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Bennert

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(54) **ICE MACHINE CLEANING SYSTEM AND METHOD OF USE**

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F25D 17/04 (2006.01)

A61L 2/14 (2006.01)

F25C 1/00 (2006.01)

A61L 9/22 (2006.01)

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

CPC **F25D 17/042** (2013.01); **A61L 2/14** (2013.01); **F25C 1/00** (2013.01); **A61L 9/22** (2013.01); **F25C 2400/12** (2013.01); **F25D 2317/0416** (2013.01)

(58) **Field of Classification Search**

CPC .. F25D 17/042; F25D 2317/0416; A61L 2/14; A61L 9/22; F25C 1/00; F25C 2400/12

See application file for complete search history.

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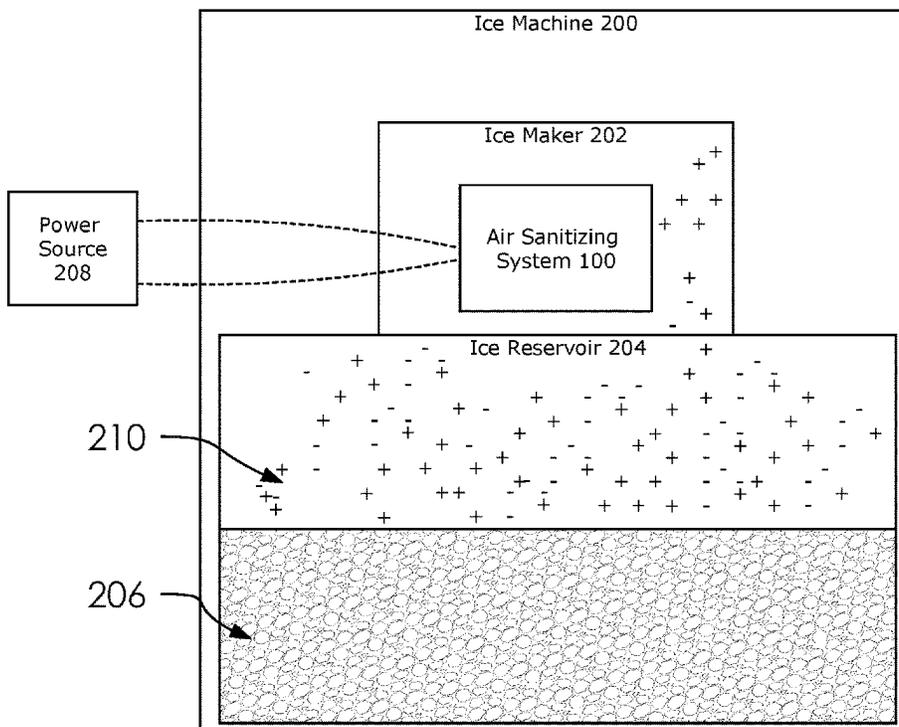
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(57) **ABSTRACT**

An surface sanitizing system for cleaning a portion of an ice machine with a bipolar ions, wherein, said surface sanitizing system comprises a plugs, a power lines, an ion generation power module, a two or more brush cables, a two brushes a brush container and a mounting clip. Said plugs selectively attaches to a power source and provides electricity for running said surface sanitizing system. Said power lines selectively attach said plugs to said ion generation power module. Said two or more brush cables selectively attach said ion generation power module to said two brushes. A female containment portions selectively holds said two brushes within a portion of said brush container. Said two brushes selectively attach to a portion of said two or more brush cables. Said brush container selectively clips into said mounting clip. Said mounting clip selectively attaches to a portion of an ice maker.

9 Claims, 12 Drawing Sheets



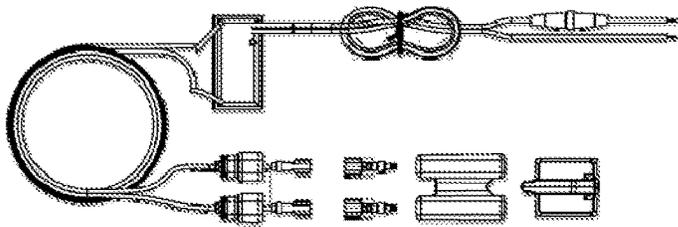
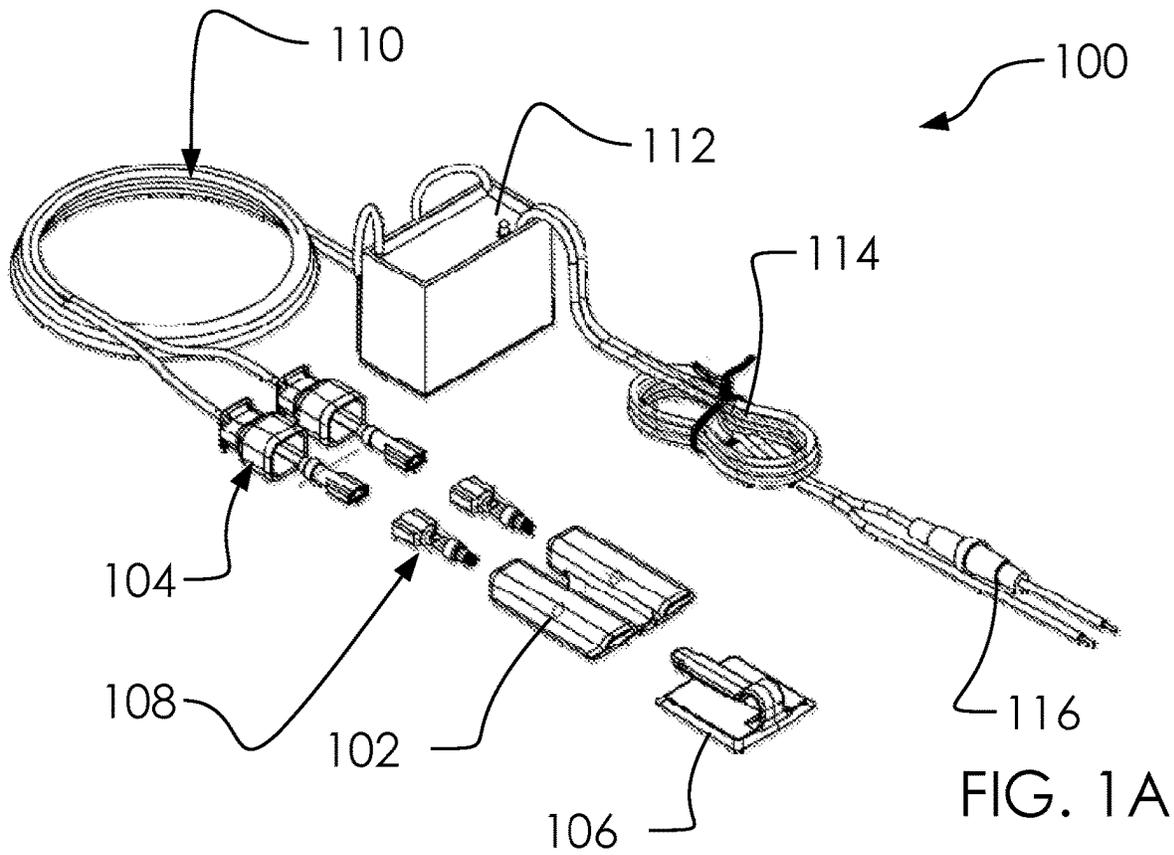


