction chamber **412** correlates to the product of the reaction when the electrode **418** is activated, and the additive may help provide a pH which is high enough to avoid generating chlorine gas (Cl2) and low enough to avoid producing bleach, e.g., sodium hypochlorite (NaOCl or NaClO) and/or hypochlorite ions (OCl— or ClO—), whereby HOCl is generated preferentially to chlorine gas or bleach when the reaction occurs at the desired pH, such as generating at least about 90% HOCl.

[0078] For example, the desired pH may be generally in a range that those of ordinary skill in the art will recognize as being weakly acidic, such as between about 3.0 and about 6.5, such as between about 4.0 and about 5.5. For example, a pH of about 3.0 may result in a production of about 10% Cl2 and about 90% HOCl, whereas a pH of about 6.5 may result in a production of about 10% bleach (hypochlorite ions and/or hypochlorite salt such as sodium hypochlorite) and about 90% HOCl, and pH values between 3.0 and 6.5 may generate at least about 90% HOCl. In particular, a pH of the solution between about 4.0 and about 5.5 may generate about 97% HOCl or higher, such as about 99% HOCl, such as about 100% HOCl (where the stated percentages are relative to other chlorine species, e.g., chlorine gas or bleach, as discussed herein).

[0079] Embodiments which include an additional inlet **420** for receiving additive may advantageously provide stronger disinfection due to the higher ppm of HOCl in the flow of HOCl solution **404**. However, such embodiments may also be more sensitive to the pH of the solution. For example, the higher levels of chlorine provided by the additive may result in generation of undesirable quantities of chlorine gas if the solution is too acidic (pH is too low) or hypochlorite ions if the solution is too basic (pH too high) instead of the desired HOCl. Embodiments which include only the single inlet coupled to the water supply line advantageously provide a simpler structure, not only of the HOCl generator **400** itself, but of the sanitization system overall, e.g., in that the additive reservoir and associated pump or injection system is not required or included in such embodiments. Further, in the single-inlet embodiments although the proportion of chlorine present in the tap water (the flow of cold water **402**) is relatively low, e.g., as compared to the level of chlorine in the additive **422** in other embodiments which include the second inlet **420**, the relatively large volume of the water **402** (again, as compared to the volume of additive **422**) generally provides sufficient total chlorine for sanitizing the laundry appliance.

[0080] As explained above, according to the embodiment illustrated in FIG. **9**, inlet **414** may be fluidly coupled to a source of water, e.g., water supply **320**. For example, as illustrated in FIG. **9**, inlet **414** may be fluidly coupled to water supply conduit **304** (e.g., as shown in solid lines) or may be positioned within mixing tank **364** (e.g., as shown in dotted lines) to circulate water **402** from within mixing tank **364** through HOCl generator **400** to increase a concentration of hypochlorous acid within the HOCl solution **404**.

[0081] According to exemplary embodiments, the flow of water that passes into mixing tank **364** and/or through HOCl generator **400** may be regulated by a valve **430**, as shown schematically in FIG. **9**. For example, valve **430** may be a supply valve and, in at least some embodiments a cold water supply valve. Controller **174** of gardening appliance **100** (or another suitable dedicated controller) may be configured for selectively opening valve **430** to provide the flow of water **402**, e.g., cold water, into gardening appliance **100**. Thus, the valve **430** may be upstream of other components of the gardening appliance **100**, in particular the HOCl generator **400**, such that selective operation of valve **430** and/or HOCl generator **400** may regulate the generation of hypochlorous acid. The structure and function of such valves are understood by those of ordinary skill in the art and, as such, are not shown or described in further detail herein for the sake of brevity and clarity.

[0082] As mentioned, the water which flows through gardening appliance **100** may be or include cold water. Cold water may include water having a temperature based on the water source(s) from which the water is obtained. Further, "cold" water as used herein to include a wide range of temperatures that are not hot. For example, cold water, as used herein, may be between approximately 35 degrees Fahrenheit and approximately 120 degrees Fahrenheit, such as between approximately 40 degrees Fahrenheit and approximately 110 degrees Fahrenheit, such as between approximately 45 degrees Fahrenheit and approximately 100 degrees Fahrenheit, such as between approximately 55 degrees Fahrenheit and approximately 90 degrees Fahrenheit, such as between approximately 65 degrees Fahrenheit and approximately 80 degrees Fahrenheit, such as between approximately 40 degrees Fahrenheit and approximately 60 degrees Fahrenheit, such as approximately 50 degrees Fahrenheit, or approximately 80 degrees Fahrenheit, or approximately 110 degrees Fahrenheit.

