



(11)

EP 3 900 571 A1

(12)

EUROPEAN PATENT APPLICATION
published in accordance with Art. 153(4) EPC

(43) Date of publication:
27.10.2021 Bulletin 2021/43

(51) Int Cl.:
A45D 1/04 (2006.01)

(21) Application number: **19901046.3**

(86) International application number:
PCT/CN2019/000001

(22) Date of filing: **02.01.2019**

(87) International publication number:
WO 2020/124684 (25.06.2020 Gazette 2020/26)

(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
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

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(30) Priority: **19.12.2018 CN 201822141004 U**

(54) **MULTIFUNCTIONAL QUICK HAIR CURLING AND STRAIGHTENING DEVICE**

(57) A multifunctional quick hair curling and straightening device comprises a handle (1), an upper holding arm (2), and a lower holding arm (3). The handle (1) is provided with an air inlet end (11) and an air outlet end (12). The lower holding arm (3) is fixedly disposed at the air outlet end (12). A tail end of the upper holding arm (2) is hinged to a tail end of the lower holding arm (3). The upper holding arm (2) and the lower holding arm (3) are provided with a first heating plate (21) and a second heating plate (31), respectively. An air blowing mechanism (13) is disposed in the handle (1). An air blowing port of the air blowing mechanism (13) directly faces the tail ends of the upper holding arm (2) and the lower holding arm (3). Outer surfaces of the upper holding arm (2) and the lower holding arm (3) are each provided with a plurality of air grooves (5) in a circumferential direction. Air blown from the air blowing mechanism (13) sequentially flows through the air blowing port, the air outlet end (12) and the plurality of air grooves (5). The invention can achieve hair straightening and quick hair curling. The newly heated and softened hair during hair curling can be promptly set by means of rapid air cooling, thereby achieving the purpose of quick hair curling.

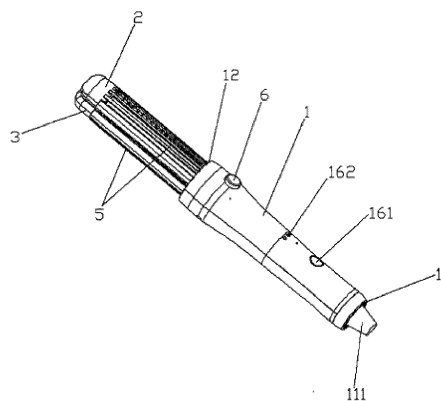


Fig. 1

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Description

TECHNICAL FIELD

[0001] The present utility model relates to the technical field of hairdressing tools, particularly to a multifunctional quick hair curling and straightening device.

BACKGROUND ART

[0002] A hair straightener, just as its name implies, is to straighten the hair. It heats and softens the hair through a heating element and then straightens the hair to achieve the purpose of straightening the hair. The current hair straightener can not only straighten, but also curl the hair, but in the curling process of the existing hair curler, it is necessary to first curl the hair on a round heating device, heat the hair, and wait for a certain period of time before removing the hair from the round heating device, which is time-consuming and labor-intensive, inefficient, and inconvenient for use.

SUMMARY OF THE UTILITY MODEL

[0003] In order to solve the foregoing technical problem, the present utility model provides a multifunctional quick hair curling and straightening device, which can achieve hair straightening and quick hair curling. The newly heated and softened hair during hair curling can be promptly set by means of rapid air cooling, thereby achieving the purpose of quick hair curling.

[0004] The present utility model provides the following technical solution: A multifunctional quick hair curling and straightening device, comprising a handle, and an upper holding arm and a lower holding arm that are independent of each other. The handle is provided with an air inlet end and an air outlet end, the lower holding arm is fixedly disposed at the air outlet end, a tail end of the upper holding arm is hinged to a tail end of the lower holding arm by means of a rotary shaft, the opposite sides of the upper holding arm and the lower holding arm are provided with a first heating plate and a second heating plate, respectively, an air blowing mechanism is disposed in the handle, an air blowing port of the air blowing mechanism directly faces the tail ends of the upper holding arm and the lower holding arm, outer surfaces of the upper holding arm and the lower holding arm are each provided with a plurality of air grooves in a circumferential direction, the plurality of the air grooves extend from the tail ends of the upper holding arm and the lower holding arm to front ends of the upper holding arm and the lower holding arm, and air blown from the air blowing mechanism sequentially flows through the air blowing port, and the air outlet end and the plurality of air grooves.

