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(54) **Title:** BUBBLE APPARATUS AND INFLATABLE RECREATION APPARATUS USING SAME

(54) 发明名称: 一种泡泡装置及其应用的充气游乐装置

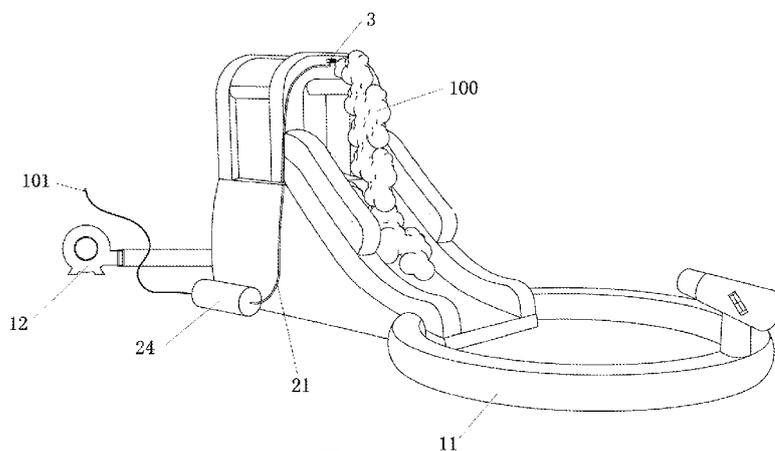


图 1

(57) **Abstract:** The present invention relates to a bubble apparatus and an inflatable bouncer using same; the inflatable recreation apparatus comprises an airbag body and an inflatable apparatus used for inputting gas to the airbag body; the airbag body is provided with a bubble apparatus used for generating bubbles; the bubble apparatus comprises a liquid storage bag used for storing bubble solution and a bubble forming apparatus used for forming bubble water into bubbles, connected by means of a liquid guide tube; the liquid storage bag is made of a deformable material and is sealed and accommodated in a pressurization container; the pressurization container is provided with an access opening used for continuously delivering fluid into the pressurization container so that the fluid acts on the liquid storage bag and squeezes the bubble solution stored in the liquid storage bag by way of the liquid guide tube to the forming apparatus so as to form bubbles; the forming apparatus is arranged on the airbag body, and the liquid storage bag is arranged inside or at the side of the airbag body. The advantage of the bubble apparatus and inflatable recreation apparatus using same of the present invention is that not only is the structure simple but the invention is also convenient to use.

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根据细则4.17的声明:

- 关于发明人身份(细则4.17(i))
- 关于申请人有权申请并被授予专利(细则4.17(ii))
- 关于申请人有权要求在先申请的优先权(细则4.17(iii))
- 发明人资格(细则4.17(iv))

本国际公布:

- 包括国际检索报告(条约第21条(3))。

(57) 摘要: 本发明涉及一种泡泡装置及其应用的充气跳床, 充气游乐装置包括气囊体和用以为气囊体输入气体的充气装置, 气囊体上设置有用生成泡泡的泡泡装置, 泡泡装置包括通过引液管相连接的用以储存泡泡水的储液袋和将泡泡水形成泡泡的形成装置, 储液袋由能形变的材料制成并密封容置在一加压器中, 加压器设置有用以向加压器内持续输送流体使流体作用储液袋而挤压储存在储液袋的泡泡水经引液管到形成装置而形成泡泡的接入口, 形成装置设置于气囊体上, 而储液袋设置在气囊体内或一边。本发明之泡泡装置及其应用的充气游乐装置的优点在于结构不但简单而且使用便捷。

## **BUBBLE APPARATUS AND INFLATABLE RECREATION APPARATUS USING SAME**

### **BACKGROUND**

[0001] The disclosure relates to a bubble maker and an inflatable amusement device comprising the same.

[0002] Inflatable castles (also called closed inflatable trampolines (CITs), bouncing castle, bouncy houses, bounce houses, jumping castle, jumper, bouncy castles, moon bounces, or moonwalks) are temporary inflatable structures and buildings for recreational purposes, particularly for children. A bubble maker is designed to produce a succession of soap bubbles, typically used for entertainment at children's parties, concerts, etc. To produce bubbles while playing in the inflatable castles, people load the bubble maker to the inflatable amusement device.

[0003] In order for the bubble maker to produce bubbles continuously, the volume of the container or liquid storage bag storing bubble water needs to be large. After the container or liquid storage bag is filled with bubble water, it is very heavy and inconvenient to load on the inflatable amusement device. In addition, to achieve a better bubble effect, the bubble maker is generally disposed much higher than the inflatable amusement device, which further increases the difficulty to install the bulky container or liquid storage bag storing bubble water on the inflatable castle.

