



(11) **EP 3 967 167 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
11.12.2024 Bulletin 2024/50

(21) Application number: **20885998.3**

(22) Date of filing: **26.10.2020**

(51) International Patent Classification (IPC):
A24F 47/00^(2020.01) A24F 40/465^(2020.01)

(52) Cooperative Patent Classification (CPC):
A24F 40/40; A24F 40/20; A24F 40/46

(86) International application number:
PCT/CN2020/123680

(87) International publication number:
WO 2021/088673 (14.05.2021 Gazette 2021/19)

(54) **SMOKING DEVICE**

RAUCHVORRICHTUNG

DISPOSITIF À FUMER

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **05.11.2019 CN 201911068843**

(43) Date of publication of application:
16.03.2022 Bulletin 2022/11

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Description**TECHNICAL FIELD**

[0001] The present disclosure relates to a smoking device, belonging to the technical field of low-temperature cigarettes.

BACKGROUND

[0002] Low-temperature cigarettes are also called heat-not-burn tobacco products, which are different from traditional cigarettes that produce smoke by burning the tobacco itself. The tobacco of low-temperature cigarettes does not burn itself, but is heated by a heater, so that the nicotine therein is released in the form of smoke for smoking, such that a physiological sense of pleasure can be produced. Because the heating temperature of low-temperature cigarettes is lower than the burning temperature of traditional cigarettes, it can significantly reduce the large amount of harmful substances produced by the combustion of low-temperature cigarettes, and reduce the harm of passive smoking to non-smokers. Therefore, the harm of low-temperature cigarettes to the human body is much lower than the traditional direct-burn cigarettes.

[0003] Existing low-temperature cigarette electric heating devices are mainly divided into two types, central heating and peripheral heating. The central heating means that the heating device is inserted into the low-temperature cigarette, and the tobacco (shredded tobacco) is heated to produce smoke. However, after the low-temperature cigarette is heated by the heating device, the heating device and the tobacco in the low-temperature cigarette produce adhesion and compaction, so when the low-temperature cigarette is smoked, the tobacco is likely to fall off and stay in the heating device. Smoking devices are known from the following publications: CN 208 863 592 U, CN 209 202 162 U, CN 107 373 761 A or CN 108 402 526 A.

SUMMARY

[0004] In view of the above problems, the present disclosure is intended to provide a smoking device, such that reduce the adhesion and/or compaction between the tobacco substance in the low-temperature cigarette and the heating part, and reduce the risk of falling of the material (tobacco and/or tobacco leaf) when extracting (pulling out of) the low-temperature cigarette, making it easier to separate the heating part from the tobacco material.

[0005] In order to achieve the above-mentioned objectives, the present disclosure provides a smoking device, including a housing, a receiving part for accommodating a low-temperature cigarette, and a heating part for heating the low-temperature cigarette; the receiving part is provided in the housing, and the receiving part is provided with a cavity for accommodating the low-temperature cig-

arette; a top of the heating part penetrates a bottom of the receiving part and extends inside the receiving part; wherein,

5 when the low-temperature cigarette needs to be heated, the heating part is inserted inside the low-temperature cigarette to heat the low-temperature cigarette; and

10 when the low-temperature cigarette needs to be extracted, the heating part is rotated to make the heating part rotate relative to the low-temperature cigarette, such that the heating part is separated from tobacco substances in the low-temperature cigarette.

[0006] In a specific embodiment, a bottom of the heating part is connected to a first end of a handle, and a second end of the handle extends out of the housing through a window, the window is provided on a side wall of the housing.

[0007] In a specific embodiment, when the low-temperature cigarette needs to be extracted, the handle is rotated so that the heating part is driven by the handle to rotate.

[0008] In a specific embodiment, the bottom of the heating part is connected to an output shaft of a motor, the motor is connected to a control board, and the control board is configured to control activation and/or deactivation of the motor; the motor and the control board are both provided inside the housing.

[0009] In a specific embodiment, when the low-temperature cigarette needs to be extracted, the control board sends a driving signal to drive the motor to rotate, so that the heating part is driven by the motor to rotate.

[0010] In a specific embodiment, the output shaft of the motor is connected to the bottom of the heating part through a transmission part.

[0011] In a specific embodiment, the transmission part comprises a coupling, a driving end of the coupling is connected with the output shaft of the motor, and a driven end of the coupling is connected with the bottom of the heating part.

[0012] In a specific embodiment, the transmission part further comprises a driving gear and a driven gear engaged with the driving gear; the driving gear is connected with the output shaft of the motor, the driven gear is connected to the bottom of the heating part.

[0013] In a specific embodiment, the output shaft of the motor is connected to the driving gear through a reducer.

[0014] In a specific embodiment, the transmission part further comprises a belt transmission mechanism or a chain transmission mechanism.

[0015] According to the invention, the heating part is configured as a resistance heating element or an infrared heating element.

[0016] According to the invention, a plurality of electri-

cal contact points are provided at a bottom of the resistance heating element or the infrared heating element, each electrical contact point is connected to a battery part through a wire, and the battery part is provided inside the housing.

[0017] According to the invention, the each electrical contact point is connected to the control board through the wire, the control board is electrically connected to the battery part; the control board is configured for controlling ON/OFF of a circuit heated by the resistance heating element or the infrared heating element.

[0018] According to the invention, the electrical contact point is connected to a first end of the wire through an elastic electrical connection joint, and a second end of the wire is connected to the control board; wherein, a first end of the elastic electrical connection joint is in contact with the electrical contact point, and a second end of the elastic electrical connection joint is connected to the side wall of the housing through a spring.

[0019] In a specific embodiment, a first end of the spring is firmly connected to the side wall of the housing, and a second end of the spring is provided in a groove at the second end of the elastic electrical connection joint.

[0020] In a specific embodiment, the heating part is configured as an electromagnetic induction heating element; the electromagnetic induction heating element heats the low-temperature cigarette through electromagnetic induction eddy current.

[0021] In a specific embodiment, the receiving part is provided with at least one limiting portion on an inner wall; the at least one limiting portion is used to fix the low-temperature cigarette inside the receiving part, and to prevent the low-temperature cigarette from rotating.

