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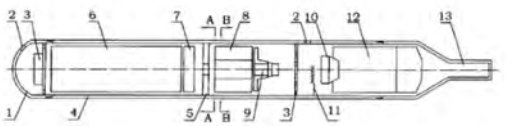
[54] **Title of Invention**

SIMULATED CIGARETTE

[57] **ABSTRACT**

The utility model relates to a simulated cigarette. The utility model is intended to overcome the disadvantages of a complex structure, high manufacturing costs, and a poor simulation effect in the prior art. The adopted technical solution is a simulated cigarette, including a housing. Two ends of the housing are respectively provided with a simulated light-emitting end and a mouthpiece, and an air inlet hole is formed on an outer wall of the housing. A battery compartment, an electret microphone cavity, and a vaporization cavity are arranged in the housing in sequence from the simulated light-emitting end. A battery is arranged in the battery compartment, and a vaporization controller is composed of an electret microphone and an electronic circuit board. The electret microphone is arranged in the electret microphone cavity. An output terminal of the electret microphone is connected to the electronic circuit board. The electronic circuit board is composed of a microprocessor and an ultrasonic circuit. A vaporization assembly includes a vaporizer and a reservoir connected to the vaporizer which are arranged in the vaporization cavity. An output terminal of the electronic circuit board is connected to the vaporizer. The air inlet hole, the electret microphone cavity, and the vaporization cavity are in communication with the mouthpiece.



1. A simulated cigarette, comprising a housing (4), wherein two ends of the housing (4) are respectively provided with a simulated light-emitting end and a mouthpiece (13), an air inlet hole (2) is formed on an outer wall of the housing (4), a battery (6), a vaporization controller, and a vaporization assembly are fixedly arranged in the housing (4), a battery compartment, an electret microphone cavity, and a vaporization cavity are arranged in the housing (4) in sequence from the simulated light-emitting end (1), the battery (6) is arranged in the battery compartment, the vaporization controller is composed of an electret microphone (8) and an electronic circuit board (7), the electret microphone (8) is arranged in the electret microphone cavity, an output terminal of the electret microphone (8) is connected to the electronic circuit board (7), the electronic circuit board (7) is composed of a microprocessor and an ultrasonic circuit, the vaporization assembly comprises a vaporizer (10) and a reservoir (12) connected to the vaporizer which are arranged in the vaporization cavity, an output terminal of the electronic circuit board (7) is connected to the vaporizer (10), and the air inlet hole (2), the electret microphone cavity, and the vaporization cavity are in communication with the mouthpiece (13).

2. The simulated cigarette according to claim 1, wherein an airflow through hole is arranged between the electret microphone cavity and the battery compartment, two air inlet holes are arranged, one of the two air inlet holes is arranged on the housing (4) at an end of the simulated light-emitting end (1), and the other is arranged on the housing (4) at an end of the vaporization cavity.

3. The simulated cigarette according to claim 2, wherein the airflow through hole is arranged on a partition plate (5) between the electret microphone cavity and the battery compartment, and a surface of the partition plate (5) on a side of the electret microphone cavity is provided with a radial airflow guide groove.

4. The simulated cigarette according to claim 2 or 3, wherein the electret microphone cavity is in communication with the vaporization cavity through a one-way valve (9).

5. The simulated cigarette according to claims 1, 2, and 3, wherein a heating element (11) is arranged in the vaporization cavity, and the heating element (11) is connected to the output terminal of the electronic circuit board (7).

6. The simulated cigarette according to claim 5, wherein a liquid guide is arranged in the reservoir (12), and the liquid guide is made of foamed nickel, stainless steel fiber felt, polymer foam, or foamed ceramic.

7. The simulated cigarette according to claim 6, wherein a shelf (3) is further arranged on a side of the vaporizer (10) in the vaporization cavity, a plurality of through holes are arranged

on the shelf (3), and the liquid guide fills between the shelf (3) and the vaporizer (10).