### **SUMMARY**

[0004] The disclosure provides a bubble maker, comprising a pressurized container; a liquid storage bag; a bubble generator; and a drainage tube connecting the liquid storage bag and the bubble generator. The liquid storage bag is configured to store a bubble solution; the drainage tube is configured to convey the bubble solution to the bubble generator; and the bubble generator is configured to convert the bubble solution into bubbles; the liquid storage bag comprises elastic material and is disposed in the pressurized container; the pressured container comprises a fluid inlet so that a fluid is

introduced to the pressured container via the fluid inlet to squeeze the liquid storage bag, and thus the bubble solution in the liquid storage bag is squeezed into the bubble generator via the drainage tube.

[0005] In another aspect, the disclosure provides an inflatable amusement device, comprising an inflatable body, an air charging apparatus configured to add air to the inflatable body, and the abovementioned bubble maker; the bubble generator of the bubble maker is disposed on the inflatable body, and the liquid storage bag is disposed in or on one side of the inflatable body.

[0006] The following advantages are associated with the bubble maker and the inflatable amusement device comprising the same of the disclosure. When in use, the fluid such as tap water or gas such as air produced by the blower is continuously introduced to the pressurized container via the fluid inlet, and the tap water or air acts on the liquid storage bag and squeezes the bubble water stored in the liquid storage bag to flow into the bubble generator via the drainage tube, and thus the bubbles are formed in the bubble generator and float above the inflatable body for recreation.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. 1 is a schematic diagram of an inflatable amusement device of the disclosure; and

[0008] FIG. 2 is a schematic diagram of a bubble maker of the disclosure.

#### DETAILED DESCRIPTION

[0009] To further illustrate, embodiments detailing a bubble maker and an inflatable amusement device comprising the same are described below. It should be noted that the following embodiments are intended to describe and not to limit the disclosure.

[0010] As shown in FIG. 1, the disclosure provides an inflatable amusement device comprising an inflatable body **11**, an air charging apparatus **12** configured to add air to the inflatable body **11**, and a bubble maker **2**.

[0011] As shown in FIG. 2, the bubble maker comprises a pressurized container **24**; a liquid storage bag **22**; a bubble generator **23**; and a drainage tube **21** connecting the liquid storage bag **22** and the bubble generator **23**. The liquid storage bag **22** is configured to store a bubble solution; the drainage tube **21** is configured to convey the bubble solution to the bubble generator **23**; and the bubble generator **23** is configured to convert the bubble solution into bubbles; the liquid storage bag **22** comprises elastic material and is disposed in the pressurized container **24**; the pressured container **24** comprises a fluid inlet **241** so that a fluid is introduced to the pressured container via the fluid inlet to squeeze the liquid storage bag **22**, and thus the bubble solution in the liquid storage bag **22** is squeezed into the bubble generator **23** via the drainage tube **21**.

[0012] The pressurized container **24** comprises hard or soft material, preferably, soft material. Likewise, the liquid storage bag **22** comprises soft material.

[0013] The pressurized container **24** is cylindrical in an inflated state, and the liquid storage bag **22** is cylindrical when filled with the bubble solution. The fluid inlet **241** is disposed on the rear end of the pressurized container **24**, and the drainage tube **21** passes through the front end of the pressurized container **24** and is connected to the front end of the liquid storage bag **22**.

[0014] When the fluid is continuously added to the pressurized container **24** via the fluid inlet **241**, the inner cavity pressure of the pressurized container **24** increases. When the inner cavity pressure of the pressurized container **24** is greater than the inner cavity pressure of the liquid storage bag **22**, the bubble solution in the liquid storage bag **22** flows to the drainage tube **21**. The pressurized container **24** and the liquid storage bag **22** are designed as a cylinder, and the fluid inlet **241** is disposed oppositely to the drainage tube **21** with respect to the liquid storage bag **22**, which is conducive to the fluid in the pressurized container **24** to apply pressure to the liquid storage bag **22**, so as to facilitate the outflow of the bubble solution to the drainage tube **21**.

[0015] The bubble maker can be used alone. In this way, the bubble generator **23** comprises a cylindrical housing **3**; a net is disposed or formed on a first end of the cylindrical housing **3**, and a blower is disposed on a second end of the cylindrical housing **3**; the blower comprises an air outlet facing the net; the drainage tube **21** comprises a first

end connected to the liquid storage bag **22** and a second end extending into the cylindrical housing **3**; and a nozzle **211** is disposed on the second end of the drainage tube **21**. The bubble solution flows into the bubble generator **23** via the drainage tube **21**, is sprayed on the mesh **31** by the nozzle, and blown by the air produced by the blower to form bubbles **100**.