FIG. 1B

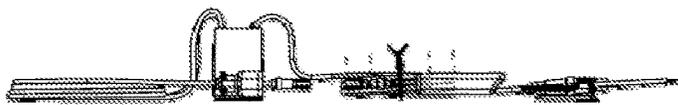


FIG. 1C

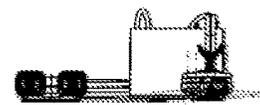


FIG. 1D

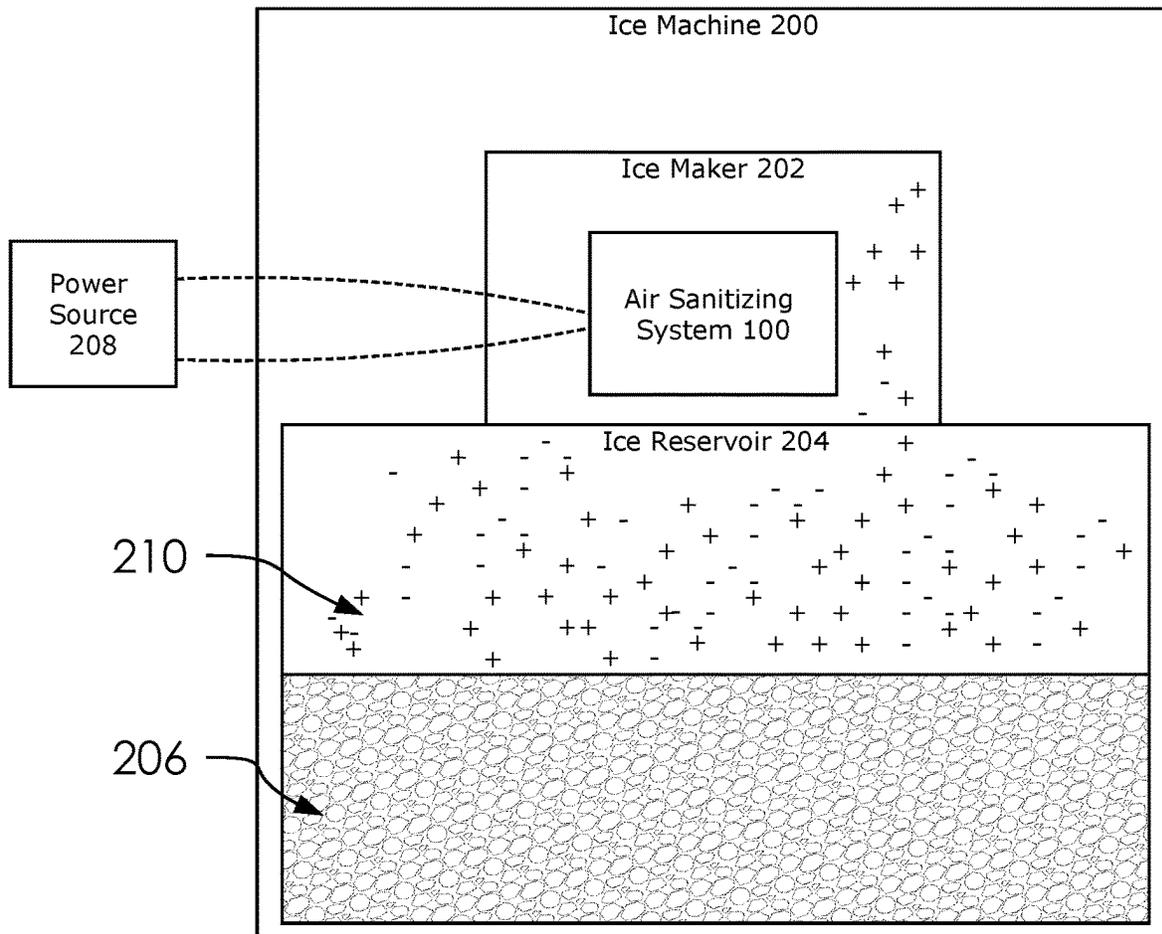


FIG. 2A

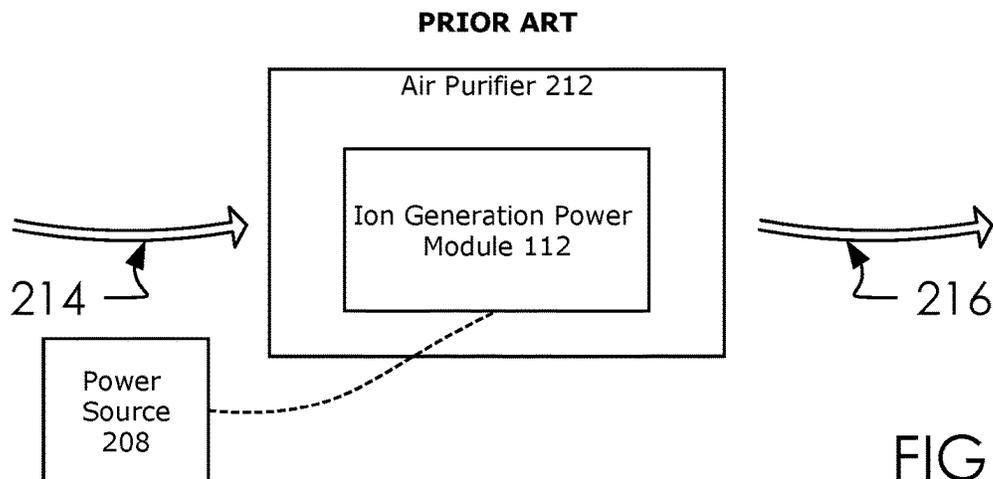


FIG. 2B

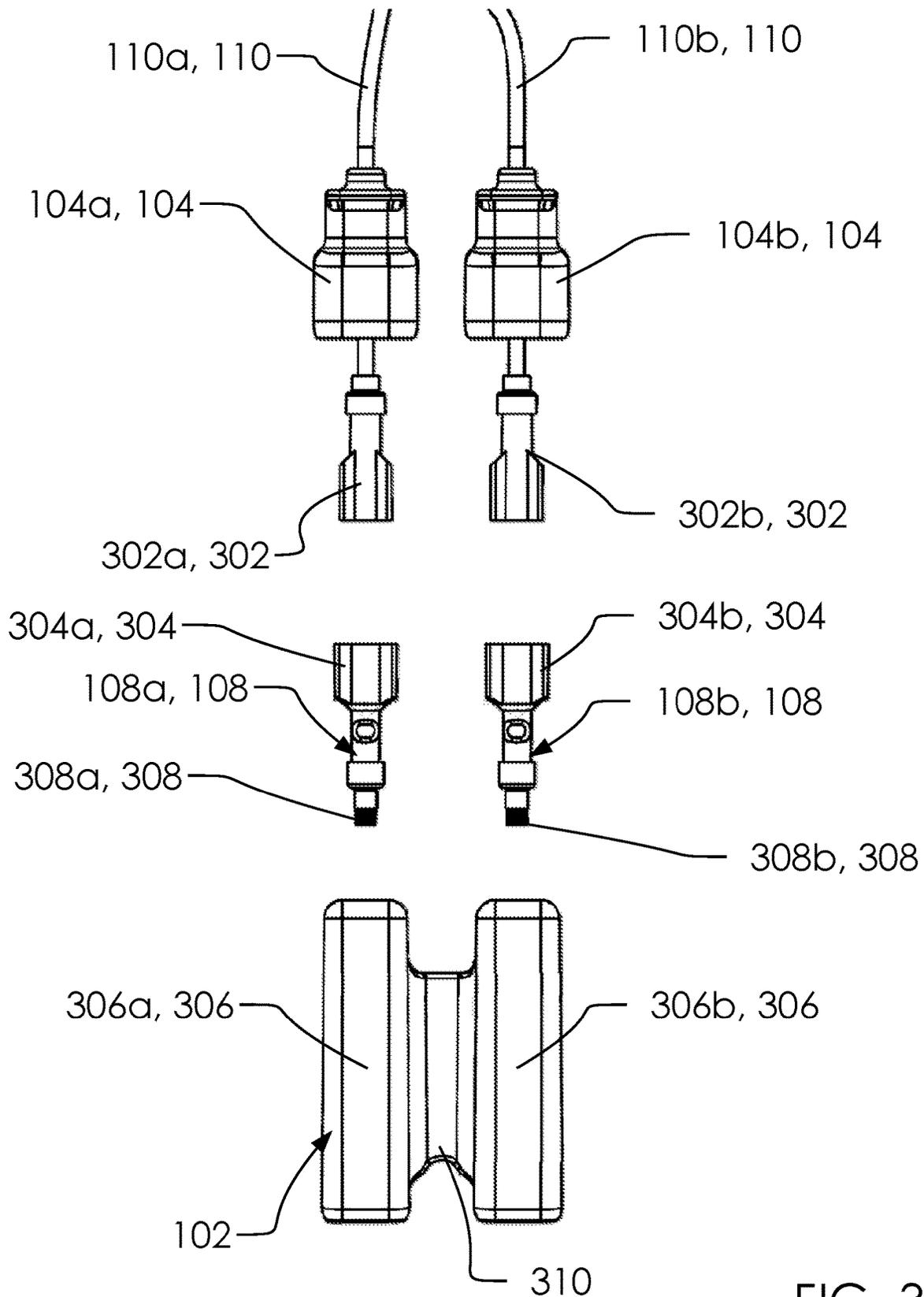


FIG. 3

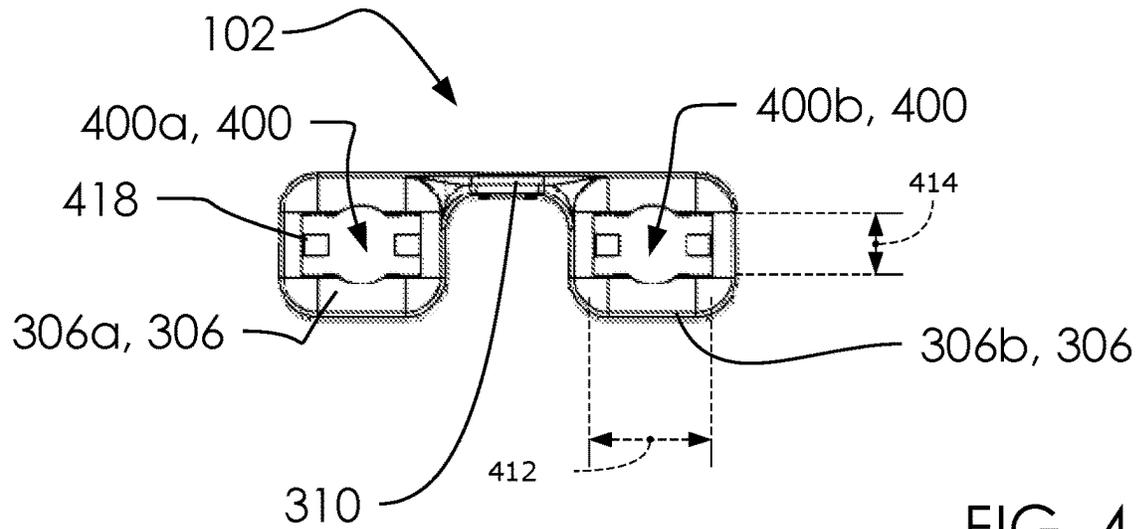


FIG. 4A

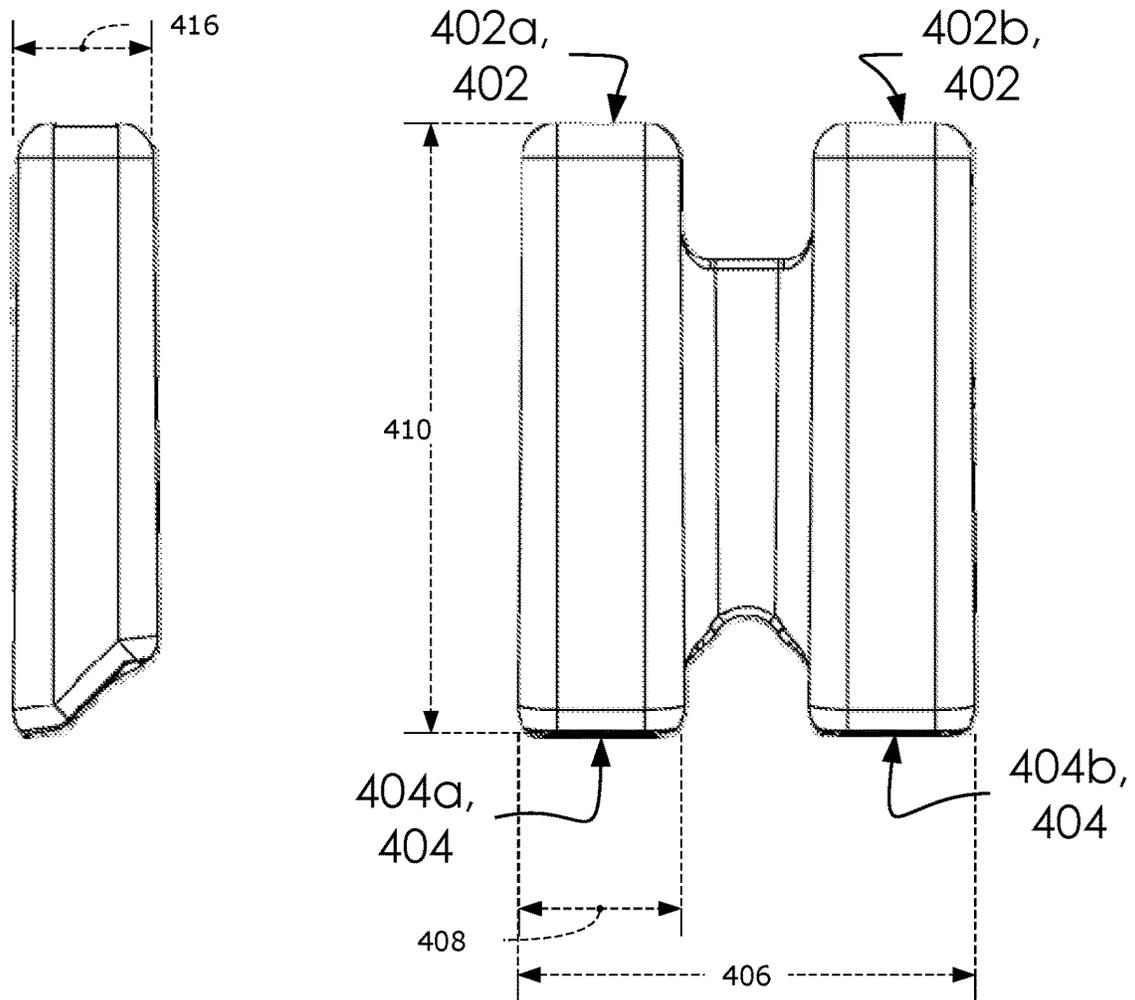


FIG. 4B

FIG. 4C

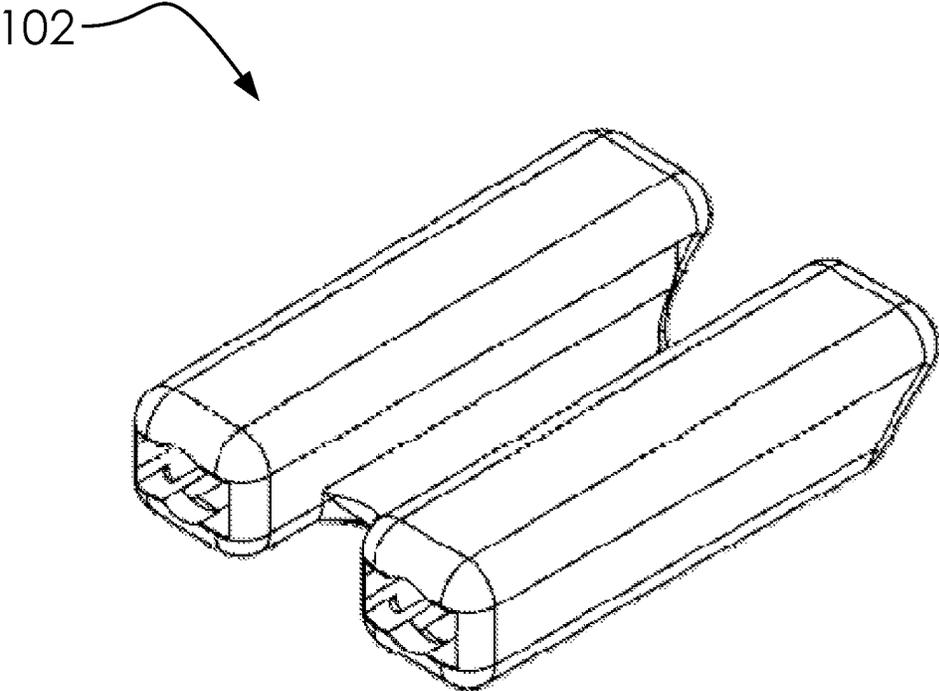


FIG. 5

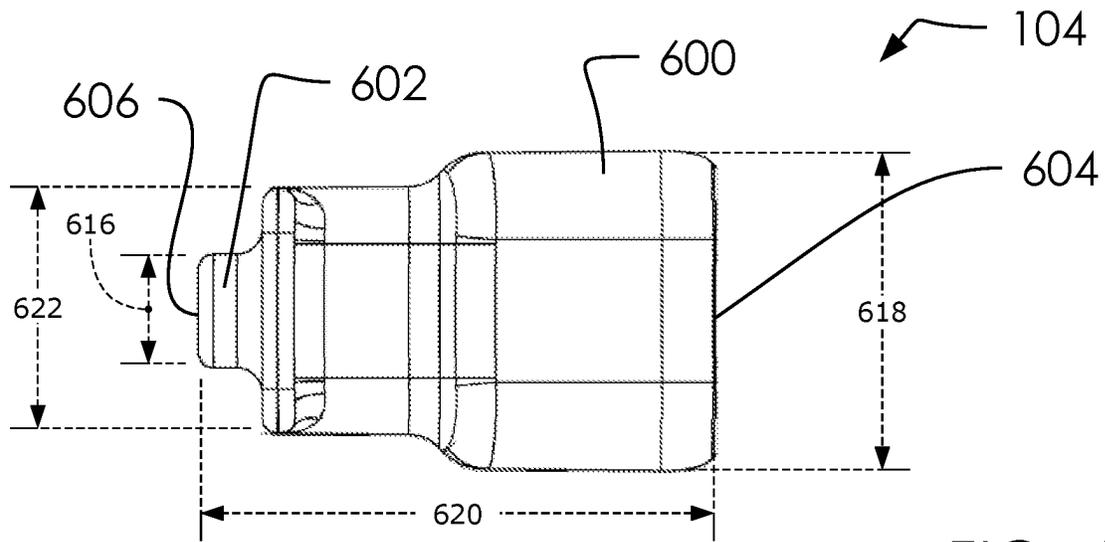


FIG. 6A

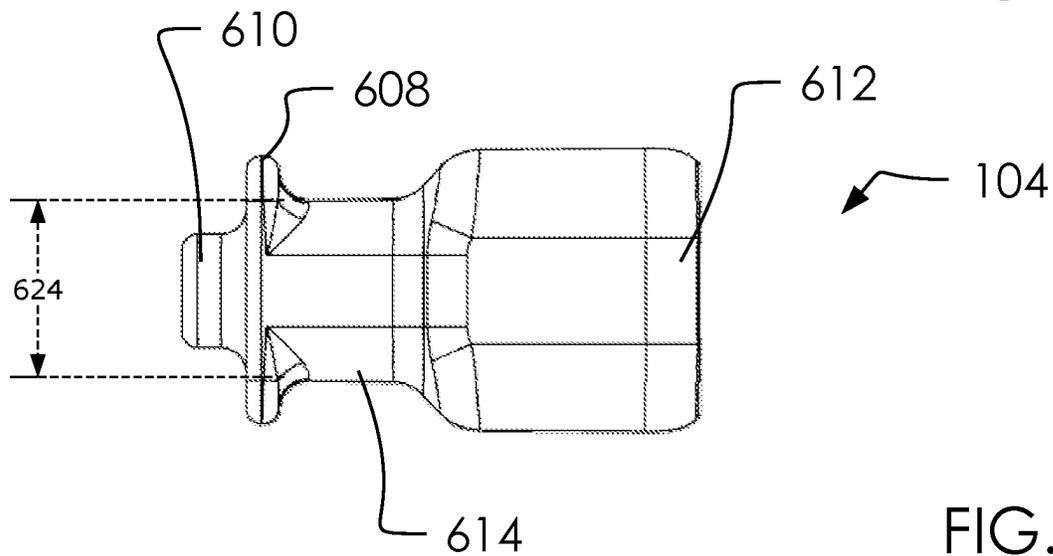


FIG. 6B

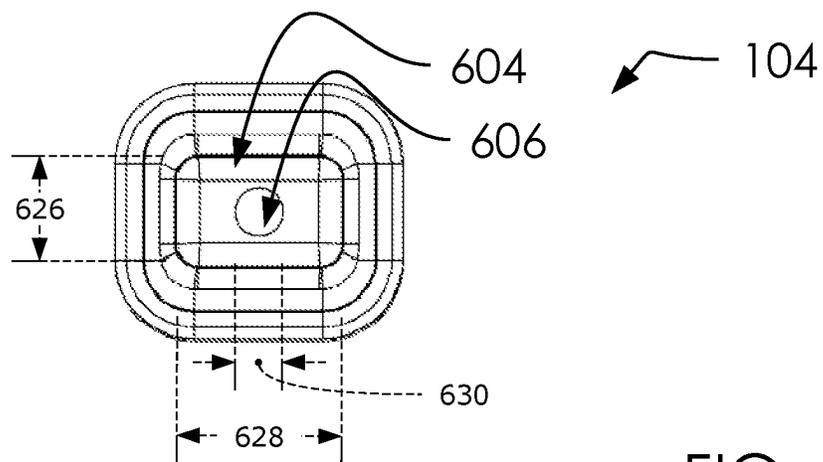


FIG. 6C

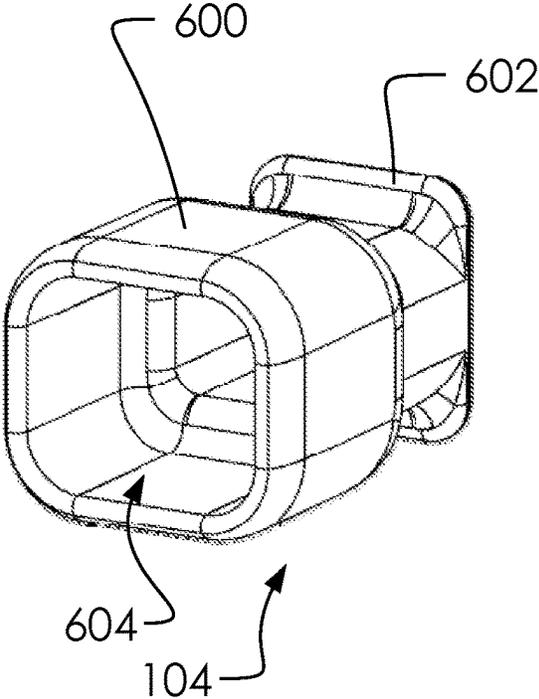


FIG. 7A

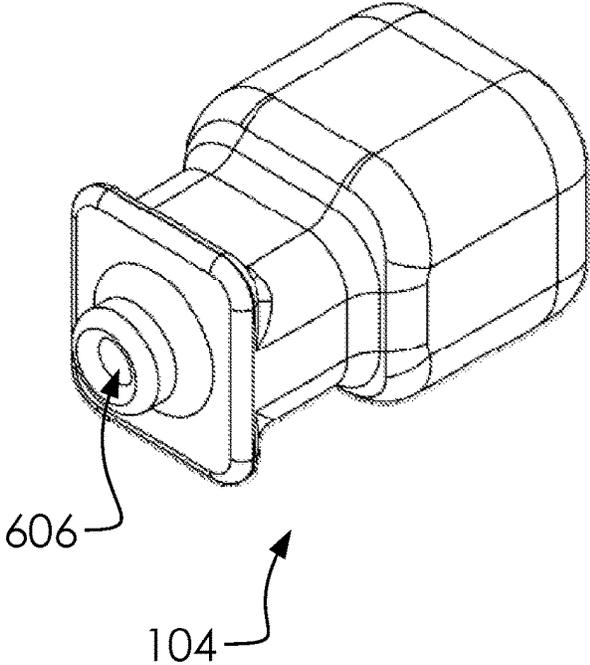


FIG. 7B

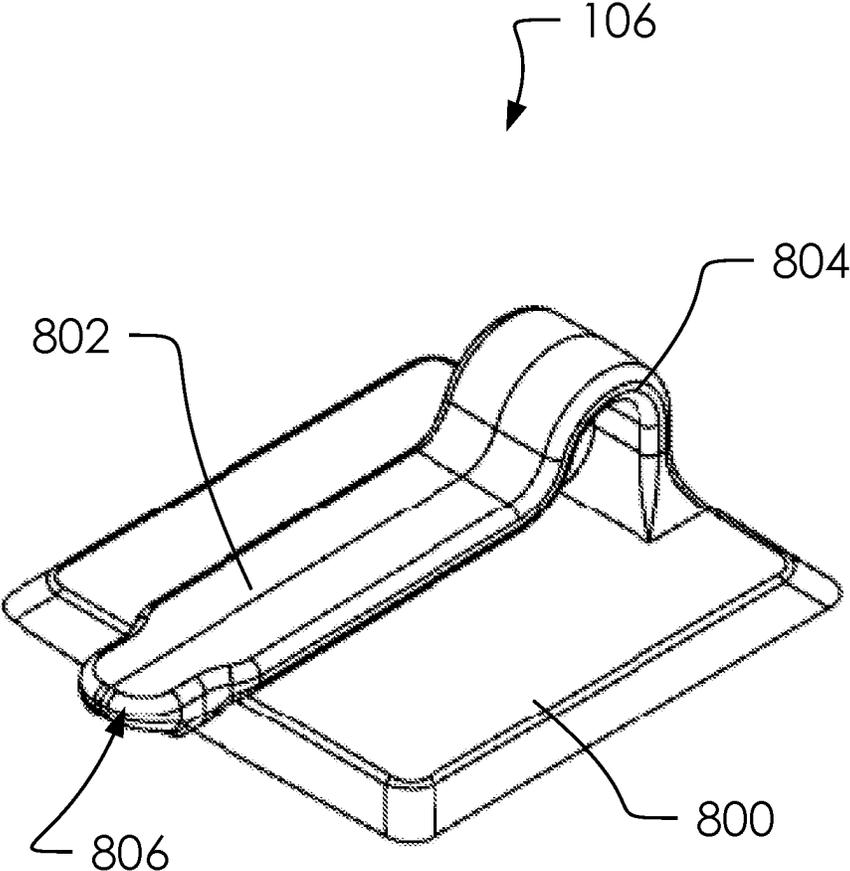


FIG. 8

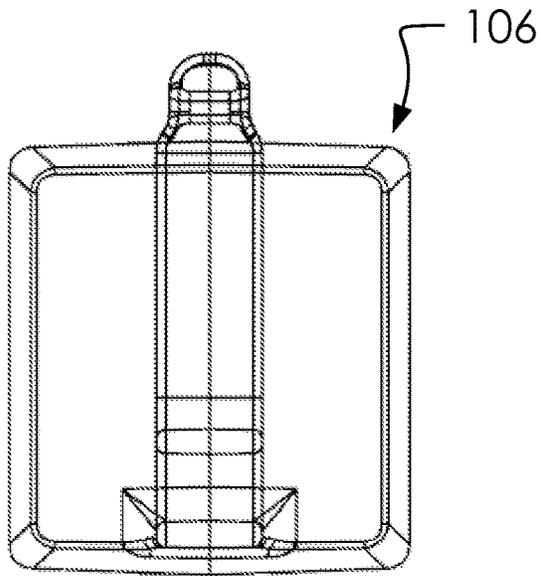


FIG. 9A

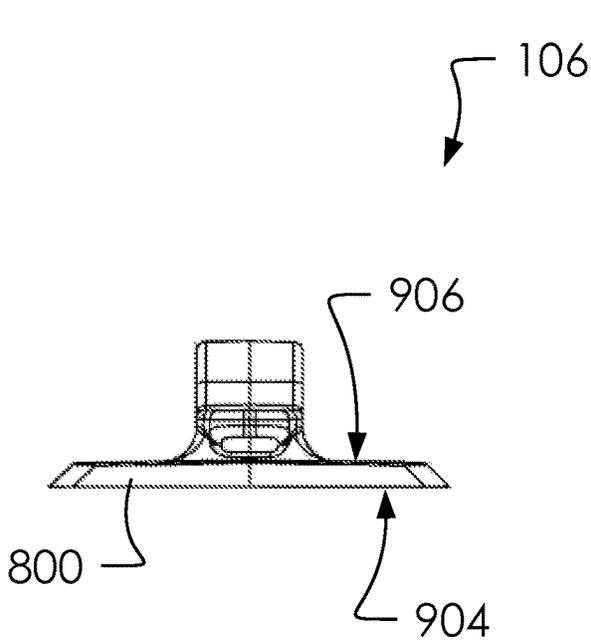


FIG. 9B

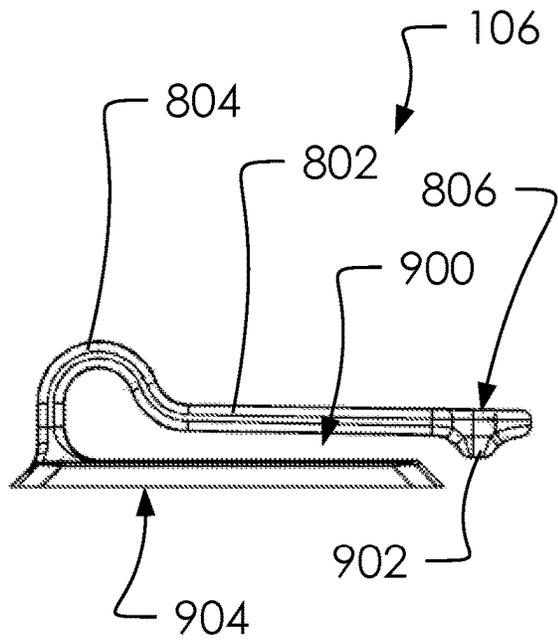


FIG. 9C

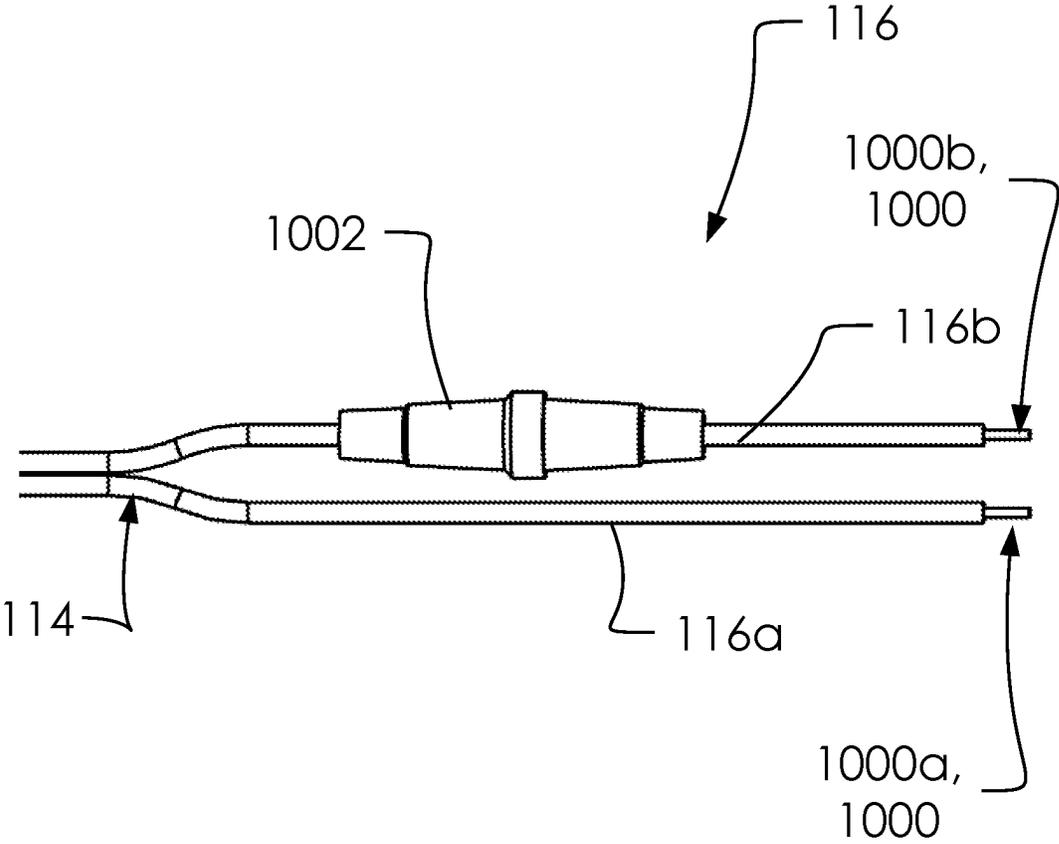


FIG. 10

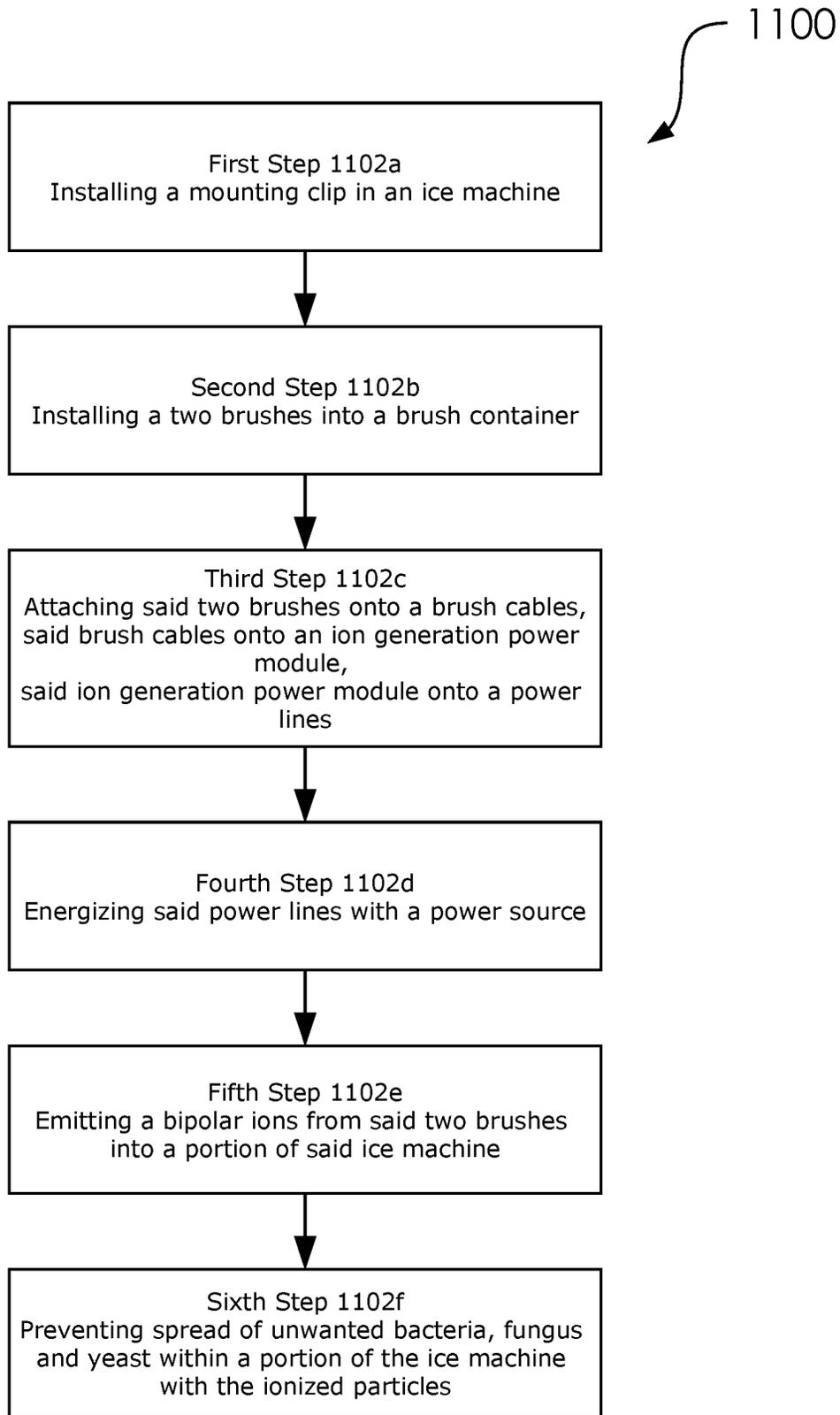


FIG. 11

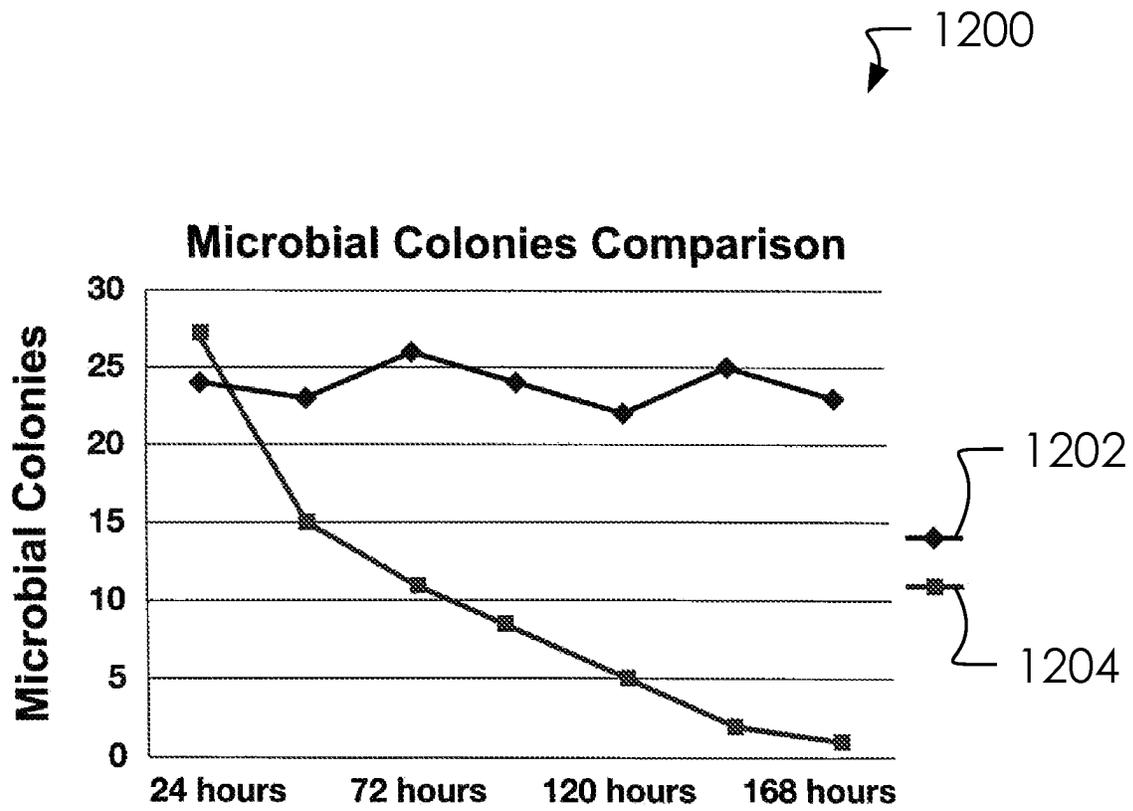


FIG. 12

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ICE MACHINE CLEANING SYSTEM AND METHOD OF USE

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims benefit to U.S. Patent Application No. 62/582,758 filed on Nov. 7, 2017.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT (IF APPLICABLE)

Not applicable.

REFERENCE TO SEQUENCE LISTING, A TABLE, OR A COMPUTER PROGRAM LISTING COMPACT DISC APPENDIX (IF APPLICABLE)

