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(72) Inventors:
• **KEONG, Wai Ho Michael Kwai Chung**
N.T.
Hong Kong (CN)
• **LAM, Wai Ming Kwai Chung**
N.T.
Hong Kong (CN)

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(74) Representative: **Walker, Ross Thomson**
Forresters IP LLP
Skygarden
Erika-Mann-Strasse 11
80636 München (DE)

(71) Applicant: **Kenford Industrial Company Ltd**
New Territories, Hong Kong (CN)

(54) **HAIR CURLER**

(57) A hair curler comprises a first arm (11), a second arm (21), and a rotation structure (03) rotatably connected to the first arm (11) and the second arm (21). The first arm (11) comprises a heating member (04) for heating hair. The second arm (21) comprises a handle portion (06). The rotation structure (03) has one end embedded in the first arm (11) and the other end embedded in the second arm (21). The first arm (11) and the second arm

(21) rotate relative to each other with respect to a rotation axis (33) of the rotation structure (03) to change a relative angle, and are fixed at a first operation position (P1) and a second operation position (P2). The hair curler is ergonomic because a user can adjust a relative angle between the heating member (04) and the handle portion (06) when curling different strands of hair.

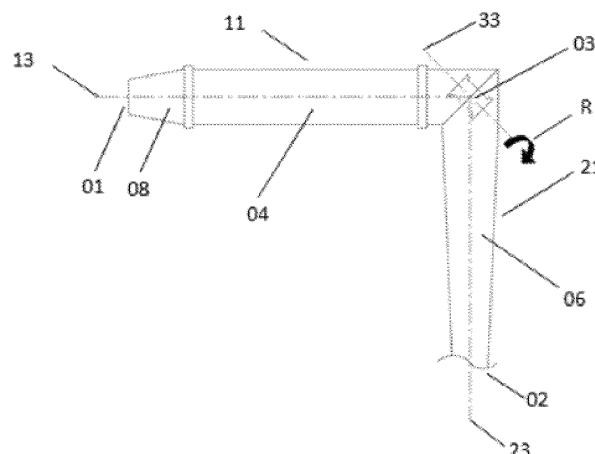


Figure 1

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Description

TECHNICAL FIELD

[0001] The present application relates to a household hand-held electronic product, in particular to a hair curler which can change the use form.

BACKGROUND OF THE INVENTION

[0002] A hair curler is a common hand-held electronic product for hairdressing. It is equipped with a hot perm device with a single bar heating part. When users use it, they wrap their hair around the heating part to heat it, so that the hair can be deformed and shaped according to the shape of the heating part. When winding hair, because the heating part and handle part are horizontal, the forearm and the main arm should keep about horizontal state during the whole process, leading to fatigue. If the shape is changed so that the handle and heating rod are perpendicular to the right angle, the forearm and the main arm can be relaxed, but the user himself can not handle the hair behind the head.

TECHNICAL PROBLEM

[0003] The technical problem to be solved by the present application is to provide a hair curler to solve the problem that the existing curler has a fixed shape and can not change the use form.

TECHNICAL SOLUTION

[0004] The technical scheme adopted by the present application to solve its technical problems is as follows: providing a hair curler comprising a first arm, a second arm, and a rotation structure rotatably connected to the first arm and the second arm; the first arm comprises a heating member for heating hair; the second arm comprises a handle portion; one end of the rotation structure is embedded in the first arm, and the other end is embedded in the second arm; the first arm and the second arm rotate relative to each other with respect to a rotation axis of the rotation structure to change a relative angle, and are fixed at a first operation position and a second operation position.

[0005] The hair curler provided by the present application further comprises a first end and a second end, the first arm is between the first end and the rotation structure, and the second arm is between the second end and the rotation structure.

[0006] In the hair curler provided by the present application, the first operation position is a position where the first arm is parallel to or almost parallel to the second arm, and the first end, the second end and the rotation structure are on the same axis; the second operation position is a position where the first arm is vertical to or almost vertical to the second arm.

[0007] In the hair curler provided by the present application, a line connecting the first end and the rotation structure forms a first axis; a line connecting the second end and the rotation structure forms a second axis; a first interior angle is formed between the rotation axis and the first axis; a second interior angle is formed between the rotation axis and the second axis; when the first arm and the second arm rotate relative to each other with respect to the rotation axis to change a relative angle, the first interior angle and the second interior angle remain unchanged.