[0022] In a specific embodiment, the at least one limiting portion comprises a protrusion and/or a limiting position.

[0023] In a specific embodiment, when the low-temperature cigarette is inserted into the receiving part, the low-temperature cigarette is deformed, and a friction is generated between the low-temperature cigarette and the receiving part, so that the low-temperature cigarette is fixed inside the receiving part and unable to rotated.

[0024] In a specific embodiment, when the heating part rotates, a friction generated between the heating part and the low-temperature cigarette is smaller than the friction generated between the low-temperature cigarette and the receiving part, causing the heating part and the low-temperature cigarette to rotate relative to each other, thereby separating the heating part from the tobacco substances in the low-temperature cigarette.

[0025] In a specific embodiment, the at least one limiting portion is provided in a strip shape, and the at least one limiting portion extends from a top of the receiving part to the bottom of the receiving part.

[0026] In a specific embodiment, a plurality of the limiting portions are provided at intervals.

[0027] In a specific embodiment, the heating part has a rotation angle of 0-360 degrees, or greater than 360

degrees.

[0028] In a specific embodiment, the heating part has a cross section in a circular shape, an oval shape or a polygon shape.

5 **[0029]** In a specific embodiment, the control board is provided with a charging interface; the charging interface is used to charge the battery part.

[0030] In a specific embodiment, the housing is provided with a control button on the side wall, and the control board is connected to the battery part through the control button.

10 **[0031]** Other features and advantages of the present disclosure will be described in the following description, and part of them becomes obvious from the description, or understood by implementing the present disclosure. The objectives and other advantages of the present disclosure can be realized and obtained through the structures specifically pointed out in the specification, claims and drawings.

BRIEF DESCRIPTION OF DRAWINGS

[0032] In order to more clearly describe the technical solutions in the embodiments of the present disclosure, the following will briefly introduce the drawings required in the description of the embodiments:

FIG. 1 is a schematic structural view illustrating a smoking device according to a specific embodiment of the present disclosure;

FIG. 2 is a schematic structural view illustrating a smoking device according to another specific embodiment of the present disclosure;

FIG. 3 is a schematic structural view illustrating a smoking device according to yet another specific embodiment of the present disclosure;

FIG. 4 is a schematic structural view illustrating a smoking device according to a further specific embodiment of the present disclosure;

FIG. 5 is a schematic cross-sectional structure diagram illustrating a smoking device according to a specific embodiment of the present disclosure when the low-temperature cigarette is inserted into the receiving part.

DESCRIPTION OF EMBODIMENTS

[0033] The implementation of the present disclosure will be described in detail below with reference to the accompanying drawings and embodiments, so as to fully understand how the present disclosure applies technical means to solve technical problems and achieve the realization process of technical effects and implement them accordingly. It should be noted that, as long as there is no conflict, each embodiment of the present disclosure and each feature in each embodiment can be combined with one another, and the technical solutions formed are all within the protection scope of the present disclosure.

The directional terms mentioned in the present disclosure, such as "top", "bottom", "inner", "outer", "left", "right", etc., are only a way of referring to the attached drawings. Therefore, the directional terms used are used to describe and understand the present disclosure, rather than to limit the present disclosure.

[0034] As shown in FIGS. 1 to 4, the smoking device provided by the present disclosure may include a housing 1, a receiving part 3 for a accommodating low-temperature cigarette 2 and a heating part 4 for heating the low-temperature cigarette 2. The receiving part 3 is provided in the housing 1, and a cavity for accommodating low-temperature cigarette is provided in the receiving part 3. The top of the heating part 4 penetrates the bottom of the receiving part 3 and extends into the interior of the receiving part 3. Wherein, when the low-temperature cigarette 2 needs to be heated, the heating part 4 is inserted inside the low-temperature cigarette 2 to heat the low-temperature cigarette 2. When the low-temperature cigarette 2 needs to be extracted, the heating part 4 is rotated to make the heating part 4 and the low-temperature cigarette 2 rotate relative to each other, so that the heating part 4 can be separated from the tobacco material 21 (tobacco and/or tobacco leaves) in the low-temperature cigarette 2. It should be noted that separation includes the relative change of the position of the low-temperature cigarette 2 and the heating part 4, or the removal of the adhesion and/or compaction state between the low-temperature cigarette 2 and the heating part 4 due to heating and carbonization. The relative movement of the heating part 4 and the low-temperature cigarette 2 before the extraction of the low-temperature cigarette 2 can reduce the adhesion and/or compaction between the tobacco material 21 and the heating part 4, and reduce the risk of tobacco material 21 falling on the receiving part 3 when the low-temperature cigarette 2 is extracted, and can make the heating part 4 and the tobacco substance 21 easy to separate.

[0035] In a specific embodiment, as shown in FIG. 1, the bottom of the heating part 4 is connected to the first end of the handle 5, and the second end of the handle 5 extends to the outside of the housing 1 through a window, and the window is provided on the side wall of the housing 1. Wherein, the size of the window defines the rotation angle of the handle 5, thereby indirectly restricts the rotation angle of the heating part 4.

[0036] In a specific embodiment, as shown in FIG. 1, when the low-temperature cigarette 2 needs to be extracted, the handle 5 is rotated, and the handle 5 drives the heating part 4 to rotate, so that the heating part 4 and the low-temperature cigarette 2 rotate relative to each other, thereby making the heating part 4 separated from the tobacco substance 21 in the low-temperature cigarette 2. By rotating the handle 5 to drive the heating part 4 to rotate, the structure is simple.

[0037] In a specific embodiment, as shown in FIGS. 2 to 4, the bottom of the heating part 4 is connected to the output shaft of the motor 6, the motor 6 is electrically

connected to the control board 7, and the control board 7 can control activation (rotation) and/ or deactivation (stop) of the motor 6. It has high degree of intelligence, good flexibility. Both the motor 6 and the control board 7 are provided inside the housing 1.

[0038] In a specific embodiment, as shown in FIGS. 2 to 4, when the low-temperature cigarette 2 needs to be extracted, the control board 7 sends a drive signal to drive the motor 6 to rotate, and the motor 6 drives the heating part 4 to rotate, so that the heating part 4 and the low-temperature cigarette 2 rotates relative to each other, thereby separating the heating part 4 from the tobacco substance 21 in the low-temperature cigarette 2. The heating part 4 is driven to rotate by driving the motor 6, which is convenient to use.