[0005] Further, the tail end of the lower holding arm is provided with a clamp-embedding portion, and a plug board is disposed on the clamp-embedding portion, and the inner wall of the handle is provided with a clamp-

embedding seat matched with the clamp-embedding portion and a socket matched with the plug board.

[0006] Further, a rotary shaft mounting groove is disposed on the clamp-embedding seat.

5 [0007] Further, the air blowing mechanism comprises a fan mounting body, a driving motor and fan blades, the driving motor is mounted on the fan mounting body, the output shaft of the driving motor passes through the fan mounting body and is connected to the fan blades, and the inner cavity of the fan mounting body is provided with an airflow separating ring.

10 [0008] Preferably, the air grooves are disposed in a convex shape, and two side walls of the air grooves extend outward to form shielding portions.

15 [0009] Preferably, the handle is provided with a filter shield at the air inlet end.

[0010] Further, a circuit board is mounted in the handle, and buttons and indicators exposed on the upper end of the handle are mounted on the circuit board.

20 [0011] Further, the multifunctional quick hair curling and straightening device further comprises a press-opening mechanism, the press-opening mechanism comprises a press and a reset spring, the tail end of the upper holding arm is provided with a first abutting plate, a first mounting bump is disposed on the first abutting plate, the tail end of the lower holding arm is provided with a second abutting plate, a second mounting bump is disposed on the second abutting plate, two ends of the reset spring are mounted on the first mounting bump and the second mounting bump, respectively, the press is movably disposed on the handle, and the bottom of the press abuts the first abutting plate.

25 [0012] The present utility model has the following beneficial effects: Compared with the prior art, outer surfaces of the upper holding arm and the lower holding arm in the present utility model are each provided with a plurality of air grooves in a circumferential direction, an air blowing port of the air blowing mechanism directly faces the tail ends of the upper holding arm and the lower holding arm, and air blown from the air blowing mechanism sequentially flows through the air blowing port, the air outlet end and the plurality of air grooves and can cause the hair, which is newly heated and softened between the first heating plate and the second heating plate and is wound about the outer surfaces of the upper holding arm and the lower holding arm, to be promptly set by means of rapid air cooling, thereby achieving the purpose of quick hair curling.

50 BRIEF DESCRIPTION OF THE DRAWINGS

[0013]

Fig. 1 is a space diagram of the multifunctional quick hair curling and straightening device described in the present utility model;

Fig. 2 is a first exploded schematic view of the mul-

tifunctional quick hair curling and straightening device described in the present utility model;

Fig. 3 is a second exploded schematic view of the multifunctional quick hair curling and straightening device described in the present utility model;

Fig. 4 is a sectional view of the multifunctional quick hair curling and straightening device described in the present utility model;

Fig. 5 is a structural enlarged view of area A described in the present utility model;

Fig. 6 is a structural schematic view of the air blowing mechanism described in the present utility model;

Fig. 7 is a structural schematic view of the air grooves described in the present utility model.

Reference Signs List:

[0014]

Handle 1, air inlet end 11, filter shield 111, air outlet end 12, air blowing mechanism 13, fan mounting body 131, airflow separating ring 1311, driving motor 132, fan blade 133, clamp-embedding seat 14, rotary shaft mounting groove 141, socket 15, circuit board 16, button 161, indicator 162;

Upper holding arm 2, first heating plate 21, first abutting plate 22, first mounting bump 221;

Lower holding arm 3, second heating plate 31, clamp-embedding portion 32, plug board 321, second abutting plate 33, second mounting bump 331;

Rotary shaft 4;

Air groove 5, shielding portion 51;

Press-opening mechanism 6, press 61, reset spring 62.

DETAILED DESCRIPTION

[0015] In order to make the purpose, technical solutions and technical effects of the present utility model more evident, the present utility model will be further illustrated in conjunction with specific embodiments. It should be understood that the specific embodiments described herein are intended to explain the present utility model and not to limit the present utility model.