[0008] In the hair curler provided by the present application, a line connecting the first end and the rotation structure forms a first axis; a line connecting the second end and the rotation structure forms a second axis; the rotation axis is vertical to the first axis and the second axis.

[0009] In the hair curler provided by the present application, the second end further comprises a second rotation structure, and the second arm is rotatably connected to a power cord member through the second rotation structure.

[0010] In the hair curler provided by the present application, the heating member is a heating square cylinder, comprising at least one pair of hair-heating surfaces and one pair of hair-heating round corners.

[0011] In the hair curler provided by the present application, a second handle portion is arranged on the first end and the second handle portion is connected with the heating member.

[0012] In the hair curler provided by the present application, the first arm further comprises a temperature sensing member; the second arm further comprises a temperature control system, and the heating member or/and the temperature sensing member is electrically connected with the temperature control system.

[0013] In the hair curler provided by the present application, the heating member is detachably connected with the first arm.

[0014] The present application further provides a hair curler comprising a first arm, a second arm, a detachable structure connected with the first arm and the second arm; the first arm comprises a heating member for heating hair; the second arm comprises a handle portion; one end of the detachable structure is fixedly connected with the first arm, and the other end of the detachable structure is detachably connected with the second arm and embedded into the second arm so that the first arm and the second arm can be disassembled from each other and fixed at the first operation position and second operation position after rotating relative to each other with respect to the detachable structure to change a relative angle; an end of the first arm close to the second arm is provided with a first conductive point and a second conductive point connecting with the heating member; the second arm is provided with a third conductive point and a fourth conductive point corresponding to positions of the first conductive point and the second conductive point re-

spectively; the third conductive point and the fourth conductive point are further connected with the power cord member; when the first arm and the second arm are fixed at the first operation position, the first conductive point is connected with the third conductive point and the second conductive point is connected with the fourth conductive point, making the heating member energetically heated; when the first arm and the second arm are fixed at the second operation position, the first conductive point is connected with the fourth conductive point and the second conductive point is connected with the third conductive point, also making the heating member energetically heated.

[0015] In the hair curler provided by the present application, the first operation position is a position where the first arm is parallel to the second arm, the second operation position is a position where the first arm is vertical to the second arm.

[0016] In the hair curler provided by the present application, the second arm comprises an elastic structure, the third conductive point, the fourth conductive point and the elastic structure are arranged inside the second arm; the first conductive point and the second conductive point are arranged on one end of the detachable structure located inside the second arm; one end of the elastic structure is fixed inside the second arm, and the other end of the elastic structure is fixedly connected with the third conductive point and the fourth conductive point, so that the third conductive point and the fourth conductive point can be moved relative to the second arm and when the first arm and the second arm are fixed at the first operation position or the second operation position, the elastic structure presses the third conductive point and the fourth conductive point to the first conductive point and the second conductive point.

THE BENEFICIAL EFFECT OF THE INVENTION

[0017] Implementing embodiments of the present application has the following beneficial effects: the hair curler is ergonomic because a user can adjust a relative angle between the heating member and the handle portion when curling different strands of hair.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The present application will be further described below in conjunction with the accompanying drawings and embodiments, in which:

Fig. 1 is a schematic diagram of the hair curler of a first preferred embodiment of the present application;

Fig. 2 is a schematic diagram of conversion between the first operation position and the second operation position of the hair curler of a first preferred embodiment of the present application;

Fig. 3A is a schematic diagram of the hair curler at

the first operation position, Fig. 3B is a schematic diagram of the hair curler at the second operation position;

Fig. 4A shows the structure of the hair curler at one angle at the first working position; Fig. 4B shows the structure of the hair curler at another angle at the first working position; Fig. 4C shows the structure of the hair curler at one angle at the second working position;

Fig. 5 is a schematic diagram of the hair curler of a fourth preferred embodiment of the present application;

Fig. 6A is a schematic diagram of the hair curler at the first operation position; Fig. 6B is the sectional structure diagram of A-A in Fig. 6A;