[0039] In a specific embodiment, as shown in FIGS. 2 to 4, the output shaft of the motor 6 is connected to the bottom of the heating part 4 through a transmission part.

[0040] In a specific embodiment, as shown in FIG. 2, the transmission part includes a coupling 8. The driving end of the coupling 8 is connected to the output shaft of the motor 6, and the driven end of the coupling 8 is connected to the bottom of the heating part 4, enabling the heating part 4 and the motor 6 to rotate synchronously. The transmission by the coupling can reduce the vibration of the mechanical transmission and reduce the impact peak load. At the same time, it has a certain degree of cushioning and shock absorption performance and overload safety protection.

[0041] In a specific embodiment, as shown in FIGS. 2 and 3, the transmission part further includes a driving gear 9 and a driven gear 10 engaged with the driving gear 9. The driving gear 9 is connected to the output shaft of the motor 6, and the driven gear 10 is connected to the bottom of the heating part 4. Gear transmission can facilitate deceleration or acceleration, it has a high carrying capacity, high transmission efficiency, and good stability.

[0042] In a preferred embodiment, as shown in FIGS. 2 and 3, the output shaft of the motor 6 is connected to the driving gear 9 through a reducer 11. The reducer 11 can effectively reduce the rotation speed of the motor 6, thereby increasing the stability of rotation by heating part 4.

[0043] In a specific embodiment, the transmission part further includes a belt transmission mechanism or a chain transmission mechanism. Wherein, the belt transmission mechanism includes a first pulley and a second pulley, and the first pulley and the second pulley are connected by a belt. The first pulley is connected to the output shaft of the motor 6, and the second pulley is connected to the bottom of the heating part 4. The belt transmission has the advantages of cushioning impact, absorbing vibration, low noise, low cost and convenient maintenance. The chain transmission mechanism includes a first sprocket and a second sprocket, and the first sprocket and the second sprocket are connected by a chain. The first sprocket is connected with the output shaft of the

motor 6, and the second sprocket is connected with the bottom of the heating part 4. The chain transmission has no elastic sliding and slipping phenomenon, the average transmission ratio is accurate, the work is reliable, the efficiency is high, and the overload capacity is strong.

[0044] In a specific embodiment, the rotation angle of the heating part 4 is 0 to 360 degrees, or the rotation angle of the heating part 4 is greater than 360 degrees. Preferably, the rotation mode of the heating part 4 is set to be forward and reverse cyclic rotation, and the rotation angle of the heating part 4 is greater than 0 degrees and less than 360 degrees.

[0045] In a specific embodiment, the heating part 4 is configured as a resistance heating element or an infrared heating element, such that the temperature can be quickly risen, it has good controllability.

[0046] In a specific embodiment, as shown in FIGS. 1 and 4, the bottom of the resistance heating element or the infrared heating element is provided with a plurality of electrical contact points 41, and each of the electrical contact points 41 is connected to the battery part 13 through a wire 12. The battery part 13 is provided inside the housing 1. Preferably, the wire 12 is a flexible wire that can be bent. The flexible wire is made of a material that has high toughness and can be repeatedly bent. When the heating part 4 rotates in the forward direction, the flexible wire deforms, and when it rotates in the reverse direction, the flexible wire returns to the original state.

[0047] In a specific embodiment, as shown in FIGS. 1 and 4, the electrical contact point 41 is connected to the control board 7 through the wire 12, and the control board 7 is electrically connected to the battery part 13. The control board 7 can control the connection (ON) or disconnection (OFF) of the circuit heated by the resistance heating element or by the infrared heating element. It has a high degree of intelligence and flexibility. When the circuit heated by the resistance heating element or the infrared heating element is connected, the resistance heating element or the infrared heating element generates heat and can heat the low-temperature cigarette 2. When the circuit heated by the resistance heating element or the infrared heating element is disconnected, the resistance heating element or the infrared heating element does not generate heat.

[0048] In a specific embodiment, as shown in FIG. 4, the electrical contact point 41 is connected to the first end of the wire 12 through the elastic electrical connection joint 14, and the second end of the wire 12 is connected to the control board 7. Wherein, the first end of the elastic electrical connection joint 14 is in contact with the electrical contact point 41, and the second end of the elastic electrical connection joint 14 is connected to the side wall of the housing 1 through the spring 15. When the heating part 4 rotates, within a specific angle range, the elastic electrical connection joint 14 and the electrical contact point 41 always maintain electrical connection. By controlling the rotation angle of the heating unit 4, the

heating unit 4 can be maintained within a specific angle range, that is, the heating unit 4 and the control board 7 can be maintained in a reliable electrical connection. At this time, the degree of bending of the wire 12 is small and the service life is longer, so that the connection between the heating part 4 and the control board 7 is more reliable.

[0049] In a specific embodiment, as shown in FIG. 4, the first end of the spring 15 is firmly connected to the side wall of the housing 1, and the second end of the spring 15 is provided in the groove at the second end of the elastic electrical connection joint 14.

[0050] In a specific embodiment, the heating part 4 is configured as an electromagnetic induction heating element, such that it can quickly heat up, and cause heat to be concentrated inside the electromagnetic induction heating element, with minimal external heat dissipation, high thermal efficiency, and significant energy-saving effects.

[0051] In a specific embodiment, electromagnetic induction heating uses electromagnetic induction eddy currents to heat low-temperature cigarettes.

[0052] In a specific embodiment, as shown in FIG. 5, a limiting portion 31 is provided on the inner wall of the receiving part 3 for fixing the low-temperature cigarette 2 inside the receiving part 3 and for preventing the low-temperature cigarette 2 from rotating.

[0053] In a specific embodiment, the limiting portion 31 includes at least one protrusion and/or at least one limiting position.

[0054] In a specific embodiment, as shown in FIG. 5, when the low-temperature cigarette 2 is inserted into the receiving part 3, the low-temperature cigarette 2 is deformed, and a friction is generated between the low-temperature cigarette 2 and the receiving part 3. The low-temperature cigarette 2 can be fixed inside the receiving part 3 and cannot be rotated.

