



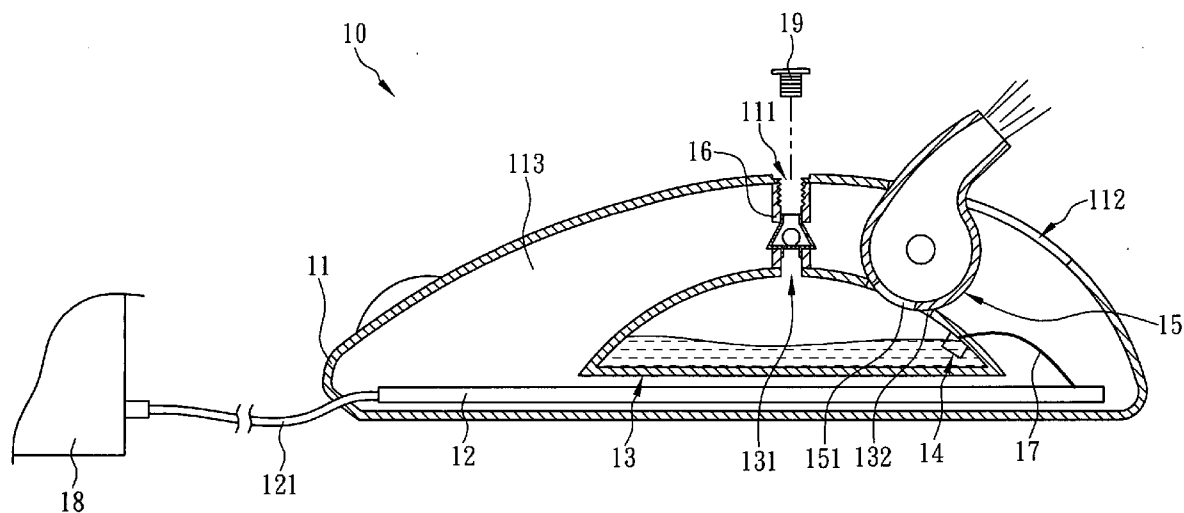
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(19) **United States**(12) **Patent Application Publication****Huang**(10) **Pub. No.: US 2011/0103777 A1**(43) **Pub. Date: May 5, 2011**(54) **MOUSE CAPABLE OF GENERATING STEAM**(52) **U.S. Cl. 392/404**(75) Inventor: **Wen-Hung Huang**, Tucheng City (TW)(57) **ABSTRACT**(73) Assignee: **Hannsprece, Inc.**, Taipei City (TW)(21) Appl. No.: **12/656,036**(22) Filed: **Jan. 14, 2010**(30) **Foreign Application Priority Data**

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The present invention is to provide a mouse capable of generating steam, which comprises a housing having a first liquid inlet and an opening; a chamber inside the housing; a heating element mounted in the chamber and electrically connected to a printed circuit board; and a rotatable guiding pipe; wherein the chamber includes a steam guiding hole and a second liquid inlet communicated with the first liquid inlet, and the rotatable guiding pipe is pivotally connected to the steam guiding hole and the opening. Thereby, when receiving electrical current from the printed circuit board, the heating element can continuously heat liquid in the chamber to generate steam and then guide the steam to the outside of the housing through the rotatable guiding pipe for effectively adding moist in the environment of the mouse and providing moisture for user's face.