[0016] Refer to Fig. 1 to Fig. 4, which show a multifunctional quick hair curling and straightening device, comprising a handle 1, and an upper holding arm 2 and a lower holding arm 3 that are independent of each other,

the handle 1 is provided with an air inlet end 11 and an air outlet end 12, the lower holding arm 3 is fixedly disposed at the air outlet end 12, a tail end of the upper holding arm 2 is hinged to a tail end of the lower holding arm 3 by means of a rotary shaft 4, the opposite sides of the upper holding arm 2 and the lower holding arm 3 are provided with a first heating plate 21 and a second heating plate 31, respectively, an air blowing mechanism 13 is disposed in the handle 1, an air blowing port of the air blowing mechanism 13 directly faces the tail ends of the upper holding arm 2 and the lower holding arm 3, outer surfaces of the upper holding arm 2 and the lower holding arm 3 are each provided with a plurality of air grooves 5 in a circumferential direction, the plurality of the air grooves 5 extend from the tail ends of the upper holding arm 2 and the lower holding arm 3 to front ends of the upper holding arm 2 and the lower holding arm 3, and air blown from the air blowing mechanism 13 sequentially flows through the air blowing port, the air outlet end 12 and the plurality of air grooves 5. Outer surfaces of the upper holding arm 2 and the lower holding arm 3 in the present utility model are each provided with a plurality of air grooves 5 in a circumferential direction, and an air blowing port of the air blowing mechanism 13 directly faces the tail ends of the upper holding arm 2 and the lower holding arm 3. During curling, air blown from the air blowing mechanism 13 sequentially flows through the air blowing port, and the air outlet end 12 and the plurality of air grooves 5, and can cause the hair, which is newly heated and softened between the first heating plate 21 and the second heating plate 31 and is wound about the outer surfaces of the upper holding arm 2 and the lower holding arm 3, to be promptly set by means of rapid air cooling, thereby achieving the purpose of quick hair curling.

[0017] As shown in Fig. 2 and Fig. 3, the tail end of the lower holding arm 3 is provided with a clamp-embedding portion 32, and a plug board 321 is disposed on the clamp-embedding portion 32, and the inner wall of the handle 1 is provided with a clamp-embedding seat 14 matched with the clamp-embedding portion 32 and a socket 15 matched with the plug board 321.

[0018] Further, a rotary shaft mounting groove 141 is disposed on the clamp-embedding seat 14.

[0019] The assembly process of the handle 1, the upper holding arm 2 and the lower holding arm 3 is as follows: A tail end of the upper holding arm 2 is hinged to a tail end of the lower holding arm 3 by means of the rotary shaft 4, and the upper holding arm 2 and the lower holding arm 3 that are combined into one body are mounted in the handle 1, specifically the clamp-embedding portion 32 is placed in the clamp-embedding seat 14, the plug board 321 is inserted into the socket 15, meanwhile the rotary shaft 4 is placed in the rotary shaft mounting groove 141, and the handle 1 is covered to complete assembly.

[0020] As shown in 6, the air blowing mechanism 13 comprises a fan mounting body 131, a driving motor 132

and fan blades 133, the driving motor 132 is mounted on the fan mounting body 131, the output shaft of the driving motor 132 passes through the fan mounting body 131 and is connected to the fan blades 133, and the inner cavity of the fan mounting body 131 is provided with an airflow separating ring 1311.

[0021] As shown in Fig. 7, the air grooves 5 are disposed in a convex shape, and two side walls of the air grooves 5 extend outward to form shielding portions 51, air blown from the air blowing mechanism 13 eventually flows into the plurality of air grooves 5, the shielding portions 51 retains the air in the air grooves 5 in a manner of the maximized air flow and the air flows out only via small notches at the upper ends of the air grooves 5, thereby avoiding loss of the air flow caused by large notches at the upper ends of the air grooves 5 and further improving the efficiency of setting by means of cooling.

[0022] Preferably, the handle 1 is provided with a filter shield 111 at the air inlet end 11. As the orifices of the filter shield 111 are small, things similar to fingers cannot enter the orifices and intrusion of foreign matter, which may cause an accident, can be prevented effectively; meanwhile it also prevents human injury by parts flying out in case of an internal failure.

