AROMA-DIFFUSING HEATING DEVICE USING A REPLACEABLE AROMA CAPSULE AND THE AROMA CAPSULE

1. Field of the Invention:

The present invention relates to scent releasing devices and more specifically, to an aroma-diffusing heating device that uses a replaceable aroma capsule. The invention relates also to the aroma capsule.

2. Description of the Related Art:

In modern society, in order to remove the smell in the air, or to enrich the spice of life, many people started using fragrance products (for example, aromatic wax, essential oils). When in use, a user needs to remove the aromatic wax from the aromatic wax container and put it in an accommodation chamber in a heater, and then electrically conduct the heater to heat the aromatic wax, causing the aromatic wax to give off fragrance.

The aforesaid application method has drawbacks. During application, the user must remove the aromatic wax from the aromatic wax container and then put the aromatic wax in the accommodation chamber in the heater carefully, avoiding direct contact of the hands with the aromatic wax. After the aromatic wax having been put in the accommodation chamber in the heater, the aromatic wax may be forced out of the heater accidentally upon an

impact. Further, after the aromatic wax in the accommodation chamber in the heater is used up, the user needs to clean the accommodation chamber. If the accommodation chamber is not cleaned after each use, a new supply of aromatic wax will be mixed with the residual aromatic wax in the accommodation chamber, giving a bad smell. Further, if the accommodation chamber is formed of a fragile material (for example, ceramics), it may be broken easily during cleaning.

Therefore, it is desirable to provide an aroma-diffusing design that eliminates the drawbacks of the aforesaid prior art design.

SUMMARY OF THE INVENTION

The present invention has been accomplished under the circumstances in view. It is therefore an object of the present invention to provide an aroma-diffusing heating device, which is configured to heat an aroma capsule to give off fragrance, wherein the aroma capsule is replaceable with a new one when used up.

To achieve this and other objects of the present invention, an aroma-diffusing heating device comprises a heating base defining a top accommodation open chamber, heating base can be made from ceramic, wooden, glass or plastic, and an aroma capsule detachably accommodated in the top accommodation open chamber of the heating base and heatable by the heating base to give off

fragrance. The aroma capsule includes a heat-transfer container defining a top opening, an aromatic substance, for example, solid aromatic wax held in the heat-transfer container, and a breathing film bonded to said heat-transfer container to keep said aromatic substance in said heat-transfer container, said breathing film having open spaces defined therein. The aroma substance is heated by aroma-diffusing heating device and disperses scent. It the aroma-diffusing heating device and the aroma capsule are toppled by chance, the melted scented wax is blocked by the breathing film form flowing to a region outside of the aroma-diffusing heating device, the aroma-diffusing heating device is thus safe to use.

Further, the aroma capsule further comprises a sealing film bonded to said heat-transfer container to seal said aromatic substance in said heat-transfer container.

Further, the aroma capsule is configured to fit the shape of the top accommodation open chamber of the heating base.

Further, the heating base comprises a top flange raised from the top wall thereof.

Further, the heat-transfer container of the aroma capsule comprises a rim extending around the top opening.

Further, the aroma-diffusing heating device further comprises: a bottom cover disposed on a bottom of the heating base; a power circuit board disposed on the bottom cover; a protection

cover supported by the bottom cover; a resistor placed on the protection cover and electrically connected to the power circuit board for generating heat; and a receiving unit, the receiving unit center defining said top accommodation open chamber, the receiving unit further comprises a heat conductive unit disposed at top accommodation open chamber inner side thereof, the heat conductive unit having one side in contact with one side of the resistor, the heat conductive unit reverse side in contact with the aroma capsule.

The invention also provides an aroma capsule, comprising: a heat-transfer container defining a top opening; an aromatic substance held in said heat-transfer container; and a breathing film bonded to said heat-transfer container over said top opening of said heat-transfer container above said aromatic substance in said heat-transfer container, said breathing film having open spaces defined therein.

Further, the aroma capsule comprises a sealing film bonded to said heat-transfer container over the top opening to seal said aromatic substance in said heat-transfer container and said breathing film under said sealing film.