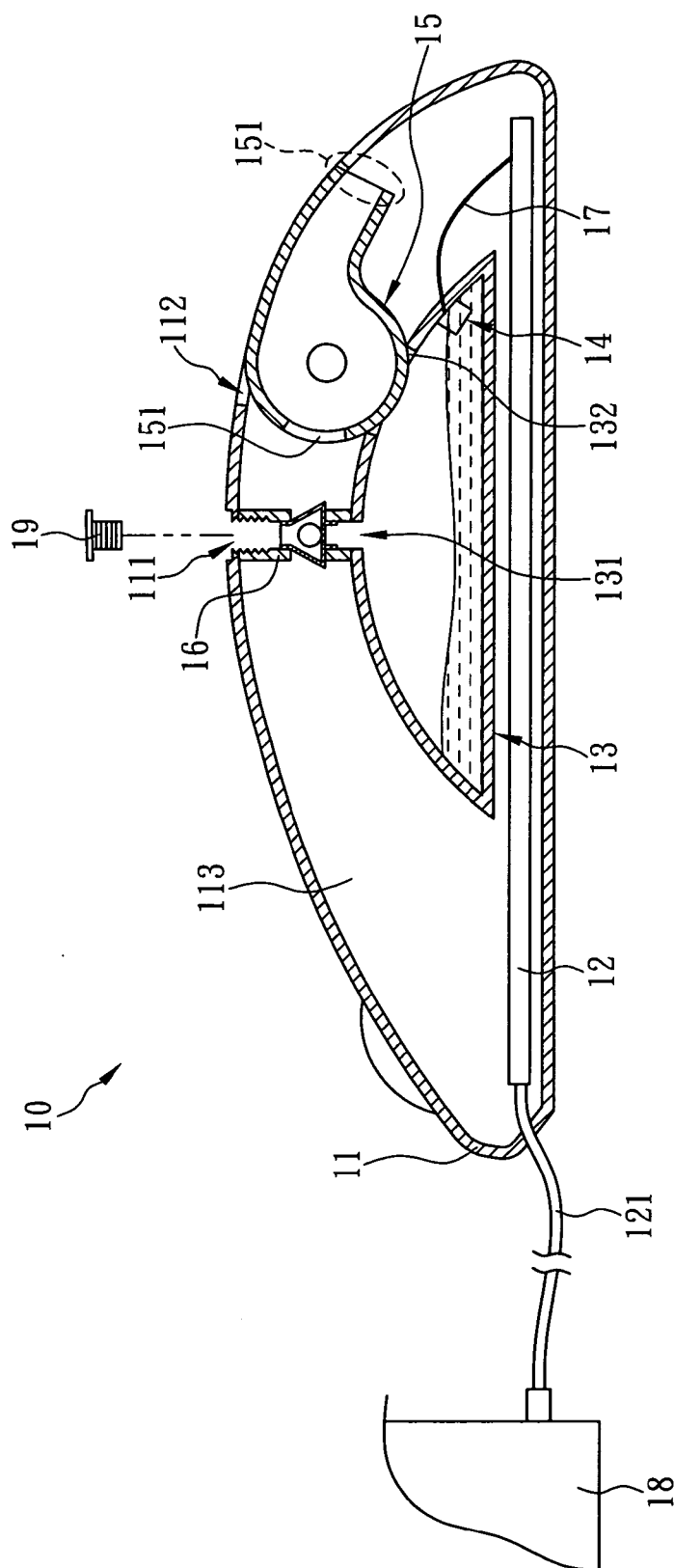


FIG. 1

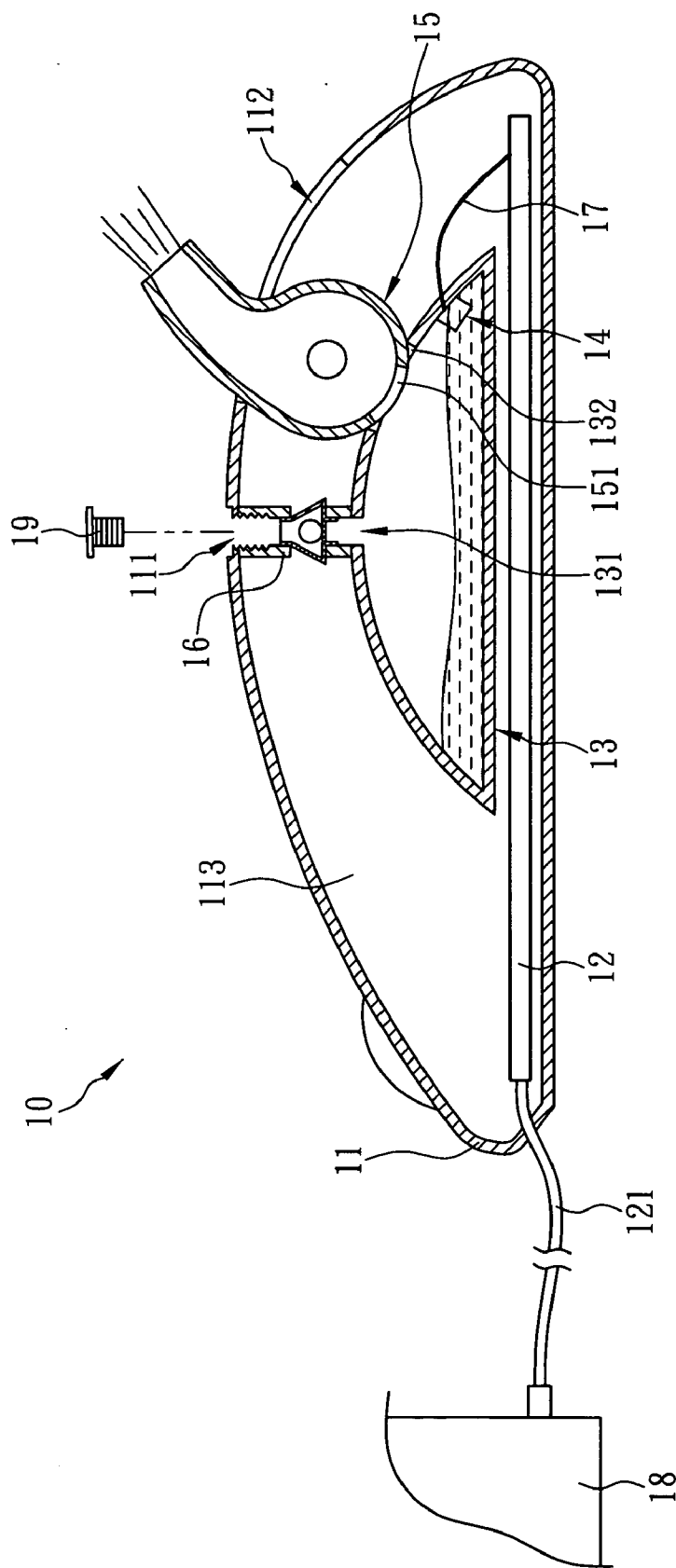


FIG. 2

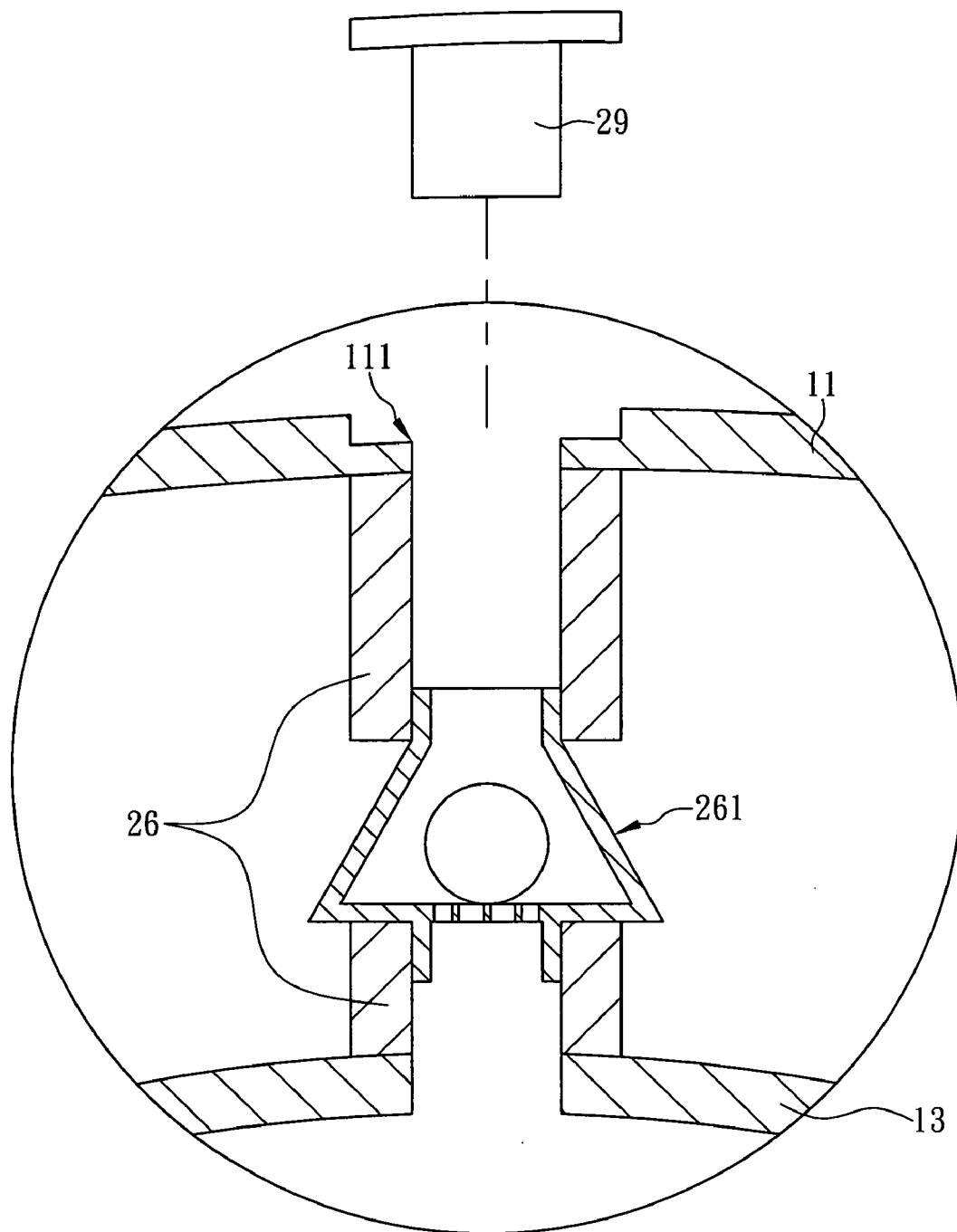


FIG. 3

MOUSE CAPABLE OF GENERATING STEAM

FIELD OF THE INVENTION

[0001] The present invention relates to a computer mouse, more particularly to a mouse comprising a housing having a chamber, a heating element and a rotatable guiding pipe therein, so that when a user pours liquid, such as water, potion, fragrance, essential oil or herbal liquid, etc., into the chamber, the heating element mounted in the chamber heats the liquid to generate steam and the rotatable guiding pipe guides the steam to the outside of the housing, so as to effectively adding moisture to the surroundings of the mouse and a steamer for the user's face.

BACKGROUND OF THE INVENTION

[0002] Presently, with the development of information technologies and electronic industries, computers have been rapidly developed and improved, wherein many types of the computers are continuously