[0055] In a specific embodiment, when the heating part 4 rotates, the friction force generated between the heating part 4 and the low-temperature cigarette 2 is less than the friction force generated between the low-temperature cigarette 2 and the receiving part 3, so that the heating part 4 and the low-temperature cigarette 2 can rotate relative to each other, thereby separating the heating part 4 from the tobacco substance 21 in the low-temperature cigarette 2.

[0056] In a preferred embodiment, the limiting portion 31 is provided in a strip shape, and the limiting portion 31 extends from the top of the receiving part 3 to the bottom of the receiving part 3.

[0057] In a preferred embodiment, as shown in FIG. 5, a plurality of the limiting portions 31 are provided at intervals, making the low-temperature cigarette 2 uniformly deform, and good stability can be achieved.

[0058] In a specific embodiment, the cross section of the heating part 4 is set to be circular, oval or polygonal.

[0059] In a specific embodiment, as shown in FIGS. 1 to 4, a charging interface 71 is provided on the control

board 7 for charging the battery part 13, so that the battery part 13 can be used continuously.

[0060] In a specific embodiment, as shown in FIGS. 1 to 4, a control button 16 is provided on the side wall of the housing 1, and the control board 7 is connected to the battery part 13 through the control button 16. Specifically, when the control button 16 is turned on, the battery part 13 supplies power to the heating unit 4. When the control button 16 is turned off, the battery part 13 stops supplying power to the heating unit 4.

[0061] In a specific embodiment, as shown in FIGS. 1 to 4, the heating part 4 heats the tobacco section of the low-temperature cigarette 2.

[0062] When the present disclosure is used, and when the low-temperature cigarette 2 needs to be heated, the heating part 4 is inserted inside the tobacco section of the low-temperature cigarette 2 to heat the tobacco substance 21. When the low-temperature cigarette 2 needs to be extracted, the heating part 4 is driven to rotate by rotating the handle 5 (as shown in FIG. 1) or by driving the motor 6 (as shown in FIGS. 2 to 4) to rotate, so that the heating part 4 can rotate relative to the low-temperature cigarette 2, making the heating part 4 separated from the tobacco substance 21 in the low-temperature cigarette 2.

[0063] Although the disclosed embodiments of the present disclosure are as described above, the content described is only the embodiments used to facilitate the understanding of the present disclosure, and is not intended to limit the present disclosure. However, the patent protection scope of the present disclosure is still subject to the scope defined by the appended claims.

Claims

1. A smoking device, comprising a housing, a receiving part for accommodating a low-temperature cigarette, and a heating part for heating the low-temperature cigarette;

the receiving part is provided in the housing, and the receiving part is provided with a cavity for accommodating the low-temperature cigarette inside the receiving part;

a top of the heating part penetrates a bottom of the receiving part and extends inside the receiving part; **wherein**,

when the low-temperature cigarette needs to be heated, the heating part is inserted inside the low-temperature cigarette to heat the low-temperature cigarette; and

when the low-temperature cigarette needs to be extracted, the heating part is rotated to make the heating part rotate relative to the low-temperature cigarette, such that the heating part is separated from tobacco substances in the low-temperature cigarette; **wherein**

the heating part is configured as a resistance heating element or an infrared heating element; a plurality of electrical contact points are provided at a bottom of the resistance heating element or the infrared heating element, each electrical contact point is connected to a battery part through a wire, and the battery part is provided inside the housing, the each electrical contact point is connected to the control board through the wire, the control board is electrically connected to the battery part; the control board is configured for controlling ON/OFF of a circuit heated by the resistance heating element or the infrared heating element, the electrical contact point is connected to a first end of the wire through an elastic electrical connection joint, and a second end of the wire is connected to the control board; **wherein**, a first end of the elastic electrical connection joint is in contact with the electrical contact point, and a second end of the elastic electrical connection joint is connected to the side wall of the housing through a spring, the smoking device being further **characterized in that**

the rotation mode of the heating part is set to be forward and reverse cyclic rotation; the wire is a flexible wire that can be bent, the flexible wire is made of a material that has high toughness and can be repeatedly bent.

2. The smoking device according to claim 1, wherein a bottom of the heating part is connected to a first end of a handle, and a second end of the handle extends out of the housing through a window, the window is provided on a side wall of the housing.
3. The smoking device according to claim 2, wherein when the low-temperature cigarette needs to be extracted, the handle is rotated so that the heating part is driven by the handle to rotate.
4. The smoking device according to claim 1, wherein the bottom of the heating part is connected to an output shaft of a motor, the motor is connected to a control board, and the control board is configured to control activation and/or deactivation of the motor; the motor and the control board are both provided inside the housing.
5. The smoking device according to claim 4, wherein when the low-temperature cigarette needs to be extracted, the control board sends a driving signal to drive the motor to rotate, so that the heating part is driven by the motor to rotate.
6. The smoking device according to claim 4, wherein the output shaft of the motor is connected to the bottom of the heating part through a transmission part.