Further, the aroma capsule comprises a breathing film and/or a sealing film bonded to said rim of the heat-transfer container to seal said aromatic substance in said heat-transfer

container and said breathing film under said sealing film.

In an embodiment, an aroma capsule, comprising: a heat-transfer container defining a top opening; an aromatic substance held in said heat-transfer container; and a sealing film bonded to said heat-transfer container over the top opening to seal said aromatic substance in said heat-transfer container.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded view of an alternate form of the aroma-diffusing heating device in accordance with the present invention.

FIG. 2 is an exploded view of the aroma capsule shown in FIG. 1.

FIG. 3 corresponds to FIG. 2, illustrating the breathing film sealed to the heat-transfer container.

FIG. 4 is a sectional side view of FIG. 3.

FIG. 5 is an exploded view of a aroma-diffusing heating device having a removable aroma capsule for an aroma substance to be contained therein.

FIG. 6 is an elevational view of an aroma-diffusing heating device in accordance with the present invention.

FIG. 7 is a cross-sectional view of the aroma-diffusing heating device shown in FIG. 6, respectively.

FIG. 8 is an exploded view of an aroma-diffusing heating

device in accordance with the present invention.

FIG. 9 is an exploded view of the aroma capsule of the aroma-diffusing heating device in accordance with the present invention.

FIG. 10 is a sectional side view of FIG. 9.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGS. 1-4, an aroma-diffusing heating device **1** in accordance with the present invention is shown having an aroma capsule **12** therein. The aroma-diffusing heating device **1** comprises a heating base **10** defining a top accommodation open chamber **100**, said aroma capsule **12** detachably accommodated in the top accommodation open chamber **100** and heatable by said heating base to give off fragrance.

The aroma capsule **12** comprises a heat-transfer container **120** contact with the heating base **10** and defining a top opening **1200**, an aromatic substance **122** (for example, aromatic wax in this preferred embodiment, aromatic block, essential oil, or perfume) put in the heat-transfer container **120**, and a breathing film **126** bonded to said heat-transfer container **120** over top opening **1200** to keep said aromatic substance **122** in said heat-transfer container **120**, said breathing film **126** having open spaces **1263** defined therein, the aroma substance **122** is heated by aroma-diffusing heating device **1** and disperses scent through the open spaces **1263** .

If the aroma-diffusing heating device **1** and the aroma capsule **12** are toppled by chance, the melted scented wax is blocked by the breathing film **126** form flowing to a region outside of the aroma-diffusing heating device **1**, the aroma-diffusing heating device **1** is thus safe to use.

In an embodiment, the aroma capsule **12** further comprises a sealing film **124** bonded to the heat-transfer container **120** over top opening **1200** to seal the aromatic substance **122** in the heat-transfer container **120**, maintaining the quality of the aromatic substance **122** and said breathing film **126** under said sealing film **124** .

In an embodiment, said heat-transfer container **120** of said aroma capsule **12** comprises a rim **1202** extending around said top opening **1200**, and said sealing film **124** is bonded to said rim **1202** of said heat-transfer container **120** and said breathing film **126** under said sealing film **124**.

In an embodiment, said aroma capsule **12** further comprises a rim **1202** extending around said top opening **1200**, and said breathing film **126** has a border edge **1261**, the border edge **1261** can be bonded to the rim **1202** of the heat-transfer container **120** above the top opening **1200**.

Said heat-transfer container **120** is one selected from the material group consisting of metal, or plastic. In an embodiment,

the heat-transfer container **120** is an aluminum foil bowl. The aluminum foil bowl of the aroma capsule **12** is replaceable with a new one when used up.

During application, the user simply needs to remove the sealing film **124** from the rim **1202** of the heat-transfer container **120** and then electrically conducting the heating base **10** to heat the aromatic substance **122**, causing the aromatic substance **122** to give off fragrance into the outside open air.