8. The simulated cigarette according to claims 7, wherein the electronic circuit board (7) in the vaporization controller is arranged in the battery compartment.

9. The simulated cigarette according to claim 8, wherein a raised strip is arranged on an inner wall of the housing (4) in a longitudinal direction.

SIMULATED CIGARETTE

TECHNICAL FIELD

The utility model relates to a simulated cigarette.

BACKGROUND

Smoking is harmful to health and has become one of the most serious public health problems in the world today. According to the statistics of the World Health Organization, there are currently 1.3 billion smokers in the world, and about 5 million people die from smoking every year. Tobacco has become the second "killer" after hypertension. If without control, the number of deaths from smoking every year may double by 2020. However, it is very difficult for smokers to quit smoking. At present, there are many cigarette substitutes on the market, such as mouthwash with cigarette smell, nicotine-containing paste, quit-smoking candy, and the like, and an electronic quit-smoking device, which is a simulated cigarette without tar and only containing nicotine (nicotine), has been put on the market. The patent with the Patent No. "200420031182.0" disclosed a simulated cigarette on August 24, 2005, including a housing and a suction nozzle. An air inlet hole is formed on an outer wall of the housing, and an electronic circuit board, a normal pressure cavity, a sensor, a gas-liquid separator, a vaporizer, and a liquid supply bottle are arranged in the housing in sequence. The electronic circuit board consists of an electronic switch circuit and a high-frequency generator. A sensor airflow channel is provided on one side of the sensor, and a negative pressure cavity is arranged in the sensor. The vaporizer contacts the liquid supply bottle, and a vaporization cavity is arranged in the vaporizer. A retainer ring for locking the liquid supply bottle is arranged between one side of the liquid supply bottle and the housing, and a mist channel is provided on the other side of the liquid supply bottle. The air inlet hole, the normal pressure cavity, the gas-liquid separator, the vaporizer, the mist channel, an air guide hole, and the suction nozzle are sequentially in communication with each other. The simulated cigarette has the advantages of no tar, greatly reducing cancer risks, users still having the feeling and excitement of smoking, no need of lighting, and no fire hazards. However, the problems existing in the prior art are as follows. 1. The electronic vaporization device has a complex structure and high manufacturing costs. 2. The generated vaporization amount is constant, which cannot be adjusted according to individual differences of users. Users generally reflect that this kind of electronic cigarette is laborious to suck and smoke, and the simulation effect is poor.

SUMMARY

The utility model provides a simulated cigarette, so as to overcome the disadvantages of a complex structure, high manufacturing costs, and a poor simulation effect existing in the prior art.

In order to achieve the above objective, the utility model adopts the technical solutions as follows.

A simulated cigarette includes a housing 4. Two ends of the housing 4 are respectively provided with a simulated light-emitting end 1 and a mouthpiece 13, and an air inlet hole 2 is formed on an outer wall of the housing 4. A battery 6, a vaporization controller, and a vaporization assembly are fixedly arranged in the housing 4. A battery compartment, an electret microphone cavity, and a vaporization cavity are arranged in the housing 4 in sequence from the simulated light-emitting end 1. The battery 6 is arranged in the battery compartment. The vaporization controller is composed of an electret microphone 8 and an electronic circuit board 7, and the electret microphone 8 is arranged in the electret microphone cavity. An output terminal of the electret microphone 8 is connected to the electronic circuit board 7. The electronic circuit board 7 is composed of a microprocessor and an ultrasonic circuit. The vaporization assembly includes a vaporizer 10 and a reservoir 12 connected to the vaporizer which are arranged in the vaporization cavity. An output terminal of the electronic circuit board 7 is connected to the vaporizer 10. The air inlet hole 2, the electret microphone cavity, and the vaporization cavity are in communication with the mouthpiece 13.

An airflow through hole is arranged between the electret microphone cavity and the battery compartment, and two air inlet holes are arranged. One of the air inlet holes is arranged on the housing 4 at an end of the simulated light-emitting end 1, and the other is arranged on the housing 4 at an end of the vaporization cavity.

