bacterial eradication in a storage compartment, wherein clogging, etc. does not occur, or an (home electrical) appliance, such as a refrigerator, an air conditioner, etc., equipped with the electrostatic atomizing apparatus.

[0029] Additionally, it is an object of the present invention to provide especially an air conditioner which can attain the above-mentioned objects among these (home electrical) appliances.

Solution to Problem

[0030] The air conditioner according to an aspect of the present invention includes:

an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path;

an atomizing apparatus including a discharge electrode, an electrode holding part that holds or houses the discharge electrode, a fixing means that prevents the discharge electrode from moving, and a conducting member that conducts electricity to the discharge electrode, wherein mist is generated at the discharge electrode~~the atomizing apparatus generating mist~~ by applying a voltage to the discharge electrode; and

a filter provided between the air suction port and the heat exchanger,~~ and~~

wherein the discharge electrode, the electrode holding part, the fixing means, and the conducting member of the atomizing apparatus are integrally formed, in a state of the discharge electrode pressed to the electrode holding part side by the fixing means, the atomizing apparatus is placed on a downstream side of the filter with respect to an airflow.

[0030a] The air conditioner according to another aspect of the present invention includes: an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path; an atomizing apparatus including a discharge electrode, an electrode holding part that holds or houses the discharge electrode, a fixing means that prevents the discharge electrode

from moving, and a conducting member that conducts electricity to the discharge electrode, the atomizing apparatus generating mist by applying a voltage to the discharge electrode; a filter provided between the air suction port and the heat exchanger; and a means that measures an amount of used electricity, wherein the discharge electrode, the electrode holding part, the fixing means, and the conducting member of the atomizing apparatus are integrally formed, in a state of the discharge electrode pressed to the electrode holding part side by the fixing means, the atomizing apparatus is placed on a downstream side of the filter with respect to an airflow, and wherein the amount of used electricity, an electricity expense, or an amount of carbon dioxide emission is displayed on a design panel of a front face of the indoor unit, or on a remote controller whereby operation, stop, and temperature setting, etc. are performed.

[0030b] The air conditioner according to another aspect of the present invention includes: an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path; an atomizing apparatus including a discharge electrode, an electrode holding part that holds or houses the discharge electrode, a fixing means that prevents the discharge electrode from moving, and a conducting member that conducts electricity to the discharge electrode, the atomizing apparatus generating mist by applying a voltage to the discharge electrode; a filter provided between the air suction port and the heat exchanger; and a measuring means that measures a current use period, wherein the discharge electrode, the electrode holding part, the fixing means, and the conducting member of the atomizing apparatus are integrally formed, in a state of the discharge electrode pressed to the electrode holding part side by the fixing means, the atomizing apparatus is placed on a downstream side of the filter with respect to an airflow, and wherein a standard use period of a main body of an appliance such

as the atomizing apparatus, the indoor unit, and an outdoor unit is set, and the standard use period and the current use period measured by the measuring means are displayed on the indoor unit, or on a remote controller whereby operation, stop, and temperature setting, etc. are performed.

[0030c] The air conditioner according to another aspect of the present invention includes: an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path; an atomizing apparatus including a discharge electrode, an electrode holding part that holds or houses the discharge electrode, a fixing means that prevents the discharge electrode from moving, and a conducting member that conducts electricity to the discharge electrode, the atomizing apparatus generating mist by applying a voltage to the discharge electrode; a filter provided between the air suction port and the heat exchanger; and a measuring means that measures a current use period, wherein the discharge electrode, the electrode holding part, the fixing means, and the conducting member of the atomizing apparatus are integrally formed, in a state of the discharge electrode pressed to the electrode holding part side by the fixing means, the atomizing apparatus is placed on a downstream side of the filter with respect to an airflow, and wherein a standard use period of a main body of an appliance such as the atomizing apparatus, the indoor unit, and an outdoor unit is set, a remaining use period usable with respect to the standard use period is obtained from the current use period measured by the measuring means, and the remaining use period is displayed on the indoor unit, or on a remote controller whereby operation, stop, and temperature setting, etc. are performed.