[0023] Further, a circuit board 16 is mounted in the handle 1, and buttons 161 and indicators 162 exposed on the upper end of the handle 1 are mounted on the circuit board 16.

[0024] As shown in Fig. 4 and Fig. 5, the multifunctional quick hair curling and straightening device further comprises a press-opening mechanism 6, the press-opening mechanism 6 comprises a press 61 and a reset spring 62, the tail end of the upper holding arm 2 is provided with a first abutting plate 22, a first mounting bump 221 is disposed on the first abutting plate 22, the tail end of the lower holding arm 3 is provided with a second abutting plate 33, a second mounting bump 331 is disposed on the second abutting plate 33, two ends of the reset spring 62 are mounted on the first mounting bump 221 and the second mounting bump 331, respectively, the press 61 is movably disposed on the handle 1, and the bottom of the press 61 abuts the first abutting plate 22. The principle for the use of the press-opening mechanism 6 is described below: When an open state is switched to, the press 61 is pressed down, the bottom of the press 61 pushes the first abutting plate 22 towards the second abutting plate 33, the reset spring 62 is compressed, the upper holding arm 2 rotates circumferentially about the rotary shaft 4, thereby entering an open state; when a closed state is switched to, the press 61 is released, the reset spring 62 releases elastic potential energy and pushes the first abutting plate 22 away from the second abutting plate 33, and the upper holding arm 2 rotates circumferentially about the rotary shaft 4, thereby entering a closed state.

[0025] The working principle of the present utility model is as follows:

For hair to be straightened, the press 61 is pressed to

switch the upper holding arm 2 and the lower holding arm 3 to an open state to clamp the hair to be straightened to between the upper holding arm 2 and the lower holding arm 3, the press 61 is released to switch the upper holding arm 2 and the lower holding arm 3 to a closed state, thereby tightly clamping the hair to be straightened to between the first heating plate 21 and the second heating plate 31, and the user pulls the multifunctional quick hair curling and straightening device in a reverse direction of hair roots, thereby heating and straightening the hair between the first heating plate 21 and the second heating plate 31.

[0026] For hair to be curled, the press 61 is pressed to switch the upper holding arm 2 and the lower holding arm 3 to an open state, to clamp the hair to be curled to between the upper holding arm 2 and the lower holding arm 3, the press 61 is released to switch the upper holding arm 2 and the lower holding arm 3 to a closed state, thereby tightly clamping the hair to be curled to between the first heating plate 21 and the second heating plate 31, meanwhile the multifunctional quick hair curling and straightening device is rotated, so that the hair is wound about the outer surfaces of the upper holding arm 2 and the lower holding arm 3, air blown from the air blowing mechanism 13 sequentially flows through the air blowing port, the air outlet end 12 and the plurality of air grooves 5 and eventually acts on the hair and the user pulls the multifunctional quick hair curling and straightening device in a reverse direction of hair roots, thereby promptly setting by means of rapid air cooling the hair newly heated and softened between the first heating plate 21 and the second heating plate 31, and achieving the purpose of quick hair curling.

[0027] The above content is a further detailed description of the present utility model in conjunction with specific preferred embodiments, and the specific implementation of the present utility model is not limited to the description. For those of ordinary skill in the art to which the present utility model pertains, without departing from the concept of the present utility model, the architecture of the present utility model can be flexible and changeable, and series products can be derived. All the simple deductions or substitutions should be considered belonging to the scope of patent protection determined by the submitted claims of the present utility model.

Claims

1. A multifunctional quick hair curling and straightening device, comprising a handle, and an upper holding arm and a lower holding arm that are independent of each other, the handle being provided with an air inlet end and an air outlet end, the lower holding arm being fixedly disposed at the air outlet end, a tail end of the upper holding arm being hinged to a tail end of the lower holding arm by means of a rotary shaft, and the opposite sides of the upper holding arm and

the lower holding arm being provided with a first heating plate and a second heating plate, respectively, wherein an air blowing mechanism is disposed in the handle, an air blowing port of the air blowing mechanism directly faces the tail ends of the upper holding arm and the lower holding arm, outer surfaces of the upper holding arm and the lower holding arm are each provided with a plurality of air grooves in a circumferential direction, the plurality of the air grooves extend from the tail ends of the upper holding arm and the lower holding arm to front ends of the upper holding arm and the lower holding arm, and air blown from the air blowing mechanism sequentially flows through the air blowing port, the air outlet end and the plurality of air grooves.