The airflow through hole is arranged on a partition plate 5 between the electret microphone cavity and the battery compartment, and a surface of the partition plate 5 on a side of the electret microphone cavity is provided with a radial airflow guide groove. The uniform dispersion of air flow is facilitated, and the sensitivity of the electret microphone 8 is improved. The uniform dispersion of air flow is facilitated, and the sensitivity of the electret microphone 8 is improved.

The electret microphone cavity is in communication with the vaporization cavity through a one-way valve 9.

A heating element 11 is arranged in the vaporization cavity, and the heating element 11 is connected to the output terminal of the electronic circuit board 7. Vaporization is facilitated.

A liquid guide is arranged in the reservoir 12, and the liquid guide is made of foamed

nickel, stainless steel fiber felt, polymer foam, or foamed ceramics.

A shelf 3 is further arranged on a side of the vaporizer 10 in the vaporization cavity, a plurality of through holes are arranged on the shelf 3, and the liquid guide fills between the shelf 3 and the vaporizer 10. The liquid guide can absorb liquid particles which are not fully vaporized.

The electronic circuit board 7 in the vaporization controller is arranged in the battery compartment.

A raised strip is arranged on an inner wall of the housing 4 in a longitudinal direction. The raised strip is configured to arrange parts such as the battery, the electret microphone 8, the vaporizer 10, and the like while ensuring the smooth flow of gas.

Compared with the prior art, the utility model has the advantages below.

1. Good simulation effect: The vaporization controller in the utility model is composed of the electret microphone and the electronic circuit board. The electronic circuit board includes the microprocessor and the ultrasonic circuit. The electret microphone may be used to sensitively receive a change in an inhalation amount of a person, and quantitatively analyze an amount of airflow through an A/D conversion circuit inside the microprocessor in the electronic circuit board, so as to determine an ultrasonic vaporization amount according to the amount of airflow. That is to say, the current of the ultrasonic circuit is adjusted according to the signal of the electret microphone, and the smoking quantity of the vaporizer is controlled by the ultrasonic circuit, which truly simulates the feeling of smoking of a person. In addition, the two air inlet holes are designed in different sizes according to requirements, and the air inlet hole on the simulated light-emitting end is very small, which only provides the monitoring airflow of the electret microphone. Therefore, the overall design requires a small amount of airflow, and the user does not need to exert very much strength in use and feels relaxed.

This is completely different from that in the comparison document. In the comparison document, the vaporization controller is composed of a sensor and an electronic circuit board, and the electronic circuit board includes an electronic switch circuit and a high-frequency generator. A mechanical sensor detects whether an airflow passes. If so, the high-frequency circuit is controlled to be started, and then starts the vaporizer. However, the whole vaporization controller is only used as a switch for use, and cannot control the smoking quantity of the vaporizer. That is to say, the entire device of the utility model lays emphasis on a more reasonable electronic design instead of a mechanical design.

2. Low manufacturing costs: Low product costs, a simple structure, simple processing,

and high yields are realized.

3. Low use costs: Since the vaporization amount is adjusted according to the amount of inhalation, the use of the battery is dynamically adjusted, which can prolong the use time of one charge.

BRIEF DESCRIPTION OF THE DRAWINGS:

FIG. 1 is a schematic structural diagram of the utility model.

FIG. 2 is a view taken along line A-A in FIG. 1.

FIG. 3 is a view taken along line B-B in FIG. 1.

Reference numerals are described as follows.

1-Simulated light-emitting end, 2-Air inlet hole, 3-Illuminator, 4-Housing, 5-Partition plate, 6-Battery, 7-Electronic circuit board, 8-Electret microphone, 9-One-way valve, 10-Vaporizer, 11-Heating element, 12-Reservoir, 13-Mouthpiece.

DETAILED DESCRIPTION

As shown in the accompanying drawing, the utility model may be formed into various shapes such as a cigarette shape, a cigar shape, a tobacco pipe shape, or the like, and may be divided into two or more sections according to carrying requirements.