[0030d] The air conditioner according to another aspect of the present invention includes: an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and

heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path; an atomizing apparatus including a discharge electrode, an electrode holding part that holds or houses the discharge electrode, a fixing means that prevents the discharge electrode from moving, and a conducting member that conducts electricity to the discharge electrode, wherein mist is generated at the discharge electrode by applying a voltage to the discharge electrode; and a filter provided between the air suction port and the heat exchanger, wherein the fixing means and the electrode holding part include fixing parts, and wherein the fixing means, the discharge electrode, and the electrode holding part, of the atomizing apparatus are integrally formed, the fixing part of the fixing means is fixed or held to the fixing part of the electrode holding part by pressing the fixing means to the electrode holding part side, and the atomizing apparatus is placed on a downstream side of the filter with respect to an airflow.

[0030e] The air conditioner according to another aspect of the present invention includes: an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path; an atomizing apparatus including a discharge electrode including a protrusion part to where water is supplied from a main body part, an electrode holding part that holds or houses the discharge electrode, a fixing means that prevents the discharge electrode from moving, and a conducting member that conducts electricity to the discharge electrode, the atomizing apparatus generating mist by applying a voltage to the discharge electrode; a filter provided between the air suction port and the heat exchanger; a drain pan provided below the heat exchanger; and an air trunk that guides the mist generated by the atomizing apparatus to the air outlet, wherein the discharge electrode, the electrode holding part, and the fixing means of the atomizing apparatus are integrally formed, in a state of the main body part of the discharge electrode pressed to the electrode holding part side by the fixing means, the

atomizing apparatus is placed downstream of the filter and above the drain pan, and the air trunk guides the mist from a section where the atomizing apparatus is placed to the air outlet or to the air conveying path on the upstream side of the air outlet.

Advantageous Effects of Invention

[0031] According to the present invention, easy and compact assembly of the atomizing apparatus is achieved, and easy installation of the atomizing apparatus to a wall surface or a chassis is possible.

Brief Description of Drawings

[0032] Fig. 1 is a front view of a refrigerator 1 describing an embodiment of the

CLAIMS

1. An air conditioner comprising:

an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path;

an atomizing apparatus including a discharge electrode, an electrode holding part that holds or houses the discharge electrode, a fixing means that prevents the discharge electrode from moving, and a conducting member that conducts electricity to the discharge electrode, the atomizing apparatus generating mist by applying a voltage to the discharge electrode; and

a filter provided between the air suction port and the heat exchanger,

wherein the discharge electrode, the electrode holding part, the fixing means, and the conducting member of the atomizing apparatus are integrally formed, in a state of the discharge electrode pressed to the electrode holding part side by the fixing means, the atomizing apparatus is placed on a downstream side of the filter with respect to an airflow.

2. The air conditioner according to claim 1, wherein

the discharge electrode includes a main body part and a protrusion part, and

the main body part of the discharge electrode is pressed to the electrode holding part side by the fixing means via the conducting member.

3. The air conditioner according to claim 1, wherein the fixing means includes an electrode pressing portion that prevents the discharge electrode from moving and a conducting member pressing part that presses the discharge electrode via the conducting

member.

4. An air conditioner comprising:

an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path;

an atomizing apparatus including a discharge electrode including a protrusion part to where water is supplied from a main body part, an electrode holding part that holds or houses the discharge electrode, a fixing means that prevents the discharge electrode from moving, and a conducting member that conducts electricity to the discharge electrode, the atomizing apparatus generating mist by applying a voltage to the discharge electrode;

a filter provided between the air suction port and the heat exchanger;

a drain pan provided below the heat exchanger; and

an air trunk that guides the mist generated by the atomizing apparatus to the air outlet, wherein

the discharge electrode, the electrode holding part, and the fixing means of the atomizing apparatus are integrally formed, in a state of the main body part of the discharge electrode pressed to the electrode holding part side by the fixing means, the atomizing apparatus is placed downstream of the filter and above the drain pan, and

the air trunk guides the mist from a section where the atomizing apparatus is placed to the air outlet or to the air conveying path on the upstream side of the air outlet.

5. The air conditioner according to claim 4, wherein

the atomizing apparatus is placed in an airflow between the filter and the heat

exchanger, and

the air trunk guides the mist generated by the atomizing apparatus between the filter and the heat exchanger to the air outlet or to the air conveying path.

6. The air conditioner according to claim 1 or claim 4, wherein the conducting member conducts electricity to the discharge electrode by interleaving the discharge electrode.

7. The air conditioner according to claim 1 or claim 4, wherein

the electrode holding part is provided with a notch or a hole in a wall surface, and

the discharge electrode is protruding out of the wall surface via the notch or the hole in the wall surface or via an upper end of the wall surface.