[0016] In this example, the bubble maker **2** is disposed on an inflatable castle. Optionally, the inflatable body **11** is not limited to a single shape, and can be in the form of a jumping castle with various shapes. Thus, the bubble generator **23** is disposed on the inflatable body **11** in the form of a jumping castle, and the liquid storage bag **22** is disposed in or on one side of the inflatable body **11**.

[0017] The bubble generator **23** comprises a cylindrical housing **3** disposed on the inflatable body **11**; a net **31** is disposed or formed on a first end of the cylindrical housing **3**, and a second end of the cylindrical housing **3** communicates with the inner cavity of the inflatable body **11** without the arrangement of a blower; the drainage tube **21** comprises a first end connected to the liquid storage bag **22** and a second end extending into the cylindrical housing **3**; and a nozzle **211** is disposed on the second end of the drainage tube **21**. The bubble solution flows into the bubble generator **23** via the drainage tube **21**, is sprayed on the mesh **31** by the nozzle, and blown by the air in the inner cavity of the inflatable body **11** to form bubbles **100**.

[0018] The fluid is tap water or gas, particularly, tap water. On the one hand, all amusement parks are equipped with tap water. Thus, it is only necessary to connect a tap **101** and the fluid inlet **241** through a pipe. On the other hand, the tap water itself has pressure and can continuously flow to the pressurized container **24** to act on the liquid storage bag **22** and squeeze the bubble water stored in the liquid storage bag **22**. The design is simple and is easy to operate.

[0019] In addition, the pressurized container **24** is equipped with a pressure relief valve. When the inlet water pressure or gas pressure in the pressurized container **24** is too high, the pressure relief valve will automatically open to release water and pressure, thus ensuring the pressurized container **24** will not burst and ensuring safety.

[0020] It will be obvious to those skilled in the art that changes and modifications may be made, and therefore, the aim in the appended claims is to cover all such changes and modifications.

What is claimed is:

1. A bubble maker, comprising:
  - a liquid storage bag, the liquid storage bag is configured to store a bubble solution;
  - a bubble generator, the bubble generator is configured to convert the bubble solution into bubbles; and
  - a drainage tube connecting the liquid storage bag and the bubble generator, the drainage tube is configured to convey the bubble solution to the bubble generatorwherein:
  - the liquid storage bag comprises elastic material and is disposed in a pressurized container; and
  - the pressured container comprises a fluid inlet so that a fluid is introduced to the pressured container via the fluid inlet to squeeze the liquid storage bag, and thus the bubble solution in the liquid storage bag is squeezed into the bubble generator via the drainage tube.
2. The bubble maker of claim 1, wherein the pressurized container comprises soft material.
3. The bubble maker of claim 1, wherein the pressurized container is equipped with a pressure relief valve.
4. The bubble maker of claim 1, wherein the fluid is tap water.

5. The bubble maker of any one of claims 1 to 4, wherein the pressurized container is cylindrical in an inflated state, and the liquid storage bag is cylindrical when filled with the bubble solution.
6. The bubble maker of claim 5, wherein the fluid inlet is disposed on a rear end of the pressurized container, and the drainage tube passes through a front end of the pressurized container and is connected to a front end of the liquid storage bag.
7. The bubble maker of claim 5, wherein the bubble generator comprises a cylindrical housing; a net is disposed or formed on a first end of the cylindrical housing, and a blower is disposed on a second end of the cylindrical housing; the blower comprises an air outlet facing the net; the drainage tube comprises a first end connected to the liquid storage bag and a second end extending into the cylindrical housing; and a nozzle is disposed on the second end of the drainage tube.
8. An inflatable amusement device, comprising an inflatable body, an air charging apparatus configured to add air to the inflatable body, and the bubble maker of any one of claims 1-6; wherein the bubble generator of the bubble maker is disposed on the inflatable body, and the liquid storage bag is disposed in or on one side of the inflatable body.
9. The device of claim 8, wherein the bubble generator comprises a cylindrical housing disposed on the inflatable body; a net is disposed or formed on a first end of the cylindrical housing, and a second end of the cylindrical housing communicates with an inner cavity of the inflatable body; the drainage tube comprises a first end connected to the liquid storage bag and a second end

extending into the cylindrical housing; and a nozzle is disposed on the second end of the drainage tube.