Not applicable.

BACKGROUND OF THE INVENTION

Prior art known to the Applicant includes U.S. Pat. No. 8,564,924 B1; U.S. Pat. No. 9,025,303 B2; US 20170232131 A1; US 20170040149 A1; US 20100223944 A1

None of the known inventions and patents, taken either singularly or in combination, is seen to describe the instant disclosure as claimed.

BRIEF SUMMARY OF THE INVENTION

An surface sanitizing system for cleaning a portion of an ice machine with a bipolar ions, wherein, said surface sanitizing system comprises a plugs, a power lines, an ion generation power module, a two or more brush cables, a two brushes a brush container and a mounting clip. Said plugs selectively attaches to a power source and provides electricity for running said surface sanitizing system. Said power lines selectively attach said plugs to said ion generation power module. Said two or more brush cables selectively attach said ion generation power module to said two brushes. A female containment portions selectively holds said two brushes within a portion of said brush container. Said two brushes selectively attach to a portion of said two or more brush cables. Said brush container selectively clips into said mounting clip. Said mounting clip selectively attaches to a portion of an ice maker. Said surface sanitizing system comprising a one or more steps comprising installing said mounting clip into a portion of said ice machine, installing a portion of said two brushes into said brush container, attaching said two brushes to said two or more brush cables, said two or more brush cables to said ion generation power module, said ion generation power module to said power lines, said power lines to said plugs, and said plugs to said power source, energizing said plugs with said power source, emitting said bipolar ions with said two brushes into a portion of said ice machine, and preventing the spread of unwanted bacteria, fungus, and yeast within a portion of said ice machine with said bipolar ions.

An surface sanitizing system for cleaning a portion of an ice machine with a bipolar ions, wherein, said surface sanitizing system comprises a plugs, a power lines, an ion generation power module, a two or more brush cables, a two brushes and a mounting clip. Said plugs selectively attaches to a power source and provides electricity for running said

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surface sanitizing system. Said power lines selectively attach said plugs to said ion generation power module. Said two or more brush cables selectively attach said ion generation power module to said two brushes. Said two brushes selectively attach to a portion of said two or more brush cables.

An ice machine cleaning method for cleaning a portion of an ice machine with a bipolar ions generated by an surface sanitizing system. Comprising installing a mounting clip of said surface sanitizing system into a portion of said ice machine. Installing a portion of a two brushes into a brush container. Attaching said two brushes to a two or more brush cables, said two or more brush cables to an ion generation power module, said ion generation power module to a power lines, said power lines to a plugs, and said plugs to a power source. Energizing said plugs with said power source. Emitting said bipolar ions with said two brushes into a portion of said ice machine. Preventing the spread of unwanted bacteria, fungus, and yeast within a portion of said ice machine with said bipolar ions. Wherein said surface sanitizing system comprises said plugs, said power lines, said ion generation power module, said two or more brush cables, said two brushes said brush container and said mounting clip. Wherein said plugs selectively attaches to said power source and provides electricity for running said surface sanitizing system. Wherein said power lines selectively attach said plugs to said ion generation power module. Wherein said two or more brush cables selectively attach said ion generation power module to said two brushes. Wherein a female containment portions selectively holds said two brushes within a portion of said brush container. Wherein said mounting clip selectively attaches to a portion of an ice maker.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

FIG. 1A illustrates a perspective overview view of surface sanitizing system **100**.