developing, while the cost thereof are lowered day by day, and provide convenience to daily life. Traditionally, a computer is connected with a computer mouse for a user to control the position of a cursor on a computer screen. However, the traditional mouse only comprises control keys and an induction device, but cannot provide a function of generating steam (i.e. vapor). Thus, when the user works in an air-conditioning work area, the skin (such as skins of the lip, face or hand) of the user may be exposed to the low-temperature and low-moisture environment caused by the air-conditioner. As a result, the skin will become dry or cracked due to losing too much moisture, and even the blood circulation will be affected, resulting in losing the elasticity and smoothness of the skin. For preventing the foregoing problems, the user must further prepare a moisture fluid and a spray can for spraying the moisture fluid to the dry skin, in order to provide water for the skin. However, the user generally separately stores the moisture fluid and the spray can. When the user wants to replenish the moisture fluid, it costs time and money for the user to find or buy moisture fluid and the spray can, which causes the inconvenience to the user.

[0003] As described above, the traditional mouse can not provide the function of generating steam, while the moisture fluid and the spray can both are inconvenient for storage. As a result, the foregoing reasons cause the inconvenience to the user. On the other hand, among various peripheral devices derived from computers (such as mice, keyboards, loud-speakers, printers, etc.), the mouse is the device most commonly used by the user, and disposed at a position where the user's hand can touch. Therefore, it is an important issue for the inventor of the present invention to think how to develop a mouse capable of generating steam, so as to diffuse the steam out of a mouse housing for the purpose of efficiently adding moist in the environment of the mouse.