2. The multifunctional quick hair curling and straightening device according to claim 1, wherein the tail end of the lower holding arm is provided with a clamp-embedding portion, and a plug board is disposed on the clamp-embedding portion, and the inner wall of the handle is provided with a clamp-embedding seat matched with the clamp-embedding portion and a socket matched with the plug board.
3. The multifunctional quick hair curling and straightening device according to claim 2, wherein a rotary shaft mounting groove is disposed on the clamp-embedding seat.
4. The multifunctional quick hair curling and straightening device according to claim 1, wherein the air blowing mechanism comprises a fan mounting body, a driving motor and fan blades, the driving motor is mounted on the fan mounting body, the output shaft of the driving motor passes through the fan mounting body and is connected to the fan blades, and the inner cavity of the fan mounting body is provided with an airflow separating ring.
5. The multifunctional quick hair curling and straightening device according to claim 1, wherein the air grooves are disposed in a convex shape, and two side walls of the air grooves extend outward to form shielding portions.
6. The multifunctional quick hair curling and straightening device according to claim 1, wherein the handle is provided with a filter shield at the air inlet end.
7. The multifunctional quick hair curling and straightening device according to claim 1, wherein a circuit board is mounted in the handle, and buttons and indicators exposed on the upper end of the handle are mounted on the circuit board.
8. The multifunctional quick hair curling and straightening device according to claim 1, wherein the mul-

tifunctional quick hair curling and straightening device further comprises a press-opening mechanism, the press-opening mechanism comprises a press and a reset spring, the tail end of the upper holding arm is provided with a first abutting plate, a first mounting bump is disposed on the first abutting plate, the tail end of the lower holding arm is provided with a second abutting plate, a second mounting bump is disposed on the second abutting plate, two ends of the reset spring are mounted on the first mounting bump and the second mounting bump, respectively, the press is movably disposed on the handle, and the bottom of the press abuts the first abutting plate.