FIG. 1B illustrates an elevated top side view of surface sanitizing system **100**.

FIGS. 1C and 1D illustrate an elevated front side view and an elevated first side view of surface sanitizing system **100**.

FIG. 2A illustrates a block diagram view of ice machine **200**.

FIG. 2B illustrates a flow chart view of air purifier **212** as used in the prior art.

FIG. 3 illustrates an elevated top side view of said two or more brush cables **110**, said female containment portions **104**, said plugs **302**, said sockets **304**, and said brush container **102**.

FIG. 4A illustrates an elevated front side view of brush container **102**.

FIG. 4B illustrates an elevated first side view of brush container **102**.

FIG. 4C illustrates an elevated top side view of brush container **102**.

FIG. 5 illustrates a perspective overview view of brush container **102**.

FIG. 6A illustrates an elevated front side view of female containment portions **104**.

FIG. 6B illustrates an elevated top side view of female containment portions **104**.

FIG. 6C illustrates an elevated first side view of female containment portions **104**.

FIG. 7A illustrates a perspective front side view of female containment portions **104**.

FIG. 7B illustrates a perspective back side view of female containment portions **104**.

FIG. 8 illustrates a perspective overview view of mounting clip **106**.

FIG. 9A illustrates an elevated top side view of mounting clip **106**, rendered in transparent wire frame.

FIG. 9B illustrates an elevated front side view of mounting clip **106**.

FIG. 9C illustrates an elevated first side view of mounting clip **106**.

FIG. 10 illustrates an elevated overview view of plugs **116**.

FIG. 11 illustrates a flow chart view of said ice machine cleaning method **1100**.

FIG. 12 illustrates a chart **1200** showing a first microbial colonies over time **1202** and a second microbial colonies over time **1204**.

DETAILED DESCRIPTION OF THE INVENTION

The following description is presented to enable any person skilled in the art to make and use the invention as claimed and is provided in the context of the particular examples discussed below, variations of which will be readily apparent to those skilled in the art. In the interest of clarity, not all features of an actual implementation are described in this specification. It will be appreciated that in the development of any such actual implementation (as in any development project), design decisions must be made to achieve the designers' specific goals (e.g., compliance with system- and business-related constraints), and that these goals will vary from one implementation to another. It will also be appreciated that such development effort might be complex and time-consuming, but would nevertheless be a routine undertaking for those of ordinary skill in the field of the appropriate art having the benefit of this disclosure. Accordingly, the claims appended hereto are not intended to be limited by the disclosed embodiments, but are to be accorded their widest scope consistent with the principles and features disclosed herein.

These parts are illustrated in the figures and discussed below:

a surface sanitizing system **100**

a brush container **102**

a female containment portions **104**

a first female containment portion **104a**

a second female containment portion **104b**

a mounting clip **106**

a two brushes **108**

a first brush **108a**

a second brush **108b**

a two or more brush cables **110**

a first brush cable **110a**

a second brush cable **110b**

an ion generation power module **112**

a power lines **114**

a plugs **116**

a first plug **116a**

a second plug **116b**

an ice machine **200**

an ice maker **202**

an ice reservoir **204**

an ice **206**

a power source **208**

a bipolar ions **210**

an air purifier **212**

an air in **214**

an air out **216**

a plugs **302**

a first plug **302a**

5 a second plug **302b**

a sockets **304**

a first socket **304a**

a second socket **304b**

a two sides **306**

10 a first side **306a**

a second side **306b**

a brushes **308**

a first brush **308a**

a second brush **308b**

15 a bridge **310**

a sockets **400**

a first socket **400a**

a second socket **400b**

a brush sockets **402**

20 a first brush socket **402a**

a second brush socket **402b**

an emission sockets **404**

a first emission socket **404a**

a second emission socket **404b**

25 a width **406**

a width **408**

a length **410**

a socket width **412**

a socket height **414**

30 a height **416**

a stops **418**

a brush containment portion **600**

a line containment portion **602**

a brush aperture **604**

35 a line aperture **606**

a grip **608**

a first end **610**

a second end **612**

a neck **614**

40 a width **616**

a width **618**

a length **620**

a width **622**

a height **624**

45 a height **626**

a width **628**

a diameter **630**

a base **800**

a clip body **802**

50 a bridge **804**

a clip head **806**

a clip enclosure **900**

an enclosure bump **902**

a bottom surface **904**

55 a top surface **906**

a wires **1000**

a first wire **1000a**

a second wire **1000b**

an inline fuse **1002**

60 an ice machine cleaning method **1100**

a one or more steps **1102**

a first step **1102a**

a second step **1102b**

a third step **1102c**

65 a fourth step **1102d**

a fifth step **1102e**

a sixth step **1102f**

a performance summary chart **1200**
 a colonies without cleaning system **1202**
 a colonies with cleaning system **1204**

FIG. 1A illustrates a perspective overview view of surface sanitizing system **100**.

FIG. 1B illustrates an elevated top side view of surface sanitizing system **100**.

FIGS. 1C and 1D illustrate an elevated front side view and an elevated first side view of surface sanitizing system **100**.

In one embodiment, said surface sanitizing system **100** can comprise said brush container **102**, said brush container **102**, said female containment portions **104**, said mounting clip **106**, said mounting clip **106**, said two brushes **108**, said second brush **108b**, said two or more brush cables **110**, said ion generation power module **112**, said power lines **114**, said power lines **114** and said plugs **116**.

In one embodiment, said female containment portions **104** can comprise said first female containment portion **104a** and said second female containment portion **104b**.

In one embodiment, said two brushes **108** can comprise said first brush **108a** and said second brush **108b**.

In one embodiment, said two or more brush cables **110** can comprise said first brush cable **110a** and said second brush cable **110b**.

In one embodiment, said plugs **116** can comprise said first plug **116a** and said second plug **116b**.

In one embodiment, surface sanitizing system **100** can be used for cleaning said ice maker **202**, as discussed below.

Said surface sanitizing system **100** can comprise one or more features designed for use in a cold environment, as discussed below.

In one embodiment, plugs **116** can attach to said power source **208** and provide electricity for running said surface sanitizing system **100**. Said power lines **114** can attach plugs **116** to ion generation power module **112**. Said ion generation power module **112** can generate sufficient voltage and electrical inputs, as discussed in the references incorporated by reference herein. Said two or more brush cables **110** can attach said ion generation power module **112** to said two brushes **108**. Said female containment portions **104** can hold said two brushes **108** within a portion of brush container **102**. Said two brushes **108** can attach to a portion of two or more brush cables **110**, as discussed below. Said brush container **102** can selectively clip into mounting clip **106**. Said mounting clip **106** can selectively attach to a portion of said ice maker **202**.

In one embodiment, said surface sanitizing system **100** can be adapted to food grade environments such as freezers (walk in or reach in), raw food storage, and proofers.

In one embodiment, wires in said surface sanitizing system **100** can comprise NSF/FDA CFR 21 food grade wires. Nylon materials can be used for food grade injection molded parts. Further, all connectors and heat shrink can comprise food grade materials, as is known in the art.

FIG. 2A illustrates a block diagram view of ice machine **200**.

FIG. 2B illustrates a flow chart view of air purifier **212** as used in the prior art.

In one embodiment, said ice machine **200** can comprise said ice maker **202** and said ice reservoir **204**.

In one embodiment, said air purifier **212** can comprise said air in **214** and said air out **216**.

In one embodiment, said surface sanitizing system **100** can comprise said power source **208** and said bipolar ions **210**.

In one embodiment, said brush container **102** can comprise said bipolar ions **210**.

Bipolar Ionization is a process in which the decomposition of gas molecules into atoms is effected by the aid of high energy sources. The natural source for this high energy is UV solar radiation and soil radioactivity.

By including surface sanitizing system **100** within a portion of ice machine **200**, such as ice maker **202**, said bipolar ions **210** can be released into ice machine **200** and thereby ensure cleanliness of said ice **206**.

Referring to FIG. 2B, we note that ion generation power module **112** has been used in air purifier **212** in the past. Note that in this case said air in **214** and air out **216** are the focus of those systems. Whereas, surface sanitizing system **100** is for use in a mostly closed system without large amounts of air in and out, relatively speaking.

In one embodiment, said surface sanitizing system **100** can generate 200 M positive and 200 M negative charged ions per cubic centimeter when 1 inch away from said two brushes **108**; however, density can decrease further away from said two brushes **108**.

As illustrated, two lines are shown between power source **208** and surface sanitizing system **100**; in one embodiment, said power source **208** can send 6000 KV (positive and negative) into said surface sanitizing system **100**.

FIG. 3 illustrates an elevated top side view of said two or more brush cables **110**, said female containment portions **104**, said plugs **302**, said sockets **304**, and said brush container **102**.

In one embodiment, said plugs **302** can comprise said first plug **302a** and said second plug **302b**.

In one embodiment, said sockets **304** can comprise said first socket **304a** and said second socket **304b**.

In one embodiment, said two sides **306** can comprise said first side **306a** and said second side **306b**.

In one embodiment, said brushes **308** can comprise said first brush **308a** and said second brush **308b**.

In one embodiment, said brush container **102** can comprise said second socket **304b**, said two sides **306** and said bridge **310**.

In one embodiment, said two brushes **108** can comprise said second plug **302b**, said sockets **304**, said second side **306b** and said brushes **308**.

In one embodiment, said two or more brush cables **110** can comprise said plugs **302**.

Focusing now on the interaction of two or more brush cables **110**, two brushes **108** and brush container **102**. A portion of said two or more brush cables **110** can fit through a portion of female containment portions **104**. In one embodiment, two or more brush cables **110** can comprise plugs **302** at one end for selectively mating with two brushes **108**. In one embodiment, plugs **302** can selectively mate with sockets **304** of two brushes **108**. Said two brushes **108** can comprise sockets **304** at one end and brushes **308** at another end. Accordingly, two or more brush cables **110** can be attached to two brushes **108** and the resulting assembly can end with said brushes **308** extending from the end thereof.