7. The smoking device according to claim 6, wherein the transmission part comprises a coupling, a driving end of the coupling is connected with the output shaft of the motor, and a driven end of the coupling is connected with the bottom of the heating part. 5
8. The smoking device according to claim 6, wherein the transmission part further comprises a driving gear and a driven gear engaged with the driving gear; the driving gear is connected with the output shaft of the motor, the driven gear is connected to the bottom of the heating part. 10
9. The smoking device according to claim 8, wherein the output shaft of the motor is connected to the driving gear through a reducer. 15
10. The smoking device according to claim 6, wherein the transmission part further comprises a belt transmission mechanism or a chain transmission mechanism. 20
11. The smoking device according to claim 1, wherein a first end of the spring is firmly connected to the side wall of the housing, and a second end of the spring is provided in a groove at the second end of the elastic electrical connection joint. 25
12. The smoking device according to claim 4, wherein the heating part is configured as an electromagnetic induction heating element; the electromagnetic induction heating element heats the low-temperature cigarette through electromagnetic induction eddy current. 30
13. The smoking device according to claim 1, wherein the receiving part is provided with at least one limiting portion on an inner wall; the at least one limiting portion is used to fix the low-temperature cigarette inside the receiving part, and to prevent the low-temperature cigarette from rotating. 35
14. The smoking device according to claim 13, wherein the at least one limiting portion comprises a protrusion and/or a limiting position. 40
15. The smoking device according to claim 13, wherein when the low-temperature cigarette is inserted into the receiving part, the low-temperature cigarette is deformed, and a friction is generated between the low-temperature cigarette and the receiving part, so that the low-temperature cigarette is fixed inside the receiving part and unable to rotated. 45
16. The smoking device according to claim 15, wherein when the heating part rotates, a friction generated between the heating part and the low-temperature cigarette is smaller than the friction generated between the low-temperature cigarette and the receiving part, causing the heating part and the low-temperature cigarette to rotate relative to each other, thereby separating the heating part from the tobacco substances in the low-temperature cigarette. 50
17. The smoking device according to claim 13, wherein the at least one limiting portion is provided in a strip shape, and the at least one limiting portion extends from a top of the receiving part to the bottom of the receiving part. 55
18. The smoking device according to claim 17, wherein a plurality of the limiting portions are provided at intervals.
19. The smoking device according to claim 1, wherein the heating part has a rotation angle of 0-360 degrees, or greater than 360 degrees.
20. The smoking device according to claim 1, wherein the heating part has a cross section in a circular shape, an oval shape or a polygon shape.
21. The smoking device according to claim 1, wherein the control board is provided with a charging interface; the charging interface is used to charge the battery part.
22. The smoking device according to claim 1, wherein the housing is provided with a control button on the side wall, and the control board is connected to the battery part through the control button.

Patentansprüche

1. Rauchvorrichtung, umfassend ein Gehäuse, ein Aufnahmeteil zum Aufnehmen einer Niedertemperatur-Zigarette und ein Heizteil zum Erhitzen der Niedertemperatur-Zigarette;
- wobei das Aufnahmeteil in dem Gehäuse vorgesehen ist und das Aufnahmeteil mit einem Hohlraum zum Aufnehmen der Niedertemperatur-Zigarette im Inneren des Aufnahmeteils versehen ist;
- ein oberes Ende des Heizteils eine Unterseite des Aufnahmeteils durchdringt und sich in das Innere des Aufnahmeteils erstreckt; **wobei**, wenn die Niedertemperatur-Zigarette erhitzt werden muss, das Heizteil in das Innere von der Niedertemperatur-Zigarette eingeführt wird, um die Niedertemperatur-Zigarette zu erhitzen; und wenn die Niedertemperatur-Zigarette herausgezogen werden muss, das Heizteil gedreht wird, um das Heizteil relativ zu der Niedertemperatur-Zigarette derart sich drehen zu lassen,

- dass das Heizteil von den Tabaksubstanzen in der Niedertemperatur-Zigarette getrennt wird; **wobei** der Heizteil als ein Widerstandsheizelement oder ein Infrarotheizelement konfiguriert ist; eine Vielzahl von elektrischen Kontaktpunkten an einer Unterseite des Widerstandsheizelements oder des Infrarotheizelements vorgesehen ist, jeder elektrische Kontaktpunkt mit einem Batterieteil durch einen Draht verbunden ist, und der Batterieteil innerhalb des Gehäuses vorgesehen ist, jeder elektrische Kontaktpunkt mit der Steuerplatine durch den Draht verbunden ist, die Steuerplatine elektrisch mit dem Batterieteil verbunden ist; die Steuerplatine zum Steuern von EIN/AUS eines durch das Widerstandsheizelement oder das Infrarotheizelement beheizten Schaltkreises konfiguriert ist, der elektrische Kontaktpunkt mit einem ersten Ende des Drahtes durch einen elastischen elektrischen Verbindungsanschluss verbunden ist und ein zweites Ende des Drahtes mit der Steuerplatine verbunden ist; **wobei** ein erstes Ende des elastischen elektrischen Verbindungsanschlusses in Kontakt mit dem elektrischen Kontaktpunkt ist und ein zweites Ende des elastischen elektrischen Verbindungsanschlusses mit der Seitenwand des Gehäuses durch eine Feder verbunden ist, wobei die Rauchvorrichtung ferner **dadurch gekennzeichnet ist, dass** der Drehmodus des Heizteils auf eine zyklische Vorwärts- und Rückwärtsdrehbewegung eingestellt ist; der Draht ein biegsamer Draht ist, der gebogen werden kann, wobei der biegsame Draht aus einem Material hergestellt ist, das eine hohe Zähigkeit aufweist und wiederholt gebogen werden kann.
2. Rauchvorrichtung nach Anspruch 1, wobei eine Unterseite des Heizteils mit einem ersten Ende eines Griffs verbunden ist und ein zweites Ende des Griffs sich durch ein Fenster aus dem Gehäuse heraus erstreckt, wobei das Fenster an einer Seitenwand des Gehäuses vorgesehen ist.
 3. Rauchvorrichtung nach Anspruch 2, wobei, wenn die Niedertemperatur-Zigarette herausgezogen werden muss, der Griff gedreht wird, sodass das Heizteil durch den Griff zum Drehen angetrieben wird.
 4. Rauchvorrichtung nach Anspruch 1, wobei die Unterseite des Heizteils mit einer Abtriebswelle eines Motors verbunden ist, der Motor mit einer Steuerplatine verbunden ist und die Steuerplatine so konfiguriert ist, dass sie die Aktivierung und/oder die Deaktivierung des Motors steuert; der Motor und die Steuerplatine beide innerhalb des Gehäuses vorgesehen sind.
 5. Rauchvorrichtung nach Anspruch 4, wobei, wenn die Niedertemperatur-Zigarette herausgezogen werden muss, die Steuerplatine ein Antriebssignal sendet, um den Motor zum Drehen anzutreiben, sodass das Heizteil durch den Motor zum Drehen angetrieben wird.
 6. Rauchvorrichtung nach Anspruch 4, wobei die Abtriebswelle des Motors mit der Unterseite des Heizteils durch ein Übertragungsteil verbunden ist.
 7. Rauchvorrichtung nach Anspruch 6, wobei das Übertragungsteil eine Kupplung umfasst, wobei ein antreibendes Ende der Kupplung mit der Abtriebswelle des Motors verbunden ist und ein angetriebenes Ende der Kupplung mit der Unterseite des Heizteils verbunden ist.
 8. Rauchvorrichtung nach Anspruch 6, wobei das Übertragungsteil ferner ein Antriebszahnrad und ein mit dem Antriebszahnrad in Eingriff stehendes Abtriebszahnrad umfasst; das Antriebszahnrad mit der Abtriebswelle des Motors verbunden ist, wobei das Abtriebszahnrad mit der Unterseite des Heizteils verbunden ist.
 9. Rauchvorrichtung nach Anspruch 8, wobei die Abtriebswelle des Motors mit dem Antriebszahnrad über ein Unteretzungsgetriebe verbunden ist.
 10. Rauchvorrichtung nach Anspruch 6, wobei das Übertragungsteil ferner einen Riemen-Übertragungsmechanismus oder einen Ketten-Übertragungsmechanismus umfasst.
 11. Rauchvorrichtung nach Anspruch 1, wobei ein erstes Ende der Feder fest mit der Seitenwand des Gehäuses verbunden ist und ein zweites Ende der Feder in einer Nut an dem zweiten Ende des elastischen elektrischen Verbindungsanschlusses vorgesehen ist.
 12. Rauchvorrichtung nach Anspruch 4, wobei das Heizteil als ein elektromagnetisches Induktionsheizelement konfiguriert ist; wobei das elektromagnetische Induktionsheizelement die Niedertemperatur-Zigarette durch elektromagnetischen Induktionswirbelstrom erwärmt.
 13. Rauchvorrichtung nach Anspruch 1, wobei das Aufnahmeteil mit mindestens einem Begrenzungsabschnitt an einer Innenwand versehen ist; der mindestens eine Begrenzungsabschnitt verwendet wird, um die Niedertemperatur-Zigarette im Inneren des Aufnahmeteils zu fixieren und um zu verhindern, dass sich die Niedertemperatur-Zigarette dreht.
 14. Rauchvorrichtung nach Anspruch 13, wobei der min-