8. An air conditioner comprising:

an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path;

an atomizing apparatus including a discharge electrode that generates mist when a voltage is applied using water supplied from a water supply means, an electrode holding part that holds or houses the discharge electrode, and a fixing means that prevents the discharge electrode from moving;

a filter provided between the air suction port and the heat exchanger; and

a drain pan provided below the heat exchanger,

wherein the atomizing apparatus is placed downstream of the filter and above

the drain pan.

9. The air conditioner according to claim 8, wherein the atomizing apparatus includes a water discharge spout, and water discharged from the water discharge spout is discharged to the drain pan.

10. The air conditioner according to claim 8, wherein the discharge electrode, the electrode holding part, and the water supply means of the atomizing apparatus are integrally formed.

11. The air conditioner according to claim 8, wherein

the water supply means includes a heat dissipating part and a heat absorbing part where dew condensation water is generated by cooling the heat dissipating part, and

the heat dissipating part is placed nearer to the air suction port side than the heat absorbing part.

12. The air conditioner according to claim 1, claim 4, or claim 8, wherein a status or a strength of an operation of the atomizing apparatus is displayed on a design surface of a front surface of the indoor unit, or on a display unit of a remote controller whereby operation, stop, and temperature setting, etc. are performed.

13. The air conditioner according to claim 1, claim 4, or claim 8, comprising a measuring means that measures a current use period, wherein a standard use period of a main body of an appliance such as the atomizing apparatus, the indoor unit, and an outdoor unit is set, and the standard use period and the current use period measured by

the measuring means are displayed on a design panel of a front face of the indoor unit, or on a remote controller whereby operation, stop, and temperature setting, etc. are performed.

14. The air conditioner according to claim 1, claim 4, or claim 8, comprising a measuring means that measures a current use period, wherein a standard use period of a main body of an appliance such as the atomizing apparatus, the indoor unit, and an outdoor unit is set, a remaining use period usable with respect to the standard use period is obtained from the current use period measured by the measuring means, and the remaining use period is displayed on a design panel of a front face of the indoor unit, or on a remote controller whereby operation, stop, and temperature setting, etc. are performed.

15. The air conditioner according to claim 1, claim 4, or claim 8, comprising a means that measures an amount of used electricity, wherein the amount of used electricity, an electricity expense, or an amount of carbon dioxide emission is displayed on a design panel of a front face of the indoor unit, or on a remote controller whereby operation, stop, and temperature setting, etc. are performed.

16. The air conditioner according to claim 1 or claim 8, comprising an air trunk that guides mist generated by the atomizing apparatus to the air outlet, wherein the air trunk guides the mist from a section where the atomizing apparatus is placed to the air outlet or to the air conveying path on an upstream side of the air outlet.

17. The air conditioner according to claim 16, wherein

the atomizing apparatus is placed in an airflow between the filter and the heat exchanger, and

the air trunk guides the mist generated by the atomizing apparatus between the filter and the heat exchanger to the air outlet or to the air conveying path.

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18. The air conditioner according to claim 1, claim 4, or claim 8, wherein the conducting member conducts electricity to the discharge electrode by interleaving the discharge electrode.

CLAIMS

1. An air conditioner comprising:

an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path;

an atomizing apparatus including a discharge electrode, an electrode holding part that holds or houses the discharge electrode, a fixing means that prevents the discharge electrode from moving, and a conducting member that conducts electricity to the discharge electrode, wherein mist is generated at the discharge electrode by applying a voltage to the discharge electrode; and

a filter provided between the air suction port and the heat exchanger,

wherein the discharge electrode, the electrode holding part, the fixing means, and the conducting member of the atomizing apparatus are integrally formed, in a state of the discharge electrode pressed to the electrode holding part side by the fixing means, the atomizing apparatus is placed on a downstream side of the filter with respect to an airflow.

2. An air conditioner comprising:

an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path;

an atomizing apparatus including a discharge electrode, an electrode holding part that holds or houses the discharge electrode, a fixing means that prevents the discharge electrode from moving, and a conducting member that conducts electricity to the discharge electrode, the atomizing apparatus generating mist by applying a voltage

to the discharge electrode;

a filter provided between the air suction port and the heat exchanger; and

a means that measures an amount of used electricity,

wherein the discharge electrode, the electrode holding part, the fixing means, and the conducting member of the atomizing apparatus are integrally formed, in a state of the discharge electrode pressed to the electrode holding part side by the fixing means, the atomizing apparatus is placed on a downstream side of the filter with respect to an airflow, and

wherein the amount of used electricity, an electricity expense, or an amount of carbon dioxide emission is displayed on a design panel of a front face of the indoor unit, or on a remote controller whereby operation, stop, and temperature setting, etc. are performed.