In one embodiment, brushes **308** may need protection within a setting such as said ice machine **200**. In one embodiment, a portion of brushes **308** can be inserted into two sides **306**. Accordingly, since brushes **308** are separated and shielded within two sides **306**, said surface sanitizing system **100** can function more efficiently and safely.

brush container **102** can comprise two sides **306**. Said two sides **306** can comprise first side **306a** and second side **306b**. Said two sides **306** can be separate chambers being attached to one another with bridge **310**. Said two sides **306** can be substantially parallel.

In one embodiment, said brushes **308** can be replaced regularly for maintenance. If used in a dining establishment, the brushes might get caked in grease, it might be a best practice to remove and replace them. One benefit of said surface sanitizing system **100**, is easy access to said sockets **304** and said brushes **308** within said brush container **102** for replacement.

In one embodiment, said brushes **308** can comprise non-food grade materials, accordingly, said brush container **102** can provide certified clean use of said surface sanitizing system **100** despite using said brushes **308** in this condition.

In one embodiment, said brushes **308** can be carefully centered in said two sides **306** of said brush container **102**. This feature can encourage high production.

Herein, said surface sanitizing system **100** can comprise nylon materials which is not only food grade, but suitable for electrically charged elements as nylon is anti-static.

FIG. 4A illustrates an elevated front side view of brush container **102**.

FIG. 4B illustrates an elevated first side view of brush container **102**.

FIG. 4C illustrates an elevated top side view of brush container **102**.

In one embodiment, said sockets **400** can comprise said first socket **400a**, said second socket **400b**, said socket width **412** and said socket height **414**.

In one embodiment, said brush sockets **402** can comprise said first brush socket **402a** and said second brush socket **402b**.

In one embodiment, said emission sockets **404** can comprise said first emission socket **404a** and said second emission socket **404b**.

In one embodiment, said brush container **102** can comprise said sockets **400**, said second socket **400b**, said brush sockets **402**, said second brush socket **402b**, said emission sockets **404**, said width **406**, said length **410**, said height **416** and said stops **418**.

In one embodiment, said two sides **306** can comprise said width **408**.

Said brush container **102** can comprise sockets **400** for holding a portion of two brushes **108**. first socket **400a** and second socket **400b** can comprise substantially parallel tunnels for holding said two brushes **108**. Said sockets **400** can comprise brush sockets **402** and emission sockets **404**, as illustrated. In one embodiment, a portion of two brushes **108** can inserted into brush sockets **402** and remain inserted therein during operation of surface sanitizing system **100**.

Said bridge **310** can be adapted for selectively attaching to mounting clip **106**, as discussed below.

Concerning said brush container **102**, the rake of the holster can keep said brushes **308** dry and allow said bipolar ions **210** to flow out of the containment.

In one embodiment, the radius of parts of said brush container **102** can comprise at least 0.125" to allow for easy cleaning.

In one embodiment, said stops **418** can be arranged on either side of said sockets **400**, as illustrated. In one embodiment, said sockets **400** can prevent said brushes **308** from entering said brush container **102** too far and ensure centering and location.

FIG. 5 illustrates a perspective overview view of brush container **102**.

FIG. 6A illustrates an elevated front side view of female containment portions **104**.

FIG. 6B illustrates an elevated top side view of female containment portions **104**.

FIG. 6C illustrates an elevated first side view of female containment portions **104**.

In one embodiment, said brush containment portion **600** can comprise said width **618**.

In one embodiment, said line containment portion **602** can comprise said width **616**.

In one embodiment, said brush aperture **604** can comprise said height **626** and said width **628**.

In one embodiment, said line aperture **606** can comprise said diameter **630**.

In one embodiment, said neck **614** can comprise said width **622** and said height **624**.

In one embodiment, said female containment portions **104** can comprise said brush containment portion **600**, said line containment portion **602**, said brush aperture **604**, said line aperture **606**, said grip **608**, said first end **610**, said second end **612**, said neck **614** and said length **620**.

In one embodiment, brush aperture **604** can receive a portion of brush sockets **402** of brush container **102**; wherein, said two brushes **108** can be encased in portions of brush container **102** and female containment portions **104**. Said height **626** and width **628** of female containment portions **104** can be large enough to accommodate and selectively hold a portion of brush sockets **402** having width **408** and height **416**; wherein, brush sockets **402** comprises an internal fitting piece and female containment portions **104** comprise and external fitting piece.

In one embodiment, line aperture **606** can comprise a diameter large enough to hold a portion of two or more brush cables **110** within line containment portion **602** of female containment portions **104**.

In one embodiment, a portion of two or more brush cables **110** passes through line aperture **606**, and extends toward brush aperture **604**; two brushes **108** attach to two or more brush cables **110** within a portion of female containment portions **104**; said brush containment portion **600** of female containment portions **104** attaches to a portion of brush container **102**.

grip **608** can comprise a grip for pulling female containment portions **104** relative to two or more brush cables **110** and/or brush container **102**.

In one embodiment, said female containment portions **104** can be configured to tight tolerances around said two or more brush cables **110**. In one embodiment, said tight tolerances can allow for cleaning and access but minimal inputs.

FIG. 7A illustrates a perspective front side view of female containment portions **104**.

FIG. 7B illustrates a perspective back side view of female containment portions **104**.

FIG. 8 illustrates a perspective overview view of mounting clip **106**.

In one embodiment, said mounting clip **106** can comprise said base **800**, said clip body **802**, said bridge **804** and said clip head **806**.

In one embodiment, mounting clip **106** can be adapted to attaching to a portion of ice machine **200**, and selectively holding a portion of brush container **102** with said clip body **802**.

In one embodiment, base **800** can comprise a substantially planar portion of mounting clip **106** for attaching to a portion of ice machine **200**. Said bridge **804** can extend up and substantially perpendicular to the planar surface of **800**, as illustrated. In one embodiment, said clip body **802** can extend across a portion of base **800**; and clip head **806** can create a gripping head at a far end of clip body **802** from bridge **804**, as illustrated.

In one embodiment, said surface sanitizing system **100** can be configured to keep said mounting clip **106** in said ice machine **200** but allowing said brush container **102** to be removed and run through a sanitization cycle in a cleaning machine such as a dish washer.

FIG. 9A illustrates an elevated top side view of mounting clip **106**, rendered in transparent wire frame.

FIG. 9B illustrates an elevated front side view of mounting clip **106**.

FIG. 9C illustrates an elevated first side view of mounting clip **106**.

In one embodiment, said mounting clip **106** can comprise said clip enclosure **900**.

In one embodiment, said plugs **116** can comprise said top surface **906**.

In one embodiment, said base **800** can comprise said bottom surface **904** and said top surface **906**.

In one embodiment, said clip body **802** can comprise said enclosure bump **902**.

In one embodiment, base **800** can comprise top surface **906** and bottom surface **904**. In one embodiment, bottom surface **904** can comprise adhesive for attaching mounting clip **106** to a portion of ice machine **200**.

In one embodiment, clip head **806** can comprise enclosure bump **902**; wherein, said clip enclosure **900** being between enclosure bump **902**, clip body **802**, bridge **804** and top surface **906** can be selectively accessed through enclosure bump **902**, as is known in the art. In one embodiment, attaching a portion of brush container **102** to mounting clip **106** can comprise sliding a portion of bridge **310** under enclosure bump **902** and into clip enclosure **900**, and pressing a portion of clip body **802** into bridge **310**.

In one embodiment, said bottom surface **904** can comprise food grade adhesive. In one embodiment, said bottom surface **904** can not be use with mechanical fasteners to ensure cleanliness.

In one embodiment, said enclosure bump **902** be increased and decreased to ensure bonding between said mounting clip **106** and said ice machine **200**.

FIG. 10 illustrates an elevated overview view of plugs **116**.

In one embodiment, said wires **1000** can comprise said first wire **1000a**, said second wire **1000b** and said inline fuse **1002**.

In one embodiment, said plugs **116** can comprise said wires **1000**.

Said plugs **116** can be used as is known in the art.

FIG. 11 illustrates a flow chart view of said ice machine cleaning method **1100**.

In one embodiment, said ice machine cleaning method **1100** can comprise said one or more steps **1102**.

In one embodiment, said one or more steps **1102** can comprise said first step **1102a**, said second step **1102b**, said third step **1102c**, said fourth step **1102d**, said fifth step **1102e** and said sixth step **1102f**.

In one embodiment, said surface sanitizing system **100** can comprise said ice machine cleaning method **1100**.

In one embodiment, said two or more brush cables **110** can comprise said ice machine cleaning method **1100**.

With regard to one or more steps **1102**: first step **1102a** can comprise installing mounting clip **106** into a portion of ice machine **200**; second step **1102b** can comprise installing a portion of two brushes **108** into brush container **102**; said third step **1102c** can comprise attaching two brushes **108** to two or more brush cables **110**, said two or more brush cables **110** to ion generation power module **112**, said ion generation power module **112** to power lines **114**, power lines **114** to

plugs **116**, and said plugs **116** to power source **208**; said fourth step **1102d** can comprise energizing plugs **116** with power source **208**; said fifth step **1102e** can comprise emitting said bipolar ions **210** with two brushes **108** into a portion of ice machine **200**; and said sixth step **1102f** can comprise preventing the spread of unwanted bacteria, fungus, and yeast within a portion of ice machine **200** with said bipolar ions **210**.

FIG. 12 illustrates a chart **1200** showing a first microbial colonies over time **1202** and a second microbial colonies over time **1204**.

The following sentences are included for completeness of this disclosure with reference to the claims.