destens eine Begrenzungsabschnitt einen Vorsprung und/oder eine Begrenzungsposition aufweist.

15. Rauchvorrichtung nach Anspruch 13, wobei, wenn die Niedertemperatur-Zigarette in das Aufnahmeteil eingeführt wird, die Niedertemperatur-Zigarette verformt wird und eine Reibung zwischen der Niedertemperatur-Zigarette und dem Aufnahmeteil erzeugt wird, sodass die Niedertemperatur-Zigarette innerhalb des Aufnahmeteils fixiert ist und nicht in der Lage ist, sich zu drehen. 5
16. Rauchvorrichtung nach Anspruch 15, wobei, wenn sich das Heizteil dreht, eine zwischen dem Heizteil und der Niedertemperatur-Zigarette erzeugte Reibung kleiner ist als die zwischen der Niedertemperatur-Zigarette und dem Aufnahmeteil erzeugte Reibung, wodurch das Heizteil und die Niedertemperatur-Zigarette veranlasst werden, sich relativ zueinander zu drehen, wodurch das Heizteil von den Tabaksubstanzen in der Niedertemperatur-Zigarette getrennt wird. 10 20
17. Rauchvorrichtung nach Anspruch 13, wobei der mindestens eine Begrenzungsabschnitt in einer Streifenform ausgebildet ist und sich der mindestens eine Begrenzungsabschnitt von einer Oberseite des Aufnahmeteils zu der Unterseite des Aufnahmeteils hin erstreckt. 25 30
18. Rauchvorrichtung nach Anspruch 17, wobei eine Vielzahl der Begrenzungsabschnitte in Abständen vorgesehen sind. 35
19. Rauchvorrichtung nach Anspruch 1, wobei der Heizteil einen Drehwinkel von 0 bis 360 Grad oder mehr als 360 Grad aufweist. 40
20. Rauchvorrichtung nach Anspruch 1, wobei das Heizteil einen Querschnitt in einer kreisförmigen Form, einer ovalen Form oder einer polygonalen Form aufweist. 45
21. Rauchvorrichtung nach Anspruch 1, wobei die Steuerplatine mit einer Ladeschnittstelle versehen ist; die Ladeschnittstelle zum Laden des Batterieteils verwendet wird. 50
22. Rauchvorrichtung nach Anspruch 1, wobei das Gehäuse mit einem Steuerknopf an der Seitenwand versehen ist und die Steuerplatine über den Steuerknopf mit dem Batterieteil verbunden ist. 55

Revendications

1. Dispositif à fumer, comprenant un boîtier, une partie

de réception utilisée pour recevoir une cigarette à basse température, et une partie de chauffage utilisée pour chauffer la cigarette à basse température ;

la partie de réception est disposée dans le boîtier, et la partie de réception est dotée d'une cavité utilisée pour recevoir la cigarette à basse température à l'intérieur de la partie de réception ;

la partie supérieure de la partie de chauffage passe à travers le fond de la partie de réception et s'étend à l'intérieur de la partie de réception ; dans lequel

lorsque la cigarette à basse température doit être chauffée, la partie de chauffage est insérée à l'intérieur de la cigarette à basse température pour chauffer la cigarette à basse température ; et

lorsque la cigarette à basse température doit être extraite, la partie de chauffage est tournée pour amener la partie de chauffage à tourner par rapport à la cigarette à basse température, de sorte que la partie de chauffage soit séparée de substances de tabac dans la cigarette à basse température ; dans lequel

la partie de chauffage est configurée comme un élément de chauffage par résistance ou un élément de chauffage par rayonnement infrarouge ;

une pluralité de points de contact électrique est disposée au niveau du fond de l'élément de chauffage par résistance ou de l'élément de chauffage par rayonnement infrarouge, chaque point de contact électrique est connecté à une partie de batterie par l'intermédiaire d'un fil, et la partie de batterie est disposée à l'intérieur du boîtier, chaque point de contact électrique est connecté au panneau de commande par l'intermédiaire du fil, le panneau de commande est électriquement connecté à la partie de batterie ; le panneau de commande est configuré pour commander la fonction MARCHE/ARRÊT d'un circuit chauffé par l'élément de chauffage par résistance ou l'élément de chauffage par rayonnement infrarouge, le point de contact électrique est connecté à une première extrémité du fil par l'intermédiaire d'un joint de connexion électrique élastique, et une deuxième extrémité du fil est connectée au panneau de commande ; dans lequel, une première extrémité du joint de connexion électrique élastique est en contact avec le point de contact électrique, et une deuxième extrémité du joint de connexion électrique élastique est connectée à la paroi latérale du boîtier par l'intermédiaire d'un ressort, le dispositif à fumer étant en outre **caractérisé en ce que le** mode de rotation de la partie de chauffage est défini pour être une rotation avant et arrière