[0083] Thus, when the HOCl generator **400** is activated, e.g., by supplying electric power thereto such as in embodiments where the HOCl generator **400** is an electrolytic HOCl generator, the liquid flowing therethrough will include hypochlorous acid (HOCl), such as a solution of water and HOCl **404**. Further, it should be understood that the liquid, e.g., "water," may also include additional constituents, e.g., nutrients, minerals, chemicals, and other substances.

[0084] Referring still to FIG. **9**, hydration system **300** may further include features for collecting, discharging, and/or recirculating the flow of HOCl solution **404** or other liquid within grow chamber **122**. In this regard, plants **124** may not absorb all of the flow of liquid provided from hydration system **300** dispensed from discharge nozzles **308**. Therefore, the excess liquid may drip off of plants **124** and collect at the bottom of gardening appliance **100**. Thus, according to the illustrated embodiment, hydration system **300** includes a sump **370** that is generally configured for collecting liquid (e.g., referred to herein as drainage water **372**) from within grow chamber **122**.

[0085] Hydration system **300** may further include a wastewater reservoir or tank **374** that is fluidly coupled to sump **370** for storing drainage water **372**. According to exemplary embodiments, wastewater reservoir **374** may be removable from gardening appliance **100**, such that a user may periodically empty or drain wastewater reservoir **374** through an

external drain, such as a kitchen sink. According to still other embodiments, wastewater reservoir **374** may be connected to an external drain via a flow regulating valve and/or a drainage pump for periodically or selectively discharging drainage water **372** from wastewater reservoir **374**.

[0086] Notably, in order to prevent overfilling of wastewater reservoir **374**, gardening appliance **100** may include features for ensuring that the available storage capacity of wastewater reservoir **374** is sufficient for storing liquid generated during a sanitization cycle prior to initiation of the sanitization cycle. As such, as best shown in FIG. **9**, wastewater reservoir **374** may further include a water level sensor **376** that is positioned within wastewater reservoir **374** for measuring a level of drainage water **372** therein. In this manner, feedback from water level sensor **376** may be used to determine when a sanitization cycle may be performed without risking the overflow of wastewater reservoir **374**. Level sensor **376** can be any suitable type of sensor, such as a float switch, an optical switch, a capacitance-based level sensor, etc.

[0087] In general, controller **174** of gardening appliance **100** may be configured for regulating operation of HOCl generator **400** and a hydration system **300**. In this regard, controller **174** may be configured to receive a command to commence a sanitation cycle. As used herein, the terms "sanitization cycle" and the like are generally intended to refer to any period of operation when HOCl generator **400** is generating a flow of HOCl solution **404** to facilitate a cleaning or sanitization cycle of plants **124** or other surfaces within gardening appliance **100**.

[0088] According to exemplary embodiments, the command to commence a sanitization cycle may be received from a user of gardening appliance **100**. In this regard, for example, control panel **170** may include a user input **172** that a user may select to initiate a sanitization cycle. According to exemplary embodiments, controller **174** may be in operative communication with a remote device, such as a mobile phone running a software application that may be used to input the command to commence a sanitization cycle. According to alternative embodiments, the command to commence a sanitization cycle may be generated periodically by the controller **174** or may otherwise be operated according to a preprogrammed schedule that may be manipulated by a user, set by a manufacturer, etc. This sanitization cycle is generally intended for maintaining the plants in a clean growing environment within gardening appliance **100**.

[0089] Notably, as displayed above, controller **174** may perform a detection cycle to ensure that the storage capacity within wastewater reservoir **374** is sufficient to store the additional liquid that is generated during a sanitization cycle. As such, when controller receives the command to commence a sanitization cycle, controller **174** may first determine that the storage capacity is sufficient to store the hypochlorous acid that will be generated during the sanitization cycle, e.g., by using the level sensor **376** and the known capacity of wastewater reservoir **374**.

[0090] Once it is determined that there is sufficient capacity to store the excess liquid generated during a sanitization cycle, controller **174** may be programmed to initiate the sanitization cycle, e.g., by opening valve **430** to provide the flow of water **402** into HOCl generator **400**. In addition, controller **174** may energize the electrode **418** or otherwise activate HOCl generator **400** such that hypochlorous acid is generated from the flow of water **402**. This hypochlorous acid and the excess water from flow of water **402** generally form an HOCl solution **404** which is then discharged onto plants **124** in a manner similar to hydration cycles, e.g., via discharge nozzles **308**.

[0091] This written description uses examples to disclose the invention, including the best mode, and also to enable any person skilled in the art to practice the invention, including making and using any devices or systems and performing any incorporated methods. The patentable scope of the invention is defined by the claims, and may include other examples that occur to those skilled in the art. Such other examples are intended to be within the scope of the claims if they include structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal languages of the claims.