[0004] It is therefore tried by the inventor to develop a mouse capable of generating steam to solve the problems existing in the conventional mouse, as described above.

BRIEF SUMMARY OF THE INVENTION

[0005] An object of the present invention is to provide a mouse capable of generating steam, which comprises a housing, a printed circuit board, a chamber, a heating element and a rotatable guiding pipe, wherein an upper surface of the housing is formed with a first liquid inlet and an opening, while the housing is provided with a receiving space therein.

The printed circuit board is received in the receiving space and attached to a lower surface of the housing. The chamber is mounted in the receiving space for receiving a predetermined amount of liquid. An inner wall of the chamber is made of a thermal insulation material, and an upper surface of the chamber is formed with a second liquid inlet and a steam guiding hole. The second liquid inlet is communicated with the first liquid inlet through a hollow pipe, so that a user can pour the liquid into the chamber through the first liquid inlet. The steam guiding hole is formed on a position of the upper surface of the chamber aligned with the opening of the housing. The heating element is mounted in the chamber and electrically connected to the printed circuit board through a wire for receiving an electric power supplied by the printed circuit board and thus generating heat to increase the temperature of the heating element. Two ends of the rotatable guiding pipe are formed with two ventilation openings communicated with each other. A lower surface of the rotatable guiding pipe has a curved portion close to the steam guiding hole of the chamber, and two opposite sides of the rotatable guiding pipe are pivotally connected to two opposite inner edges of the opening. Thereby, the lower surface of the rotatable guiding pipe can cover the steam guiding hole to completely close the steam guiding hole, or the ventilation opening of one end of the rotatable guiding pipe can be rotated to align with the steam guiding hole for communicating the rotatable guiding pipe with the steam guiding hole when the rotatable guiding pipe is rotated to a predetermined angle. Therefore, after the user pours the liquid (such as water, potion, fragrance, essential oil, herbal liquid, etc.) into the chamber from the first liquid inlet, the user can rotate the rotatable guiding pipe to the predetermined angle, so that the ventilation opening of one end of the rotatable guiding pipe is rotated to align with the steam guiding hole. At this time, because the heat generated by the heating element can continuously heat the liquid in the chamber, the liquid vapor and turn into steam, the steam will be guided by the rotatable guiding pipe and diffused out of the housing when the vapor pressure in the chamber is accumulated and greater than the atmospheric pressure outside the housing. As a result, the moisture of the surroundings of the mouse can be increased to provide moisture to the user's face. In addition, the liquid can be a medicine, the user can inhale the steam instead of injecting or taking the medicine.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0006] The structure and the technical means adopted by the present invention to achieve the above and other objects can be best understood by referring to the following detailed description of the preferred embodiments and the accompanying drawings, wherein

[0007] FIG. 1 is a cross-sectional view of a mouse capable of generating steam according to a first preferred embodiment of the present invention;

[0008] FIG. 2 is another cross-sectional view of the mouse capable of generating steam according to the first preferred embodiment of the present invention; and

[0009] FIG. 3 is a partially enlarged cross-sectional view of a mouse capable of generating steam according to a second preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0010] The present invention is a mouse capable of generating steam, referring to FIGS. 1 and 2, in a first preferred

embodiment of the present invention, a mouse 10 comprises a housing 11, a printed circuit board 12, a chamber 13, a heating element 14 and a rotatable guiding pipe 15, wherein an upper surface of the housing 11 is formed with a first liquid inlet 111 and an opening 112, while the housing 11 is provided with a receiving space 113 therein.