According to the present invention, the heating base **10** is configured to heat the aromatic substance **122** to about 40~70°C, or preferably 50~55°C. Within this temperature range, commercial aromatic substances can give off fragrance without destroying the quality. Further, under this temperature range of 40~70°C, the heat-transfer container **120** is maintained intact and can effectively transfer heat from the heating base **10** to the aromatic substance **122**(aromatic wax). The heat-transfer container **120** can be selected from the material group of ceramics, metals, and hard plastics. Preferably, the heat-transfer container **120** is made from a light metal, for example, aluminum foil for the advantages of light weight, high toughness and high thermal conductivity, avoiding the disadvantage of high fragileness of pottery bowls and glass containers. Further, the sealing film **124** seals the aromatic substance **122** in the top opening **1200**, maintaining the quality of

the aromatic substance **122**.

Referring to FIGS. 5-7, the aroma-diffusing heating device **1** further comprises a bottom cover **142** disposed on a bottom of the heating base **10**, a power circuit board **16** disposed on the bottom cover **142**; a protection cover **20** supported by the bottom cover **142**, a resistor **22** placed on the protection cover **20** and electrically connected to the power circuit board **16** for generating heat, and the heating base **10** further comprises a receiving unit **11**, the receiving unit **11** center defining said top accommodation open chamber **100**, the receiving unit **11** further comprises a heat conductive unit **111** disposed at top accommodation open chamber **100** inner side thereof, the heat conductive unit **111** having one side in contact with one side of the resistor **22**, the heat conductive unit **111** reverse side in contact with the aroma capsule **12**.

The heat conductive unit **111** can be selected from the material group of metals, ceramics, porcelains or glasses.

In an embodiment, the aroma-diffusing heating device **1** further comprises a light emitting diode circuit board **34** mounted on the bottom cover **142** and electrically connected to the power circuit board **16** for emitting light.

In an embodiment, the receiving unit **11** is made of a material pervious to light, including transparent or translucent plastic, acrylic, glass and light-pervious ceramics.

In an embodiment, the aroma-diffusing heating device **1** further comprises a insulator **23** mounted between the receiving unit **11** and the heat conductive unit **111**, for insulate the heat from the resistor **22**, heat conductive unit **111** to the receiving unit **11**.

Referring to the cross-sectional view of the aroma capsule **12** shown in FIG. 6, as stated above, the aromatic substance **122** is sealed in the aroma capsule **12** and the aroma capsule **12** is accommodated in the top accommodation open chamber **100** of the heating base **10** of the aroma-diffusing heating device **1**. When using the aroma-diffusing heating device **1**, the user simply needs to remove the sealing film **124** from the heat-transfer container **120** without contacting the aromatic substance **122**. Further, after the aromatic substance **122** is used up, the user can put a new aroma capsule in the top accommodation open chamber **100** of the heating base **10** of the aroma-diffusing heating device **1** as a substitute and needs not to wash the heat-transfer container **120** of the used aroma capsule **12**. Further, because the user does not need to clean the heat-transfer container **120**, the user needs not to worry about breaking down the heat-transfer container **120**. Further, the user needs not to prepare a container for holding essential oil. Further, different aroma capsules **12** designed to give off different good smells can be selectively used.

Further, the heat-transfer container **120** is configured to fit

the shape of the top accommodation open chamber **100** of the heating base **10** of the aroma-diffusing heating device **1** so that the heat-transfer container **120** can be kept in close contact with the periphery of the top accommodation open chamber **100** of the heating base **10** of the aroma-diffusing heating device **1** to transfer heat energy from the heating base **10** to the aromatic substance **122** rapidly.

In an embodiment, the heating base **10** comprises a top flange **102** protruded from the top wall thereof around the top accommodation open chamber **100**. The top flange **102** has the inside wall thereof smoothly downwardly curved toward the top accommodation open chamber **100**. Thus, the user can insert the fingers along the smoothly downwardly curved inside wall of the top flange **102** to pick up the aroma capsule **12** from the top accommodation open chamber **100** conveniently. Further, the heat-transfer container **120** defines a rim **1202** around the top opening **1200**. The rim **1202** can be configured to extend in a horizontal or vertical manner relative to the elevation of the top opening **1200**. Thus, the user can grip the rim **1202** with the fingers to remove the aroma capsule **12** from the accommodation chamber **100** of the heating base **10** of the aroma-diffusing heating device **1** conveniently.