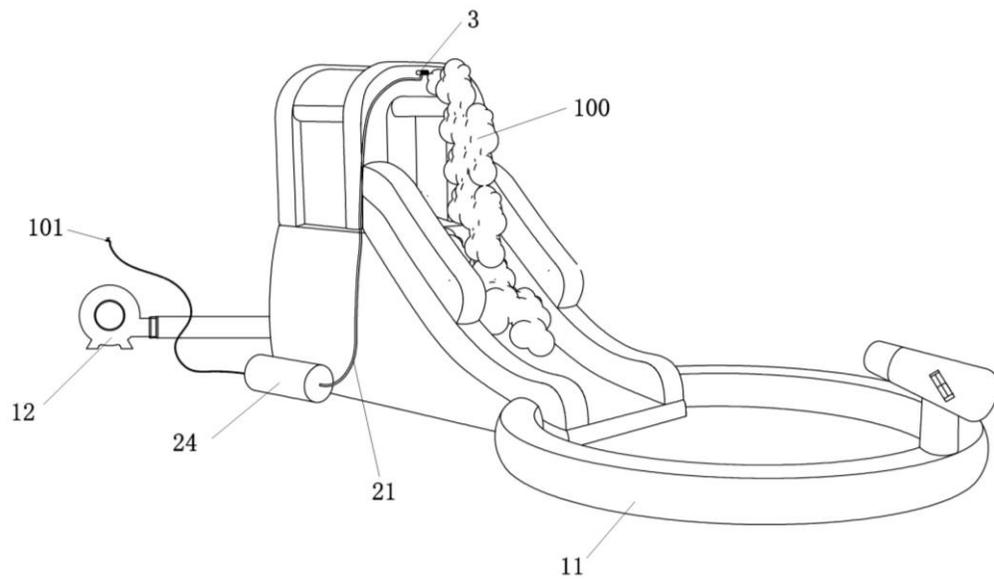


FIG. 1

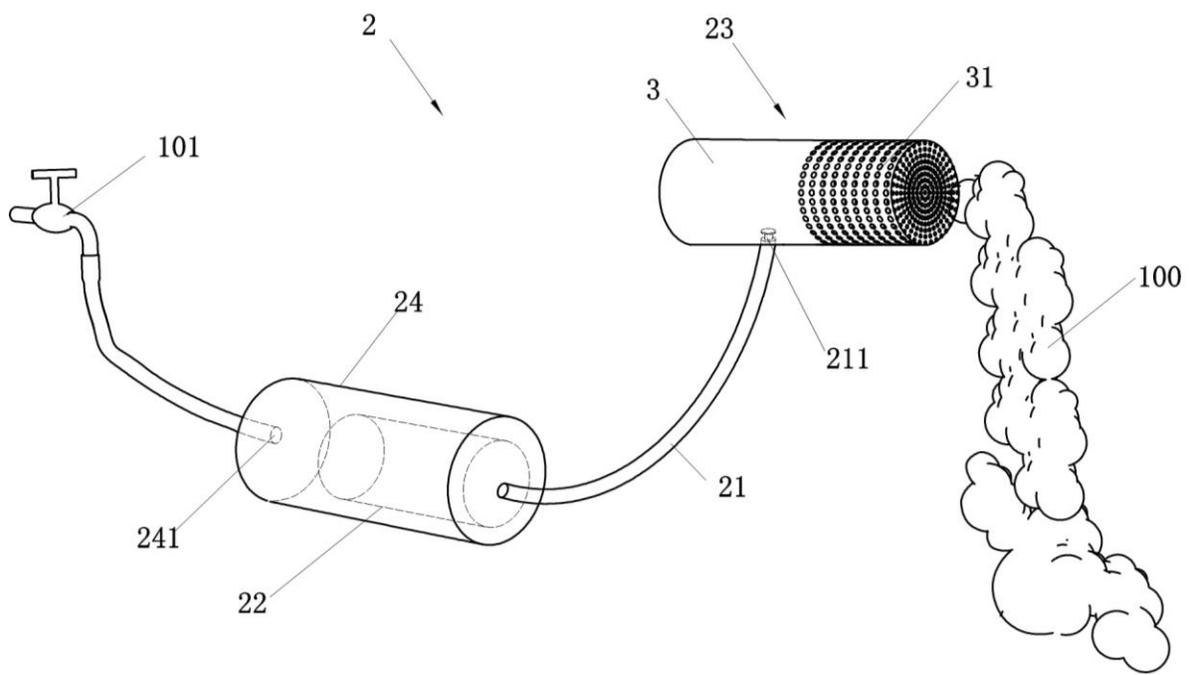


FIG. 2