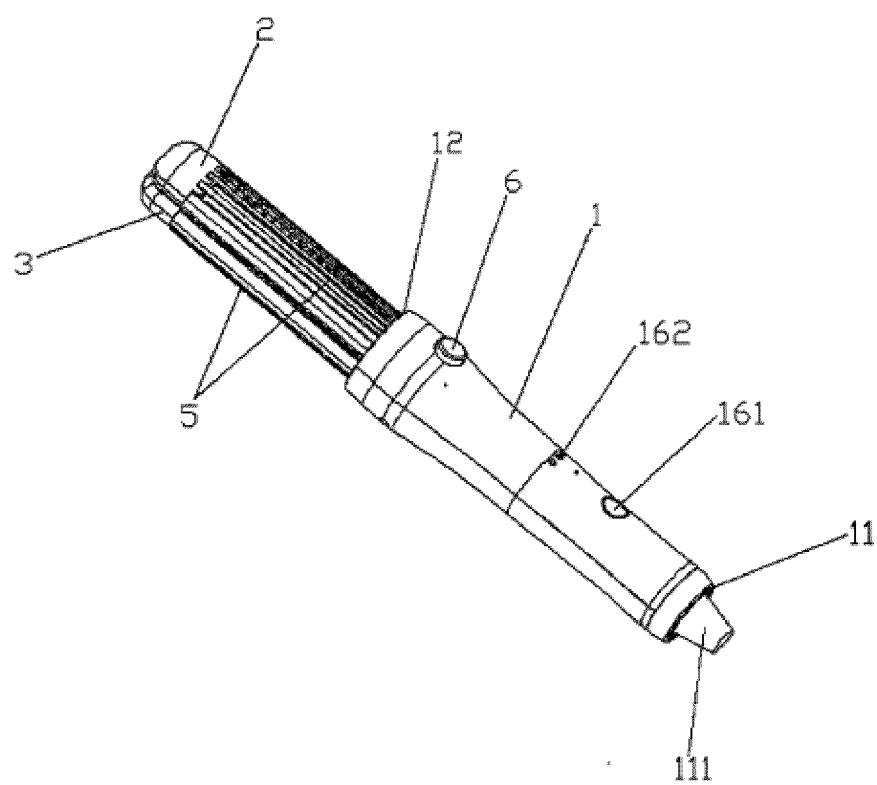


Fig. 1

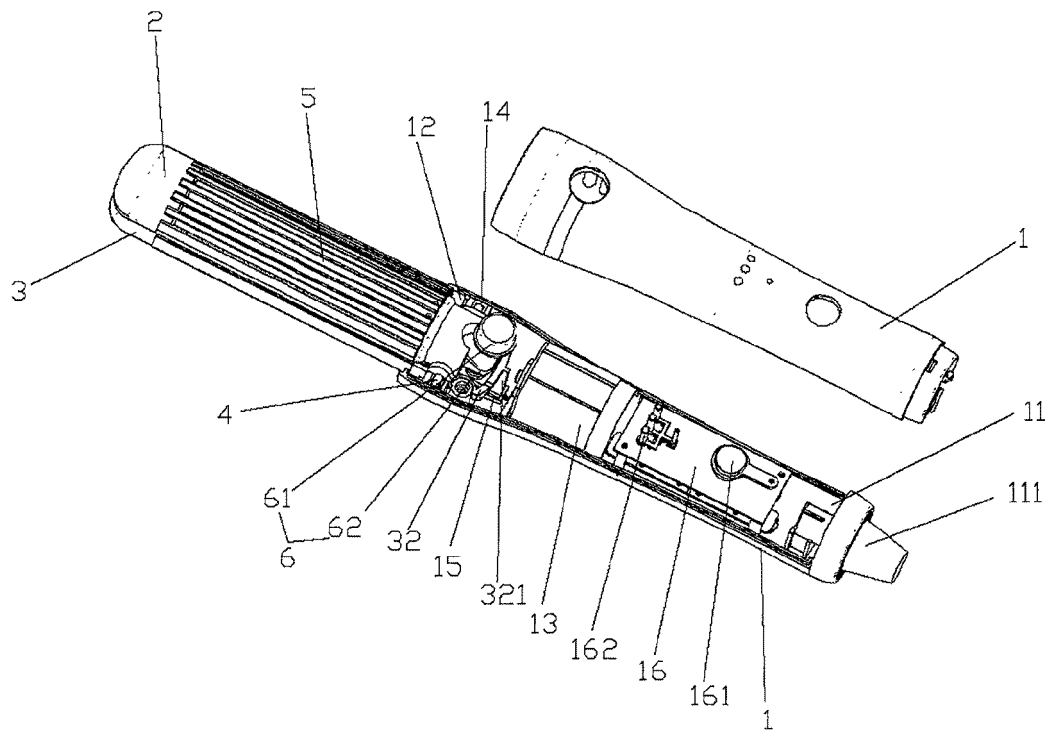


Fig. 2

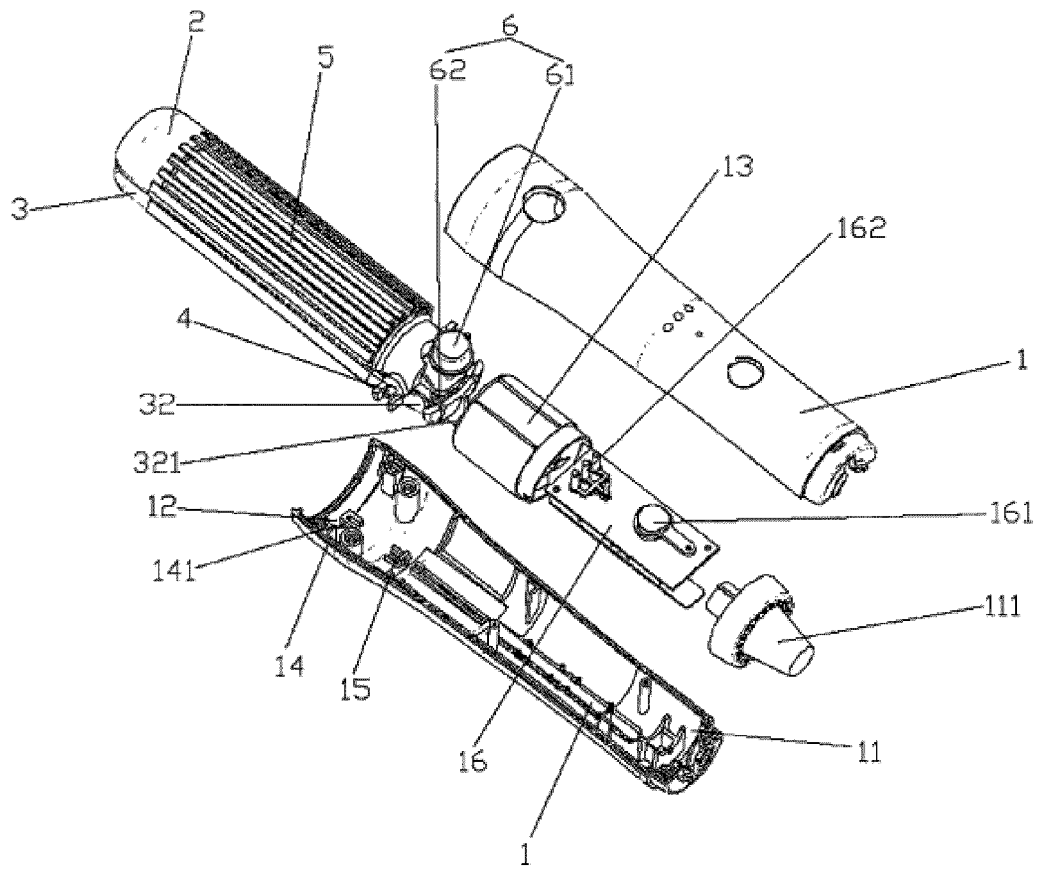


Fig. 3

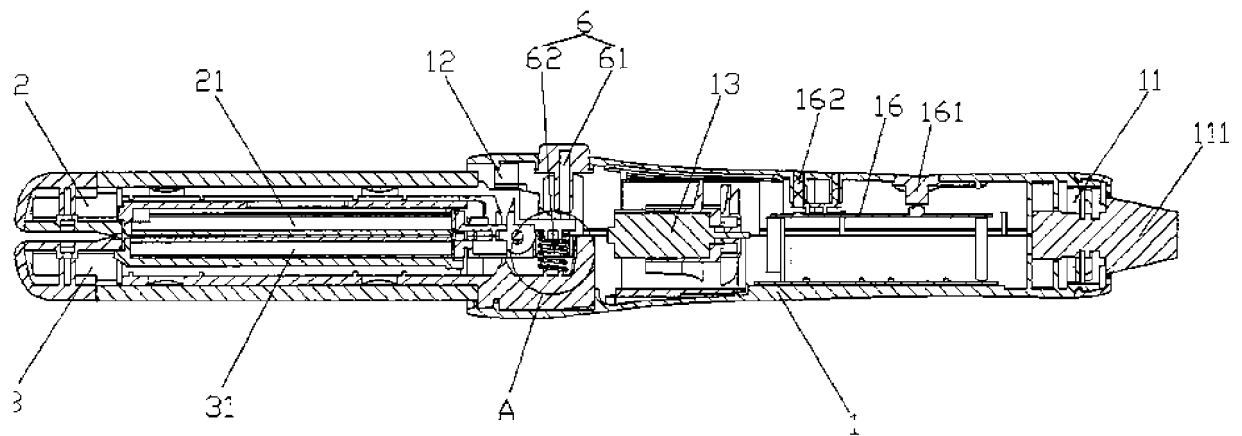


Fig. 4

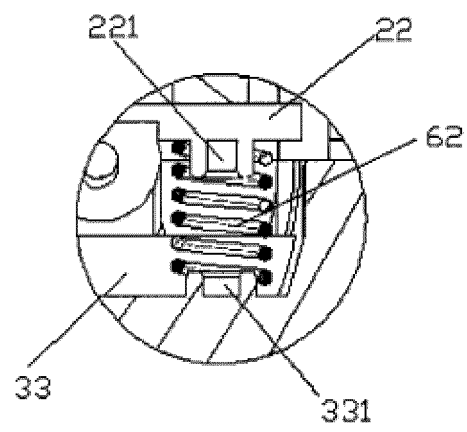


Fig. 5

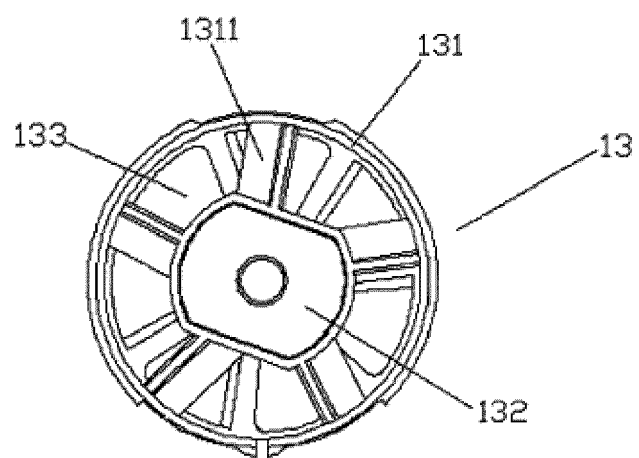


Fig. 6

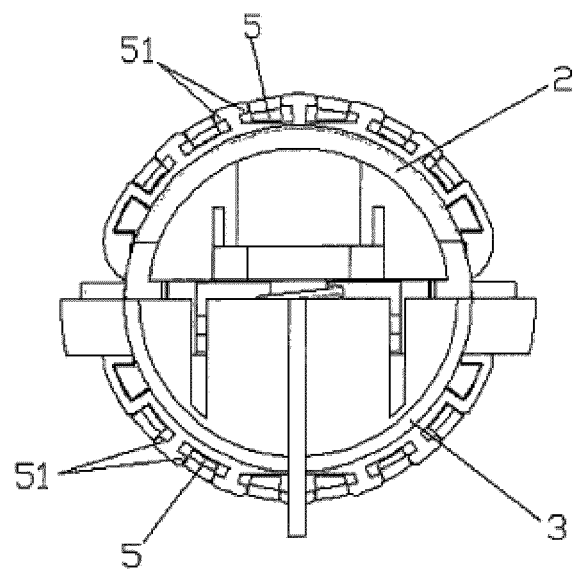


Fig. 7

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2019/000001

5	A. CLASSIFICATION OF SUBJECT MATTER		
	A45D 1/04(2006.01)i		
	According to International Patent Classification (IPC) or to both national classification and IPC		
10	B. FIELDS SEARCHED		
	Minimum documentation searched (classification system followed by classification symbols)		
	A45D		
	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
15	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