[0011] As described above, the printed circuit board 12 is received in the receiving space 113 of the housing 11, and attached to a lower surface of the housing 11. The printed circuit board 12 is electrically connected to a computer device 18 (such as a personal computer or a notebook computer) through a cable 121, so that the printed circuit board 12 can receive an electric power supplied by the computer device 18. The chamber 13 is mounted in the receiving space 113 for receiving a predetermined amount of liquid, and an inner wall of the chamber 13 is made of a thermal insulation material, such as ceramic, glass, polypropylene resin, vinyl ester resin, poly-tetrafluoroethylene (PTFE) resin, etc. An upper surface of the chamber 13 is formed with a second liquid inlet 131 and a steam guiding hole 132, wherein the second liquid inlet 131 is communicated with the first liquid inlet 111 through a hollow pipe 16, so that a user can pour the liquid into the chamber 13 through the first liquid inlet 111. The steam guiding hole 132 is formed on a position of the upper surface of the chamber 13 aligned with the opening 112 of the housing 11. The heating element 14 is mounted inside the chamber 13 and electrically connected to the printed circuit board 12 through a wire 17 for receiving an electric power supplied by the printed circuit board 12 and thus generating heat to increase the temperature of the heating element 14.

[0012] FIGS. 1 and 2, in the first preferred embodiment of the present invention, two ends of the rotatable guiding pipe 15 are formed with two ventilation openings 151 communicated with each other, while a lower surface of the rotatable guiding pipe 15 has a curved portion close to the steam guiding hole 132 of the chamber 13. Furthermore, two opposite sides of the rotatable guiding pipe 15 are pivotally connected to two opposite inner edges of the opening 112. Thus, the lower surface of the rotatable guiding pipe 15 can cover the steam guiding hole 132 to completely close the steam guiding hole 132 shown in FIG. 1, or the ventilation opening 151 of one end of the rotatable guiding pipe 15 can be rotated to align with the steam guiding hole 132 for communicating the rotatable guiding pipe 15 with the steam guiding hole 132 when the rotatable guiding pipe 15 is rotated to a predetermined angle shown in FIG. 2.

[0013] Therefore, after the user pours the liquid (such as water, potion, fragrance, essential oil, herbal liquid, etc.) into the chamber 13 from the first liquid inlet 111, the user can rotate the rotatable guiding pipe 15 to the predetermined angle, so that the ventilation opening 151 of one end of the rotatable guiding pipe 15 is rotated to align with the steam guiding hole 132. At this time, because the heat generated by the heating element 14 can continuously heat the liquid in the chamber 13 and vaporize the liquid to generate steam, the steam will be guided by the rotatable guiding pipe 15 and diffused out of the housing 11 when the vapor pressure in the chamber 13 is accumulated greater than the atmospheric pressure outside the housing 11. As a result, the moisture is taken into the surroundings of the mouse 10.

[0014] In addition, if the liquid contains at least one pharmaceutical agent such as medicine or at least one health care agent (such as bronchodilator, essential oil or herbal liquid),

the user can move the mouse 10 to be closed to the mouth or nose of the user, and inhale the steam for treatment.

[0015] Moreover, in the embodiment, the mouse 10 further comprises an airtight plug 19, wherein one end of the airtight plug 19 has an outer thread portion which can be thread-connected to an inner thread portion in the first liquid inlet 111, so as to seal the first liquid inlet 111. Thus, when the liquid in the chamber 13 is insufficient, the user can remove the airtight plug 19 from the first liquid inlet 111. After the liquid is poured into the chamber 13 from the first liquid inlet 111, the user can thread-connect the inner thread portion on one end of the airtight plug 19 with the inner thread portion in the first liquid inlet 111. Then, when the heating element 14 heats the liquid in the chamber 13 to generate the steam, the airtight plug 19 keeps the first liquid inlet 111 sealed. As a result, the steam can be prevented from leaking out of the housing 11 from the first liquid inlet 111, and the leakage of the steam and the heat wasted of the heating element 14 will be happen.

[0016] In addition, in another embodiment of the present invention, the rotatable guiding pipe 15 further comprises a fan (not-shown) therein, wherein the fan is electrically connected to the printed circuit board 12 via another wire for receiving the electric power supplied by the printed circuit board 12, so that the fan can generate air flows, sucking the steam in the chamber 13 out of the housing 11.

[0017] Moreover, referring to FIG. 3, in a second preferred embodiment of the present invention, an airtight plug 29 is made of an elastic material, and can be inserted into an inner edge of the first liquid inlet 111 to seal the first liquid inlet 111. However, the connection means between the airtight plug 29 and the first liquid inlet 111 is not limited to the thread connection or the insertion connection, wherein any type of the airtight plug 29 which can seal the first liquid inlet 111 could be applied to the present invention without limitation.