The utility model includes a housing 4, where a raised strip is arranged on an inner wall of the housing in a longitudinal direction. A simulated light-emitting end 1 and a mouthpiece 13 are respectively arranged on two ends of the housing 4, and an illuminator 3 is arranged in the simulated light-emitting end 1. A battery 6, a vaporization controller 7, and a vaporization assembly are fixedly arranged in the housing 4. A battery compartment, an electret microphone cavity, and a vaporization cavity are arranged in the housing 4 in sequence from the simulated light-emitting end 1. The battery 6 is arranged in the battery compartment. The vaporization controller 7 is composed of an electret microphone 8 and an electronic circuit board 7, and the electret microphone 8 is arranged in the electret microphone cavity. The electronic circuit board 7 is arranged in the battery compartment. An output terminal of the electret microphone 8 is connected to the electronic circuit board 7. The electronic circuit board 7 is composed of a microprocessor and an ultrasonic circuit. The vaporization assembly includes a vaporizer 10 and a reservoir 12. The vaporizer 10 and the reservoir 12 are connected and arranged in the vaporization cavity. A liquid guide is arranged in the reservoir 12. The liquid guide is made of foamed nickel. An output terminal of the electronic circuit board 7 is connected to the vaporizer 10. The air inlet hole 2, the electret microphone cavity, and the vaporization cavity are in communication with the mouthpiece 13. An airflow through

hole is arranged on a partition plate 5 between the electret microphone cavity and the battery compartment, and a surface of the partition plate 5 on a side of the electret microphone cavity is provided with a radial airflow guide groove. Two air inlet holes 2 are arranged on the housing 4. One of the air inlet holes is arranged on the housing 4 at an end of the simulated light-emitting end, and the other is arranged on the housing 4 of the vaporization cavity. The electret microphone cavity is in communication with the vaporization cavity through a one-way valve 9. A heating element 11 is arranged in the vaporization cavity, and the heating element 11 is connected to the output terminal of the electronic circuit board 7. A shelf 3 is further arranged on a side of the vaporizer 10 in the vaporization cavity, a plurality of through holes are arranged on the shelf 3, and the liquid guide fills between the shelf 3 and the vaporizer 10.

When a smoker smokes, the airflow entering from the air inlet 2 on the housing 4 at the end of the simulated light-emitting end 1 enters the electret microphone cavity through the airflow through hole on the partition plate 5 between the electret microphone cavity and the battery compartment in the housing, so that the electret microphone 8 receives the airflow. The electret microphone 8 sends the signal to the microprocessor in the electronic circuit board 7, and the microprocessor transmits an instruction to the ultrasonic circuit for transmission to the vaporizer 10. Meanwhile, the illuminator 3 in the simulated light-emitting end 1, such as an LED, starts to emit light. As long as airflow exists on the electret microphone 8, the brightness of the LED is generated and changed accordingly. The airflow enters the vaporization cavity directly or through the one-way valve 9, and reaches the vaporizer 10 through the shelf 3 in the vaporization cavity. The vaporizer 10 starts after receiving the instruction and vaporizes an e-liquid in an e-liquid reservoir, and vaporized droplets are suspended to form aerosol. When air is inhaled from the air inlet hole 2 on the housing 4 at the end of the simulated light-emitting end 1, an airflow is also generated in the air inlet hole 2 on the housing 4 of the vaporization cavity. The aerosol formed by the airflow with the e-liquid is sucked out by the mouthpiece 13.

The simulated light-emitting end 1 may be an independent part, and is connected to other parts through threads, which facilitates the replacement. The reservoir 12 may be arranged in the housing 4 at an end of the mouthpiece 13, which are fixedly connected into a whole, so that it is convenient to directly replace or refill the e-liquid. The e-liquid in an e-liquid cavity may be a liquid containing a small amount of nicotine or a pure plant extract.