3. An air conditioner comprising:

an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path;

an atomizing apparatus including a discharge electrode, an electrode holding part that holds or houses the discharge electrode, a fixing means that prevents the discharge electrode from moving, and a conducting member that conducts electricity to the discharge electrode, the atomizing apparatus generating mist by applying a voltage to the discharge electrode;

a filter provided between the air suction port and the heat exchanger; and

a measuring means that measures a current use period,

wherein the discharge electrode, the electrode holding part, the fixing means,

and the conducting member of the atomizing apparatus are integrally formed, in a state of the discharge electrode pressed to the electrode holding part side by the fixing means, the atomizing apparatus is placed on a downstream side of the filter with respect to an airflow, and

wherein a standard use period of a main body of an appliance such as the atomizing apparatus, the indoor unit, and an outdoor unit is set, and the standard use period and the current use period measured by the measuring means are displayed on the indoor unit, or on a remote controller whereby operation, stop, and temperature setting, etc. are performed.

4. An air conditioner comprising:

an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path;

an atomizing apparatus including a discharge electrode, an electrode holding part that holds or houses the discharge electrode, a fixing means that prevents the discharge electrode from moving, and a conducting member that conducts electricity to the discharge electrode, the atomizing apparatus generating mist by applying a voltage to the discharge electrode;

a filter provided between the air suction port and the heat exchanger; and

a measuring means that measures a current use period,

wherein the discharge electrode, the electrode holding part, the fixing means, and the conducting member of the atomizing apparatus are integrally formed, in a state of the discharge electrode pressed to the electrode holding part side by the fixing means, the atomizing apparatus is placed on a downstream side of the filter with respect to an

airflow, and

wherein a standard use period of a main body of an appliance such as the atomizing apparatus, the indoor unit, and an outdoor unit is set, a remaining use period usable with respect to the standard use period is obtained from the current use period measured by the measuring means, and the remaining use period is displayed on the indoor unit, or on a remote controller whereby operation, stop, and temperature setting, etc. are performed.

5. The air conditioner according to any one of claims 1 to 4, wherein the fixing means and the electrode holding part include fixing parts,

wherein the fixing part of the fixing means is fixed or held to the fixing part of the electrode holding part by pressing the fixing means to the electrode holding part side.

6. An air conditioner comprising:

an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path;

an atomizing apparatus including a discharge electrode, an electrode holding part that holds or houses the discharge electrode, a fixing means that prevents the discharge electrode from moving, and a conducting member that conducts electricity to the discharge electrode, wherein mist is generated at the discharge electrode by applying a voltage to the discharge electrode; and

a filter provided between the air suction port and the heat exchanger,

wherein the fixing means and the electrode holding part include fixing parts,

and

wherein the fixing means, the discharge electrode, and the electrode holding part, of the atomizing apparatus are integrally formed, the fixing part of the fixing means is fixed or held to the fixing part of the electrode holding part by pressing the fixing means to the electrode holding part side, and the atomizing apparatus is placed on a downstream side of the filter with respect to an airflow.

7. The air conditioner according to claim 5 or claim 6, wherein the fixing part of the fixing means and the fixing part of the electrode holding part form a fitting structure or a catching structure.

8. The air conditioner according to any one of claims 5 to 7, wherein the fixing part of the fixing means is a nail part that protrudes from the fixing means, and the nail part is caught in the fixing part of the electrode holding part so that the fixing means is fixed or held to the electrode holding part.

9. The air conditioner according to any one of claims 1 to 8, wherein

the discharge electrode includes a main body part and a protrusion part, and

the main body part of the discharge electrode is pressed to the electrode holding part side by the fixing means via the conducting member.

10. The air conditioner according to any one of claims 1 to 9, wherein the fixing means includes an electrode pressing portion that prevents the discharge electrode from moving and a conducting member pressing part that presses the discharge electrode via the conducting member.