What is claimed is:

1. An indoor gardening appliance, comprising:

a liner positioned within a cabinet and defining a grow chamber;

a grow module mounted within the liner and defining a plurality of apertures for receiving one or more plant pods; and

a sanitization assembly comprising:

a water supply for providing a flow of water;

an electrolytic hypochlorous acid generator for receiving the flow of water and generating a hypochlorous acid solution; and

a discharge nozzle for selectively discharging the hypochlorous acid solution into the grow chamber.

2. The indoor gardening appliance of claim **1**, wherein the electrolytic hypochlorous acid generator comprises:

a body defining a reaction chamber, an inlet fluidly coupled to the water supply, and an outlet fluidly coupled to the discharge nozzle; and

an electrode positioned in the reaction chamber.

3. The indoor gardening appliance of claim **2**, wherein the sanitization assembly further comprises:

a valve for regulating the flow of water through the reaction chamber.

4. The indoor gardening appliance of claim **3**, wherein the valve is positioned on a water supply conduit upstream of the electrolytic hypochlorous acid generator.

5. The indoor gardening appliance of claim **3**, further comprising a controller operably coupled to the valve and the electrolytic hypochlorous acid generator, the controller being configured to:

receive a command to commence a sanitization cycle;

open the valve to provide the flow of water into the reaction chamber; and

energize the electrode to generate the hypochlorous acid solution.

6. The indoor gardening appliance of claim **5**, wherein the command to commence the sanitization cycle is generated periodically by the controller.

7. The indoor gardening appliance of claim **5**, further comprising a user interface panel, wherein the command to commence the sanitization cycle is selected by a user through the user interface panel or a software application on a remote device.

8. The indoor gardening appliance of claim **5**, wherein the controller is further configured to:

determine that a wastewater reservoir has storage capacity to store the hypochlorous acid solution generated during the sanitization cycle before commencing the sanitization cycle.

9. The indoor gardening appliance of claim **1**, further comprising a hydration system that comprises the sanitization assembly, the hydration system further comprising:

a mixing tank fluidly coupled to the water supply through a water supply conduit; and

a nutrient dosing system for selectively adding nutrients to the mixing tank for creating a nutrient mixture within the mixing tank.

10. The indoor gardening appliance of claim **9**, wherein the electrolytic hypochlorous acid generator is fluidly coupled to the water supply conduit upstream of the mixing tank.

11. The indoor gardening appliance of claim **9**, wherein the electrolytic hypochlorous acid generator is positioned within the mixing tank.

12. The indoor gardening appliance of claim **9**, wherein the hydration system further comprises:

a sump positioned at a bottom of the grow chamber for collecting drainage water; and

a wastewater reservoir fluidly coupled to the sump for storing the drainage water.

13. The indoor gardening appliance of claim **1**, wherein the water supply comprises a municipal water supply or a water reservoir.

14. A hydration system for a gardening appliance, the gardening appliance comprising a liner positioned within a cabinet and defining a grow chamber and a grow module mounted within the liner and defining a plurality of apertures for receiving one or more plant pods, the hydration system comprising:

a water supply for providing a flow of water;

a mixing tank fluidly coupled to the water supply through a water supply conduit; and

a sanitization assembly comprising:

an electrolytic hypochlorous acid generator fluidly coupled to the mixing tank for receiving the flow of water and generating a hypochlorous acid solution; and

a discharge nozzle for selectively discharging the hypochlorous acid solution into the grow chamber.

15. The hydration system of claim **14**, further comprising:

a nutrient dosing system for selectively adding nutrients to the mixing tank for creating a nutrient mixture within the mixing tank.

16. The hydration system of claim **14**, wherein the electrolytic hypochlorous acid generator comprises:

a body defining a reaction chamber, an inlet fluidly coupled to the water supply, and an outlet fluidly coupled to the discharge nozzle; and

an electrode positioned in the reaction chamber.

17. The hydration system of claim **14**, wherein the electrolytic hypochlorous acid generator is fluidly coupled to the water supply conduit upstream of the mixing tank.

18. The hydration system of claim **14**, wherein the electrolytic hypochlorous acid generator is positioned within the mixing tank.

19. The hydration system of claim **14**, further comprising:

a valve for regulating the flow of water through the electrolytic hypochlorous acid generator.

20. The hydration system of claim **19**, further comprising a controller operably coupled to the valve and the electrolytic hypochlorous acid generator, the controller being configured to:

receive a command to commence a sanitization cycle;

open the valve to provide the flow of water into the electrolytic hypochlorous acid generator; and

operate the electrolytic hypochlorous acid generator to generate the hypochlorous acid solution.

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