	CNPAT, CNKI, WPI, EPODOC: A45D1/+, 加热, 冷却 or 冷风, 定型, 出风 or 吹风 or 排风 or 送风, 风口 or 风孔 or 风槽, 快速 or 急速 or 加速, 进风 or 入风, 槽 or 道 or 间隙 or 缝 or 栅, blow+ or wind or breeze+ or fan? or air, cool+ or cold+, in +, out+, channel? or slot? or gap? or raster? or grid?, heat+		
20	C. DOCUMENTS CONSIDERED TO BE RELEVANT		
	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	X	CN 108634527 A (DONGGUAN BIDISCO ELECTRIC CO., LTD.) 12 October 2018 (2018-10-12) description, paragraphs [0026]-[0043], and figures 1-8	1-8
25	A	CN 103402391 A (PANASONIC CORPORATION) 20 November 2013 (2013-11-20) entire document	1-8
	A	CN 107647573 A (DONGGUAN GANGDIAN ELECTRIC APPLIANCE PRODUCT CO., LTD.) 02 February 2018 (2018-02-02) entire document	1-8
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35	A	US 4602143 A (CLAIROL INC.) 22 July 1986 (1986-07-22) entire document	1-8
40	☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
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50	Date of the actual completion of the international search		Date of mailing of the international search report
	26 August 2019		19 September 2019
55	Name and mailing address of the ISA/CN		Authorized officer
	China National Intellectual Property Administration (ISA/CN) No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088 China		
	Facsimile No. (86-10)62019451		Telephone No.

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2019/000001

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CN 201418460 Y	10 March 2010	None	
CN 202950169 U	29 May 2013	None	
KR 20180001377 A	04 January 2018	None	
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