- cyclique ; le fil est un fil flexible qui peut être courbé, le fil flexible est composé d'un matériau qui présente une résistance élevée et peut être courbé de manière répétée.
2. Dispositif à fumer selon la revendication 1, dans lequel le fond de la partie de chauffage est connecté à une première extrémité d'une poignée, et une deuxième extrémité de la poignée s'étend vers l'extérieur du boîtier à travers une fenêtre, la fenêtre est disposée sur une paroi latérale du boîtier. 5
 3. Dispositif à fumer selon la revendication 2, dans lequel lorsque la cigarette à basse température doit être extraite, la poignée est tournée de sorte que la partie de chauffage soit entraînée par la poignée en rotation. 10
 4. Dispositif à fumer selon la revendication 1, dans lequel le fond de la partie de chauffage est connecté à un arbre de sortie d'un moteur, le moteur est connecté à un panneau de commande, et le panneau de commande est configuré pour commander l'activation et/ou la désactivation du moteur ; le moteur et le panneau de commande sont tous deux disposés à l'intérieur du boîtier. 15
 5. Dispositif à fumer selon la revendication 4, dans lequel lorsque la cigarette à basse température doit être extraite, le panneau de commande envoie un signal d'entraînement pour entraîner le moteur en rotation, de sorte que la partie de chauffage soit entraînée par le moteur en rotation. 20
 6. Dispositif à fumer selon la revendication 4, dans lequel l'arbre de sortie du moteur est connecté au fond de la partie de chauffage par l'intermédiaire d'une partie de transmission. 25
 7. Dispositif à fumer selon la revendication 6, dans lequel la partie de transmission comprend un accouplement, une extrémité d'entraînement de l'accouplement est connectée à l'arbre de sortie du moteur, et une extrémité entraînée de l'accouplement est connectée au fond de la partie de chauffage. 30
 8. Dispositif à fumer selon la revendication 6, dans lequel la partie de transmission comprend en outre un engrenage d'entraînement et un engrenage entraîné en prise avec l'engrenage d'entraînement ; l'engrenage d'entraînement est connecté à l'arbre de sortie du moteur, l'engrenage entraîné est connecté au fond de la partie de chauffage. 35
 9. Dispositif à fumer selon la revendication 8, dans lequel l'arbre de sortie du moteur est connecté à l'engrenage d'entraînement par le biais d'un réducteur. 40
 10. Dispositif à fumer selon la revendication 6, dans lequel la partie de transmission comprend en outre un mécanisme de transmission par courroie ou un mécanisme de transmission par chaîne. 45
 11. Dispositif à fumer selon la revendication 1, dans lequel une première extrémité du ressort est fermement connectée à la paroi latérale du boîtier, et une deuxième extrémité du ressort est disposée dans une rainure au niveau de la deuxième extrémité du joint de connexion électrique élastique. 50
 12. Dispositif à fumer selon la revendication 4, dans lequel la partie de chauffage est configurée comme un élément de chauffage par induction électromagnétique ; l'élément de chauffage par induction électromagnétique chauffe la cigarette à basse température par le biais d'un courant de Foucault à induction électromagnétique. 55
 13. Dispositif à fumer selon la revendication 1, dans lequel la partie de réception est dotée d'au moins une partie de limitation sur une paroi interne ; l'au moins une partie de limitation est utilisée pour fixer la cigarette à basse température à l'intérieur de la partie de réception, et pour empêcher la cigarette à basse température de tourner.
 14. Dispositif à fumer selon la revendication 13, dans lequel l'au moins une partie de limitation comprend une saillie et/ou une position de limitation.
 15. Dispositif à fumer selon la revendication 13, dans lequel la cigarette à basse température est insérée dans la partie de réception, la cigarette à basse température est déformée, et une friction est générée entre la cigarette à basse température et la partie de réception, de sorte que la cigarette à basse température soit fixée à l'intérieur de la partie de réception et incapable d'être tournée.
 16. Dispositif à fumer selon la revendication 15, dans lequel lorsque la partie de chauffage tourne, une friction générée entre la partie de chauffage et la cigarette à basse température est plus petite que la friction générée entre la cigarette à basse température et la partie de réception, amenant la partie de chauffage et la cigarette à basse température à tourner l'une par rapport à l'autre, séparant ainsi la partie de chauffage des substances de tabac dans la cigarette à basse température.
 17. Dispositif à fumer selon la revendication 13, dans lequel l'au moins une partie de limitation est disposée sous une forme de bande, et l'au moins une partie de limitation s'étend de la partie supérieure de la partie de réception au fond de la partie de réception.

18. Dispositif à fumer selon la revendication 17, dans lequel plusieurs des parties de limitation sont disposées à intervalles.
19. Dispositif à fumer selon la revendication 1, dans lequel la partie de chauffage présente un angle de rotation de 0-360 degrés, ou supérieur à 360 degrés. 5
20. Dispositif à fumer selon la revendication 1, dans lequel la partie de chauffage présente une coupe transversale sous une forme circulaire, une forme ovale ou une forme polygonale. 10
21. Dispositif à fumer selon la revendication 1, dans lequel le panneau de commande est doté d'une interface de charge ; l'interface de charge est utilisée pour charger la partie de batterie. 15
22. Dispositif à fumer selon la revendication 1, dans lequel le boîtier est doté d'un bouton de commande sur la paroi latérale, et le panneau de commande est connecté à la partie de batterie par l'intermédiaire du bouton de commande. 20