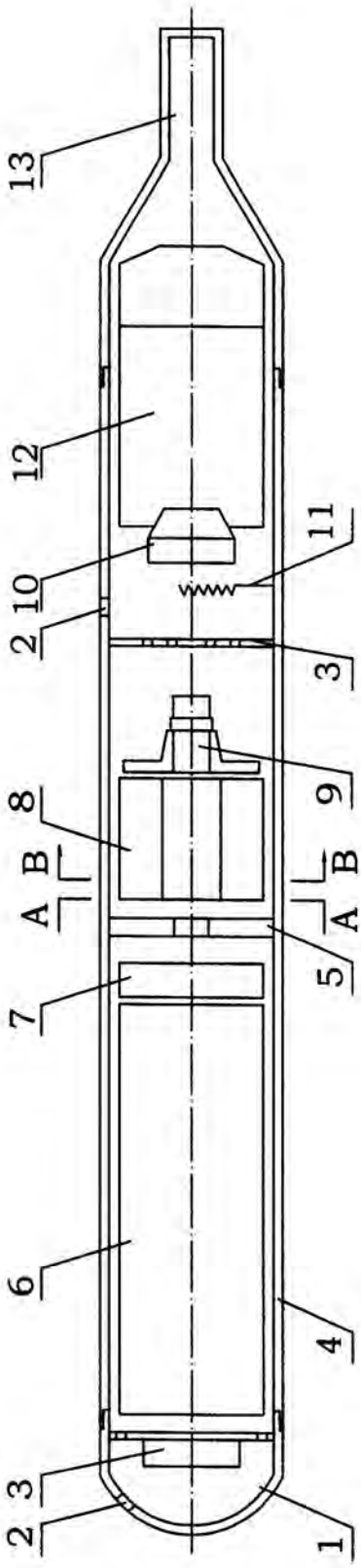
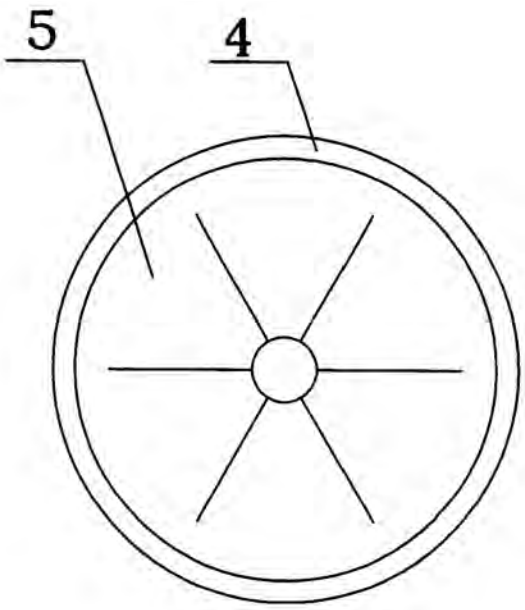
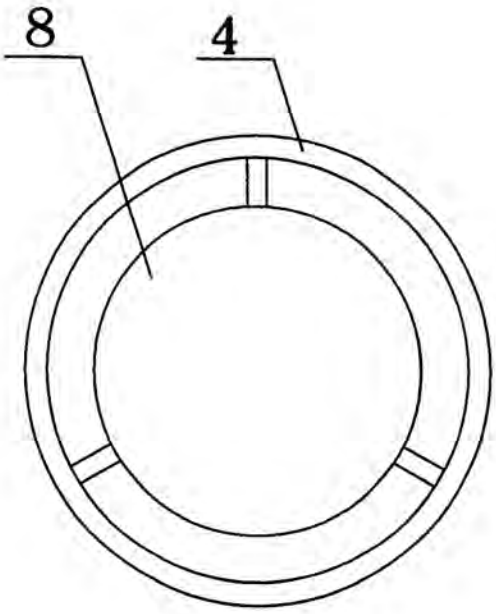


FIG. 1



A-A

FIG. 2



B-B

FIG. 3