[0018] Referring to FIG. 3, in the second preferred embodiment of the present invention, a hollow pipe 26 is provided with a check valve 261 which can stop the liquid to flow into the chamber 13 from the hollow pipe 26. Thus, the liquid in the chamber 13 can not flow out of the housing 11 from the first liquid inlet 111 through the hollow pipe 26. As a result, in a case that the liquid in the chamber 13 flows into the hollow pipe 26 due to the angular inclination, vibration or impact of the housing 11, the liquid is blocked by the check valve 261 in the hollow pipe 26 and can not flow out of the housing 11 from the hollow pipe 26, so that the risk of liquid leakage can be prevented.

[0019] The present invention has been described with the preferred embodiments thereof and it is understood that many changes and modifications to the described embodiments can be carried out without departing from the scope and the spirit of the invention that is intended to be limited only by the appended claims.

What is claimed is:

1. A mouse capable of generating steam, the mouse comprising:
 - a housing having an upper surface formed with a first liquid inlet and an opening, and the housing further having a receiving space therein;
 - a printed circuit board received in the receiving space and attached to a lower surface of the housing;
 - a chamber inside the receiving space for receiving a predetermined amount of liquid, wherein an inner wall of the chamber is made of a thermal insulation material and

an upper surface of the chamber is formed with a second liquid inlet and a steam guiding hole, the second liquid inlet being communicated with the first liquid inlet through a hollow pipe, so that the liquid is poured into the chamber through the first liquid inlet, and the steam guiding hole being formed on a position of the upper surface of the chamber aligned with the opening of the housing;

a heating element mounted inside the chamber and electrically connected to the printed circuit board through a wire for receiving an electric power supplied by the printed circuit board and thus generating heat to increase the temperature of the heating element; and

a rotatable guiding pipe having two ends formed with two ventilation openings communicated with each other, wherein a lower surface of the rotatable guiding pipe has a curved portion close to the steam guiding hole of the chamber and two opposite sides of the rotatable guiding pipe are pivotally connected to two opposite inner edges of the opening, so that the lower surface of the rotatable guiding pipe covers the steam guiding hole to completely close the steam guiding hole, the ventilation opening of one end of the rotatable guiding pipe can rotate to align with the steam guiding hole for communicating the rotatable guiding pipe with the steam guiding hole when the rotatable guiding pipe is rotated to a predetermined angle.

2. The mouse capable of generating steam according to claim 1, wherein the rotatable guiding pipe further comprises a fan therein, and the fan is electrically connected to the printed circuit board via another wire for receiving the electric power supplied by the printed circuit board to generate air flows.

3. The mouse capable of generating steam according to claim 2, wherein the mouse further comprises an airtight plug, and one end of the airtight plug has an outer thread portion which is thread-connected to an inner thread portion in the first liquid inlet, so as to seal the first liquid inlet.

4. The mouse capable of generating steam according to claim 2, wherein the mouse further comprises an airtight plug made of an elastic material, and the airtight plug is inserted into an inner edge of the first liquid inlet to seal the first liquid inlet.

5. The mouse capable of generating steam according to claim 2, wherein the hollow pipe is provided with a check valve which stops the liquid to flow into the chamber from the hollow pipe, so that the liquid in the chamber is prevented from flowing out of the housing through the first liquid inlet.

6. The mouse capable of generating steam according to claim 3, wherein the printed circuit board is electrically connected to a computer device through a cable, so that the printed circuit board receives an electric power supplied by the computer device.

7. The mouse capable of generating steam according to claim 4, wherein the printed circuit board is electrically connected to a computer device through a cable, so that the printed circuit board receives an electric power supplied by the computer device.

8. The mouse capable of generating steam according to claim 5, wherein the printed circuit board is electrically connected to a computer device through a cable, so that the printed circuit board receives an electric power supplied by the computer device.

9. The mouse capable of generating steam according to claim 1, wherein the liquid is water, potion, fragrance, essential oil, herbal liquid or pharmaceutical agent.

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