In an embodiment, the aroma-diffusing heating device

further comprises a cap **14** capped on the heating base **10** over the aroma capsule **12**, the cap **14** has an air vent **140** (or a light vent) for dispersing the aroma of the aromatic substance **122** into the ambient, the cap **14** is made of a material pervious to light, after removal of the sealing film **124** from the heat-transfer container **120**.

FIGS. 1-4 illustrate the aroma capsule **12**, comprising: a heat-transfer container **120** defining a top opening **1200**; an aromatic substance **122** held in said heat-transfer container **120**; and a breathing film **126** bonded to said heat-transfer container **120** over the top opening **1200** of said heat-transfer container **120** above said aromatic substance **122** in said heat-transfer container **120**, said breathing film **126** having open spaces defined therein, the aroma substance **122** is heated by aroma-diffusing heating device **1** and disperses scent through the open spaces **1263**. It the aroma-diffusing heating device **1** and the aroma capsule **12** are toppled by chance, the melted scented wax is blocked by the breathing film **126** form flowing to a region outside of the aroma-diffusing heating device **1**, the aroma-diffusing heating device **1** is thus safe to use.

In an embodiment, the aroma capsule **12** further comprising a sealing film **124** bonded to said heat-transfer container **120** over the top opening to seal said aromatic substance **122** in said

heat-transfer container **120** and said breathing film **126** under said sealing film **124**.

In an embodiment, the aroma capsule further comprises a rim **1202** extending around said top opening **1200**, and said breathing film **126** is bonded to said rim **1202** of the heat-transfer container **120**, said aromatic substance **122** is an aromatic wax.

In an embodiment, the aroma capsule **12** further comprising a sealing film **124** bonded to said rim **1202** of the heat-transfer container **120** to seal said aromatic substance **122** in said heat-transfer container **120** and said breathing film **126** under said sealing film **124**.

Further, said breathing film **126** has the border edge thereof bonded to said rim **1202** of the heat-transfer container **120**.

Alternatively, the border edge **1261** of the breathing film **126** can be bonded to the inside wall of the heat-transfer container **120** above in the top opening **1200**.

Further, said aromatic substance **122** is an aromatic wax, fragrant block or balsam.

Referring to FIGS. 8-10, in an embodiment, an aroma capsule **12**, comprising: a heat-transfer container **120** defining a top opening; an aromatic substance **122** held in said heat-transfer container **120**; and

The sealing film **124** bonded to said heat-transfer container

120 to seal said aromatic substance **122** in said heat-transfer container **120**.

Referring to FIGS. 2-4, in an embodiment, the aroma capsule **12**, further comprising a breathing film **126** bonded to said heat-transfer container **120** to seal said aromatic substance **122** in said heat-transfer container **120** and said breathing film **126** under said sealing film **124**.

When compared to conventional aromatic heating devices, the aroma-diffusing heating device **1** in accordance with the present invention uses a aroma capsule **12** that can be replaced by a new one when used up, and therefore, the user needs not to prepare an extra aroma wax or essential oil container or to worry about breaking down the heat-transfer container, and will not touch the aroma wax or essential oil during replacement of the aroma wax or essential oil.

Although particular embodiment of the invention have been described in detail for purposes of illustration, various modifications and enhancements may be made without departing from the spirit and scope of the invention. Accordingly, the invention is not to be limited except as by the appended claims.

What the invention claimed is:

1. An aroma-diffusing heating device, comprising:

a heating base defining a top accommodation open chamber; and

an aroma capsule detachably accommodated in said top accommodation open chamber and heatable by said heating base to give off fragrance, said aroma capsule comprising a heat-transfer container accommodated in said top accommodation open chamber, said heat-transfer container defining a top opening, an aromatic substance held in said heat-transfer container, and a breathing film bonded to said heat-transfer container over the top opening to keep said aromatic substance in said heat-transfer container, said breathing film having open spaces defined therein.

