CLAIMS

What is claimed is:

1. A passive liquid cooling system, comprising:

a first cavity, filled with first liquid capable of phase transition;

a heat dissipation apparatus, disposed through the first cavity, wherein the heat dissipation apparatus comprises: a second cavity, an evaporation end and a condensation end, the evaporation end and the condensation end communicate with the second cavity, and the second cavity is filled with second liquid capable of phase transition;

wherein an outer side of the evaporation end is configured to contact a heat-generating component, and cause the second liquid to undergo phase transition into second vapor when absorbing heat; and an outer side of the condensation end is in contact with the first liquid, and is configured to diffuse heat into the first liquid to cause the first liquid to undergo phase transition into first vapor, and cause the second vapor to be condensed to fall back into the second cavity when encountering with the second vapor; and

a condensing apparatus, disposed on the first cavity, and configured to condense the first vapor to fall back into the first cavity when encountering with the first vapor.

2. The passive liquid cooling system according to claim 1, wherein the heat dissipation apparatus is disposed on a side wall of the first cavity, or disposed at a bottom of the first cavity.

3. The passive liquid cooling system according to claim 2, wherein the heat dissipation apparatus is disposed in a middle region of the side wall of the first cavity, or in a lower region of the side wall of the first cavity.

4. The passive liquid cooling system according to claim 2, wherein when the heat dissipation apparatus is disposed on the side wall of the first cavity, the second cavity has a hollow rectangular cavity structure.

5. The passive liquid cooling system according to claim 1, wherein an emission apparatus is further disposed on the first cavity, and is configured to emit the first vapor outward when air pressure in the first cavity is greater than a safe pressure value.

6. The passive liquid cooling system according to claim 5, wherein the emission apparatus is disposed at a top of the first cavity, or disposed at a first location on a side wall of the first cavity, and the first location is higher than a liquid level of the first liquid.

7. The passive liquid cooling system according to claim 1, wherein the first cavity is provided with a first liquid injection port, and the first liquid injection port is configured to

inject the first liquid into the first cavity;

and/or

the heat dissipation apparatus further is provided with a second liquid injection port, and the second liquid injection port communicates with the second cavity and is configured to inject the second liquid into the second cavity.

8. The passive liquid cooling system according to claim 1, wherein an inner side of the condensation end adopts a finned structure, and/or the condensing apparatus adopts the finned structure, wherein the finned structure comprises a plurality of vertically downward condensing channels.

9. The passive liquid cooling system according to claim 1, wherein a boiling point of the first liquid is lower than a boiling point of the second liquid.

10. The passive liquid cooling system according to any one of claims 1 to 9, wherein a volume of the first cavity and a volume of the first liquid are determined in advance based on a type, an application scenario, and/or power of the heat-generating component employing the passive liquid cooling system.

11. The passive liquid cooling system according to any one of claims 1 to 9, wherein the condensing apparatus is disposed through a top region of the first cavity; or the condensing apparatus is disposed inside the first cavity; or the condensing apparatus is implemented as the top region of the first cavity; or the condensing apparatus comprises a first part and a second part, the first part is disposed on the first cavity, and the second part is disposed outside the first cavity and is connected with the first part.

12. The passive liquid cooling system according to any one of claims 1 to 9, an area of a surface of the evaporation end in contact with the heat-generating component is smaller than an area of a surface of the evaporation end in contact with the second cavity.

13. The passive liquid cooling system according to any one of claims 1 to 9, an area of a surface of the condensation end in contact with the second cavity is smaller than an area of a surface of the condensation end in contact with the first liquid.

14. A board, the board comprising a chip, at least one of the board and the chip being mounted with the passive liquid cooling system as claimed in any one of claims 1 to 13.

15. An electronic device, the electronic device comprising a board, the board comprising a chip, at least one of the electronic device, the board and the chip being mounted with the passive liquid cooling system as claimed in any one of claims 1 to 13.