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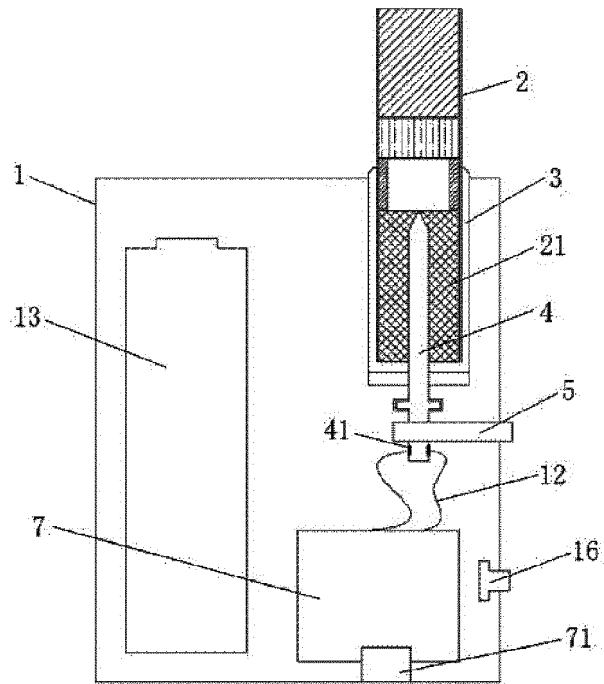


Fig. 1

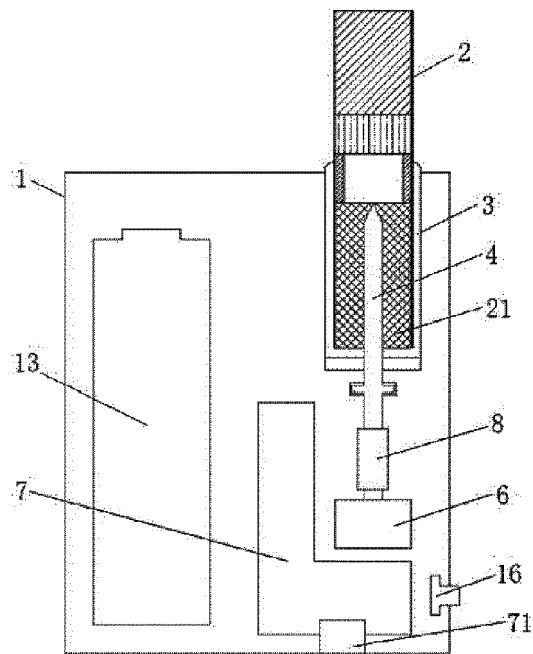


Fig. 2

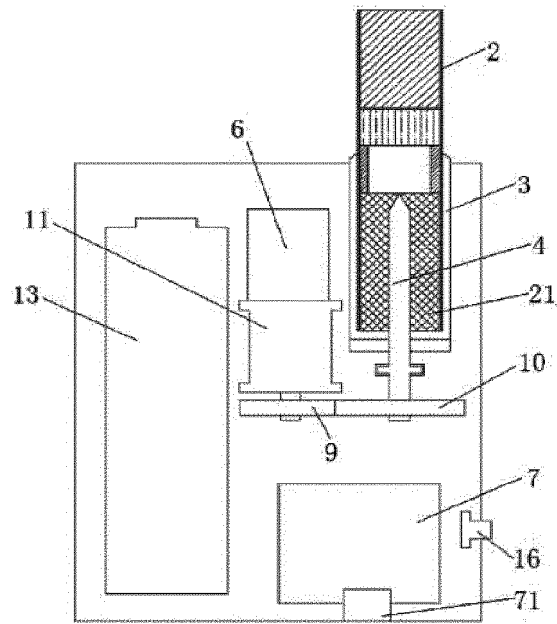


Fig. 3

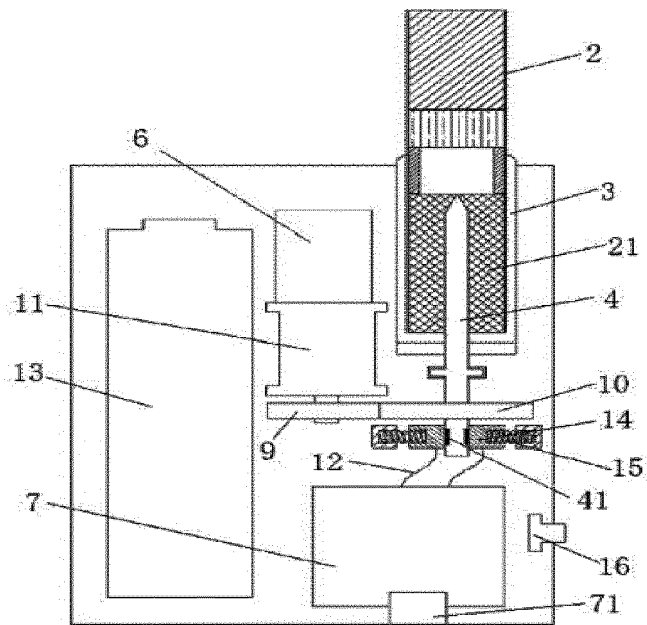


Fig. 4

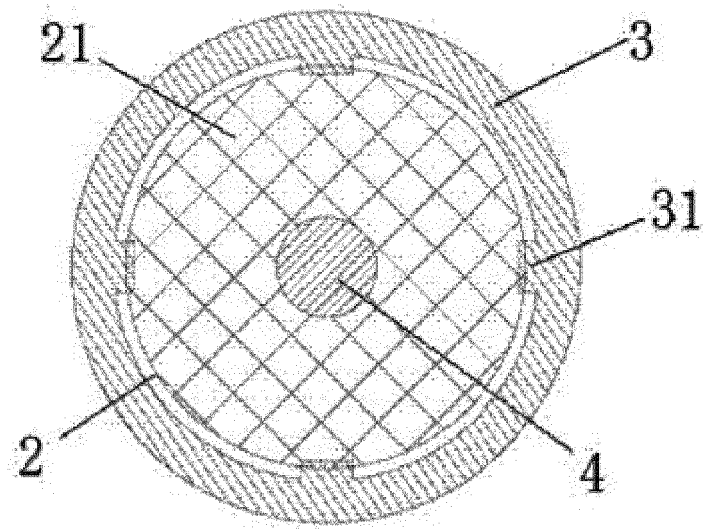


Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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