2. The aroma-diffusing heating device as claimed in claim 1, wherein said aroma capsule further comprises a sealing film bonded to said heat-transfer container over the top opening to seal said aromatic substance in said heat-transfer container and said breathing film under said sealing film.

3. The aroma-diffusing heating device as claimed in claim 2, wherein said heat-transfer container of said aroma capsule comprises a rim extending around said top opening, and said sealing film is bonded to said rim of said heat-transfer container.

4. The aroma-diffusing heating device as claimed in claim 1,

wherein said heat-transfer container of said aroma capsule further comprises a rim extending around said top opening, and said breathing film has a border edge thereof bonded to said rim of said heat-transfer container.

5. The aroma-diffusing heating device as claimed in claim 4, further comprising a sealing film bonded to said rim of the heat-transfer container to seal said aromatic substance in said heat-transfer container and said breathing film under said sealing film.

6. The aroma-diffusing heating device as claimed in claim 1, wherein said breathing film is one selected from the material group consisting of cloth, nonwoven fabric, fiber cloth, woven fabric, porous plastic membrane or porous silicon rubber.

7. The aroma-diffusing heating device as claimed in claim 1, further comprising a cap capped on said heating base over said aroma capsule, the cap has an air vent.

8. The aroma-diffusing heating device as claimed in claim 1, wherein said aromatic substance is an aromatic wax.

9. The aroma-diffusing heating device as claimed in claim 1, wherein the heat-transfer container is an aluminum foil bowl.

10. The aroma-diffusing heating device as claimed in claim 1, further comprising:

a bottom cover disposed on a bottom of the heating base;

a power circuit board disposed on the bottom cover;

a protection cover supported by the bottom cover;

a resistor placed on the protection cover and electrically connected to the power circuit board for generating heat; and

the heating base further comprises a receiving unit, the receiving unit center defining said top accommodation open chamber, the receiving unit comprises a heat conductive unit disposed at top accommodation open chamber, the heat conductive unit having one side in contact with the resistor, the heat conductive unit reverse side in contact with the aroma capsule.

11. The aroma-diffusing heating device as claimed in claim 10, further comprising a light emitting diode circuit board mounted on the bottom cover and electrically connected to the power circuit board for emitting light.

12. The aroma-diffusing heating device as claimed in claim 11, wherein the receiving unit is made of a material pervious to light, including transparent or translucent plastic, acrylic, glass and light-pervious ceramics.

13. An aroma capsule, comprising:

a heat-transfer container defining a top opening;

an aromatic substance held in said heat-transfer container; and

a breathing film bonded to said heat-transfer container over

the top opening of said heat-transfer container above said aromatic substance in said heat-transfer container, said breathing film having open spaces defined therein.

14. The aroma capsule as claimed in claim 13, further comprising a sealing film bonded to said heat-transfer container over the top opening to seal said aromatic substance in said heat-transfer container and said breathing film under said sealing film.

15. The aroma capsule as claimed in claim 13, wherein said heat-transfer container comprises a rim extending around said top opening, and said breathing film is bonded to said rim.

16. The aroma capsule as claimed in claim 15, further comprising a sealing film bonded to said rim of the heat-transfer container to seal said aromatic substance in said heat-transfer container and said breathing film under said sealing film.

17. The aroma capsule as claimed in claim 15, wherein said breathing film has the border edge thereof bonded to said rim.

18. The aroma capsule as claimed in claim 13, wherein said aromatic substance is an aromatic wax.

19. The aroma capsule as claimed in claim 13, wherein said heat-transfer container is one selected from the material group consisting of metal, or plastic.

20. The aroma-diffusing heating device as claimed in claim

19, wherein the heat-transfer container is an aluminum foil bowl.

21. An aroma capsule, comprising:

a heat-transfer container defining a top opening;

an aromatic substance held in said heat-transfer container; and

a sealing film bonded to said heat-transfer container over the top opening to seal said aromatic substance in said heat-transfer container.

22. The aroma capsule as claimed in claim 21, further comprising a breathing film bonded to said heat-transfer container over the top opening to seal said aromatic substance in said heat-transfer container and said breathing film under said sealing film.