An surface sanitizing system **100** for cleaning a portion of an ice machine **200** with a bipolar ions **210**, wherein, said surface sanitizing system **100** comprises a plugs **116**, a power lines **114**, an ion generation power module **112**, a two or more brush cables **110**, a two brushes **108** a brush container **102** and a mounting clip **106**. Said plugs **116** selectively attaches to a power source **208** and provides electricity for running said surface sanitizing system **100**. Said power lines **114** selectively attach said plugs **116** to said ion generation power module **112**. Said two or more brush cables **110** selectively attach said ion generation power module **112** to said two brushes **108**. A female containment portions **104** selectively holds said two brushes **108** within a portion of said brush container **102**. Said two brushes **108** selectively attach to a portion of said two or more brush cables **110**. Said brush container **102** selectively clips into said mounting clip **106**. Said mounting clip **106** selectively attaches to a portion of an ice maker **202**. Said surface sanitizing system **100** comprising a one or more steps **1102** comprising installing said mounting clip **106** into a portion of said ice machine **200**, installing a portion of said two brushes **108** into said brush container **102**, attaching said two brushes **108** to said two or more brush cables **110**, said two or more brush cables **110** to said ion generation power module **112**, said ion generation power module **112** to said power lines **114**, said power lines **114** to said plugs **116**, and said plugs **116** to said power source **208**, energizing said plugs **116** with said power source **208**, emitting said bipolar ions **210** with said two brushes **108** into a portion of said ice machine **200**, and preventing the spread of unwanted bacteria, fungus, and yeast within a portion of said ice machine **200** with said bipolar ions **210**. An surface sanitizing system **100** for cleaning a portion of an ice machine **200** with a bipolar ions **210**, wherein,

Said surface sanitizing system **100** comprises a plugs **116**, a power lines **114**, an ion generation power module **112**, a two or more brush cables **110**, a two brushes **108** and a mounting clip **106**. Said plugs **116** selectively attaches to a power source **208** and provides electricity for running said surface sanitizing system **100**. Said power lines **114** selectively attach said plugs **116** to said ion generation power module **112**. Said two or more brush cables **110** selectively attach said ion generation power module **112** to said two brushes **108**. Said two brushes **108** selectively attach to a portion of said two or more brush cables **110**.

Said surface sanitizing system **100** further comprises a brush container **102**. A female containment portions **104** selectively holds said two brushes **108** within a portion of said brush container **102**. Said mounting clip **106** selectively attaches to a portion of an ice maker **202**. Said surface sanitizing system **100** comprising a one or more steps **1102** comprising installing said mounting clip **106** into a portion of said ice machine **200**, installing a portion of said two brushes **108** into said brush container **102**, attaching said two

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brushes 108 to said two or more brush cables 110, said two or more brush cables 110 to said ion generation power module 112, said ion generation power module 112 to said power lines 114, said power lines 114 to said plugs 116, and said plugs 116 to said power source 208, energizing said plugs 116 with said power source 208, emitting said bipolar ions 210 with said two brushes 108 into a portion of said ice machine 200, and preventing the spread of unwanted bacteria, fungus, and yeast within a portion of said ice machine 200 with said bipolar ions 210.

Said surface sanitizing system 100 further comprises a brush container 102. A female containment portions 104 selectively holds said two brushes 108 within a portion of said brush container 102. Said mounting clip 106 selectively attaches to a portion of an ice maker 202.

Said brush container 102 selectively clips into said mounting clip 106.

Said mounting clip 106 selectively attaches to a portion of said ice maker 202. Said surface sanitizing system 100 is configured to protect a portion of said ice machine 200 by: installing said mounting clip 106 into a portion of said ice machine 200, installing a portion of said two brushes 108 into said brush container 102, attaching said two brushes 108 to said two or more brush cables 110, said two or more brush cables 110 to said ion generation power module 112, said ion generation power module 112 to said power lines 114, said power lines 114 to said plugs 116, and said plugs 116 to said power source 208, energizing said plugs 116 with said power source 208, emitting said bipolar ions 210 with said two brushes 108 into a portion of said ice machine 200, and preventing the spread of unwanted bacteria, fungus, and yeast within a portion of said ice machine 200 with said bipolar ions 210. An ice machine cleaning method 1100 for cleaning a portion of an ice machine 200 with a bipolar ions 210 generated by an surface sanitizing system 100. Comprising

Installing a mounting clip 106 of said surface sanitizing system 100 into a portion of said ice machine 200. Installing a portion of a two brushes 108 into a brush container 102. Attaching said two brushes 108 to a two or more brush cables 110, said two or more brush cables 110 to an ion generation power module 112, said ion generation power module 112 to a power lines 114, said power lines 114 to a plugs 116, and said plugs 116 to a power source 208. Energizing said plugs 116 with said power source 208. Emitting said bipolar ions 210 with said two brushes 108 into a portion of said ice machine 200. Preventing the spread of unwanted bacteria, fungus, and yeast within a portion of said ice machine 200 with said bipolar ions 210. Wherein said surface sanitizing system 100 comprises said plugs 116, said power lines 114, said ion generation power module 112, said two or more brush cables 110, said two brushes 108 said brush container 102 and said mounting clip 106. Wherein said plugs 116 selectively attaches to said power source 208 and provides electricity for running said surface sanitizing system 100. Wherein said power lines 114 selectively attach said plugs 116 to said ion generation power module 112. Wherein said two or more brush cables 110 selectively attach said ion generation power module 112 to said two brushes 108. Wherein a female containment portions 104 selectively holds said two brushes 108 within a portion of said brush container 102. Wherein said mounting clip 106 selectively attaches to a portion of an ice maker 202.

Selectively clipping said brush container 102 into said mounting clip 106.

Selectively attaching said two brushes 108 to a portion of said two or more brush cables 110.

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Various changes in the details of the illustrated operational methods are possible without departing from the scope of the following claims. Some embodiments may combine the activities described herein as being separate steps. Similarly, one or more of the described steps may be omitted, depending upon the specific operational environment the method is being implemented in. It is to be understood that the above description is intended to be illustrative, and not restrictive. For example, the above-described embodiments may be used in combination with each other. Many other embodiments will be apparent to those of skill in the art upon reviewing the above description. The scope of the invention should, therefore, be determined with reference to the appended claims, along with the full scope of equivalents to which such claims are entitled. In the appended claims, the terms “including” and “in which” are used as the plain-English equivalents of the respective terms “comprising” and “wherein.”

The invention claimed is:

1. A surface sanitizing system for cleaning a portion of an ice machine with a bipolar ions, wherein, said surface sanitizing system comprises a plugs, a power lines, an ion generation power module, a two or more brush cables, a two brushes, a brush container and a mounting clip; said plugs selectively attaches to a power source and provides electricity for running said surface sanitizing system; said power lines selectively attach said plugs to said ion generation power module; said two or more brush cables selectively attach said ion generation power module to said two brushes; a female containment portions selectively holds said two brushes within a portion of said brush container; said two brushes selectively attach to a portion of said two or more brush cables; said brush container selectively clips into said mounting clip; said mounting clip selectively attaches to a portion of an ice maker; and said surface sanitizing system comprising a one or more steps comprising installing said mounting clip into a portion of said ice machine, installing a portion of said two brushes into said brush container, attaching said two brushes to said two or more brush cables, said two or more brush cables to said ion generation power module, said ion generation power module to said power lines, said power lines to said plugs, and said plugs to said power source, energizing said plugs with said power source, emitting said bipolar ions with said two brushes into a portion of said ice machine, and preventing the spread of unwanted bacteria, fungus, and yeast within a portion of said ice machine with said bipolar ions.

2. A surface sanitizing system for cleaning a portion of an ice machine with a bipolar ions, wherein, said surface sanitizing system comprises a plugs, a power lines, an ion generation power module, a two or more brush cables, a two brushes and a mounting clip; said plugs selectively attaches to a power source and provides electricity for running said surface sanitizing system; said power lines selectively attach said plugs to said ion generation power module; said two or more brush cables selectively attach said ion generation power module to said two brushes; and said two brushes selectively attach to a portion of said two or more brush cables.

3. The surface sanitizing system from claim 2, wherein: said surface sanitizing system further comprises a brush container; a female containment portions selectively holds said two brushes within a portion of said brush container;

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said mounting clip selectively attaches to a portion of an ice maker; and
said surface sanitizing system comprising a one or more steps comprising
installing said mounting clip into a portion of said ice machine,
installing a portion of said two brushes into said brush container,
attaching said two brushes to said two or more brush cables, said two or more brush cables to said ion generation power module, said ion generation power module to said power lines, said power lines to said plugs, and said plugs to said power source,
energizing said plugs with said power source,
emitting said bipolar ions with said two brushes into a portion of said ice machine, and
preventing the spread of unwanted bacteria, fungus, and yeast within a portion of said ice machine with said bipolar ions.

4. The surface sanitizing system from claim 2, wherein: said surface sanitizing system further comprises a brush container;
a female containment portions selectively holds said two brushes within a portion of said brush container; and said mounting clip selectively attaches to a portion of an ice maker.

5. The surface sanitizing system from claim 4, wherein: said brush container selectively clips into said mounting clip.

6. The surface sanitizing system from claim 4, wherein: said mounting clip selectively attaches to a portion of said ice maker; and
said surface sanitizing system is configured to protect a portion of said ice machine by:
installing said mounting clip into a portion of said ice machine,
installing a portion of said two brushes into said brush container,
attaching said two brushes to said two or more brush cables, said two or more brush cables to said ion generation power module, said ion generation power module to said power lines, said power lines to said plugs, and said plugs to said power source,
energizing said plugs with said power source,
emitting said bipolar ions with said two brushes into a portion of said ice machine, and

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preventing the spread of unwanted bacteria, fungus, and yeast within a portion of said ice machine with said bipolar ions.

7. An ice machine cleaning method for cleaning a portion of an ice machine with a bipolar ions generated by an surface sanitizing system, comprising:
installing a mounting clip of said surface sanitizing system into a portion of said ice machine;
installing a portion of a two brushes into a brush container;
attaching said two brushes to a two or more brush cables, said two or more brush cables to an ion generation power module, said ion generation power module to a power lines, said power lines to a plugs, and said plugs to a power source;
energizing said plugs with said power source;
emitting said bipolar ions with said two brushes into a portion of said ice machine;
preventing the spread of unwanted bacteria, fungus, and yeast within a portion of said ice machine with said bipolar ions;
wherein said surface sanitizing system comprises said plugs, said power lines, said ion generation power module, said two or more brush cables, said two brushes said brush container and said mounting clip;
wherein said plugs selectively attaches to said power source and provides electricity for running said surface sanitizing system;
wherein said power lines selectively attach said plugs to said ion generation power module;
wherein said two or more brush cables selectively attach said ion generation power module to said two brushes;
wherein a female containment portions selectively holds said two brushes within a portion of said brush container; and
wherein said mounting clip selectively attaches to a portion of an ice maker.

8. The ice machine cleaning method from claim 7, wherein:
selectively clipping said brush container into said mounting clip.

9. The ice machine cleaning method from claim 7, wherein:
selectively attaching said two brushes to a portion of said two or more brush cables.

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