11. The air conditioner according to any one of claims 1 to 10, comprising a drain pan provided below the heat exchanger,

wherein the atomizing apparatus is placed downstream of the filter and above the drain pan.

12. The air conditioner according to any one of claims 1 to 11, comprising an air trunk that guides the mist generated by the atomizing apparatus to the air outlet.

13. An air conditioner comprising:

an indoor unit provided inside a room, the indoor unit blowing air taken in from an air suction port and heat-exchanged by a heat exchanger, from an air outlet into the room via an air conveying path;

an atomizing apparatus including a discharge electrode including a protrusion part to where water is supplied from a main body part, an electrode holding part that holds or houses the discharge electrode, a fixing means that prevents the discharge electrode from moving, and a conducting member that conducts electricity to the discharge electrode, the atomizing apparatus generating mist by applying a voltage to the discharge electrode;

a filter provided between the air suction port and the heat exchanger;

a drain pan provided below the heat exchanger; and

an air trunk that guides the mist generated by the atomizing apparatus to the air outlet, wherein

the discharge electrode, the electrode holding part, and the fixing means of the atomizing apparatus are integrally formed, in a state of the main body part of the

discharge electrode pressed to the electrode holding part side by the fixing means, the atomizing apparatus is placed downstream of the filter and above the drain pan, and

the air trunk guides the mist from a section where the atomizing apparatus is placed to the air outlet or to the air conveying path on the upstream side of the air outlet.

14. The air conditioner according to claim 12 or claim 13, wherein

the atomizing apparatus is placed in an airflow between the filter and the heat exchanger, and

the air trunk guides the mist generated by the atomizing apparatus between the filter and the heat exchanger to the air outlet or to the air conveying path.

15. The air conditioner according to any one of claims 1 to 14, wherein the conducting member conducts electricity to the discharge electrode by interleaving the discharge electrode.

16. The air conditioner according to any one of claims 1 to 15, wherein

the electrode holding part is provided with a notch or a hole in a wall surface, and

the discharge electrode is protruding out of the wall surface via the notch or the hole in the wall surface or via an upper end of the wall surface.

17. The air conditioner according to any one of claims 1 to 16, wherein a status or a strength of an operation of the atomizing apparatus is displayed on a design surface of a front surface of the indoor unit, or on a display unit of a remote controller whereby operation, stop, and temperature setting, etc. are performed.

18. The air conditioner according to any one of claims 1 to17, wherein a standard use period of a main body of an appliance such as the atomizing apparatus, the indoor unit, and an outdoor unit is set, and the standard use period is displayed.

19. The air conditioner according to claim 1, claim 2, claim 6, or claim 13, comprising a measuring means that measures a current use period, wherein a standard use period of a main body of an appliance such as the atomizing apparatus, the indoor unit, and an outdoor unit is set, and the standard use period and the current use period measured by the measuring means are displayed on the indoor unit, or on a remote controller whereby operation, stop, and temperature setting, etc. are performed.

20. The air conditioner according to claim 1, claim 2, claim 6, or claim 13, comprising a measuring means that measures a current use period, wherein a standard use period of a main body of an appliance such as the atomizing apparatus, the indoor unit, and an outdoor unit is set, a remaining use period usable with respect to the standard use period is obtained from the current use period measured by the measuring means, and the remaining use period is displayed on the indoor unit, or on a remote controller whereby operation, stop, and temperature setting, etc. are performed.

21. The air conditioner according to claim 1, claim 2, claim 6, or claim 13, comprising a measuring means that measures a current use period, wherein a standard use period of a main body of an appliance such as the atomizing apparatus, the indoor unit, and an outdoor unit is set, a remaining use period usable with respect to the standard use period is obtained from the current use period measured by the measuring

means, and when the remaining use period surpasses a predetermined rate of the standard use period, a message that encourages checkup, exchange or replacement is displayed, by a figure or a text, on the indoor unit, or on a remote controller whereby operation, stop, and temperature setting, etc. are performed.

22. The air conditioner according to claim 1, or any one of claims 3 to 21, wherein the amount of used electricity, an electricity expense, or an amount of carbon dioxide emission is displayed on a design panel of a front face of the indoor unit, or on a remote controller whereby operation, stop, and temperature setting, etc. are performed.

23. The air conditioner according to claim 12 or claim 13, wherein the air trunk guides the mist from a section where the atomizing apparatus is placed to the air outlet or to the air conveying path on an upstream side of the air outlet.