Fig. 7 is a schematic diagram of the hair curler of a sixth preferred embodiment of the present application;

Fig. 8 is a schematic diagram of the hair curler of a seventh preferred embodiment of the present application;

Fig. 9 is a schematic diagram of the hair curler of an eighth preferred embodiment of the present application;

Fig. 10 is a schematic diagram of the hair curler of another preferred embodiment of the present application;

Fig. 11 is a schematic diagram of the conductive points of the hair curler in the first operation position of another preferred embodiment of the present application;

Fig. 12 is a schematic diagram of the conductive points of the hair curler in the second operation position of another preferred embodiment of the present application.

Fig. 13 is a schematic diagram of the structure of the hair curler when using different first arms of an eighth preferred embodiment of the present application.

EMBODIMENT OF THE INVENTION

[0019] In order to more clearly understand the technical features, objects and effects of the present application, the specific embodiments of the present application will be described in detail with reference to the accompanying drawings.

[0020] Fig. 1 is a schematic diagram of the hair curler of a first preferred embodiment of the present application. As shown in Fig. 1, the main body of the hair curler comprises a first end 01, a second end 02, a rotation structure 03, and the rotation structure 03 is between the first end 01 and the second end 02; the first arm 11 is between the first end 01 and the rotation structure 03, and the second arm 21 is between the second end 02 and the rotation structure 03; the first arm 11 and the second arm 21 are rotatably connected through the rotation structure 03. The direction of the axis of the rotation structure 03 is the rotation axis 33 or 43.

[0021] The first arm 11 comprises a heating member 04 for heating hair; the second arm 21 comprises a handle portion 06; one end of the rotation structure 03 is embedded in the first arm 11, and the other end is embedded in the second arm 21; the first arm 11 and the second arm 21 rotate relative to each other with respect to a rotation axis 33 of the rotation structure 03 to change a relative angle R, and are fixed at a first operation position P1 and a second operation position P2.

[0022] Fig. 2 is a schematic diagram of conversion between the first operation position and the second operation position of the hair curler of a first preferred embodiment of the present application. As shown in Fig. 2, the first arm 11 and the second arm 21 rotate R relative to each other and change between the first operation position P1 and the second operation position P2.

[0023] The first operation position P1 is a position where the first arm 11 is parallel or approximately parallel to the second arm 21, the first end 01, the second end 02 and the rotation structure 03 are on the same axis; the second operation position P2 is a position where the first arm 11 is vertical or approximately vertical to the second arm 21.

[0024] When the first arm 11 and the second arm 21 rotate relative to each other to change a relative angle R and are fixed at the first operation position P1, the first arm 11 is parallel or approximately parallel to the second arm 21, the first end 01, the second end 02 and the rotation structure 03 are on the same axis, forming a single columnar body; when the first arm 11 and the second arm 21 rotate relative to each other and are fixed at the second operation position P2, the first arm 11 is vertical or approximately vertical to the second arm 21, forming a double-columnar body. Conversion between the first operation position P1 and the second operation position P2, makes the hair curler ergonomic because a user can adjust a relative angle between the heating member 04 and the handle portion 06 when curling different strands of hair.

[0025] Fig. 3A is a schematic diagram of the hair curler at the first operation position, Fig. 3B is a schematic diagram of the hair curler at the second operation position. As shown in Fig. 3A and 3B, a line connecting the first end 01 and the rotation structure 03 forms a first axis 13; the second arm 21 rotates with the first axis 13 as the axis center relative to the first arm 11 and changes the relative angle; a line connecting the second end 02 and the rotation structure 03 forms a second axis 23; the first arm 11 rotates with the second axis 23 as its axis center relative to the second arm 21 and changes the relative angle.

[0026] A first interior angle 34 is formed between the rotation axis 33 and the first axis 13; a second interior angle 35 is formed between the rotation axis 33 and the second axis 23; when the first arm 11 and the second arm 21 rotate relative to each other with respect to the rotation axis 33 to change a relative angle R, the first interior angle 34 and the second interior angle 35 remain

unchanged. At the first operation position P1, the first arm 11 is parallel or approximately parallel to the second arm 21; at the second operation position P2, the first arm 11 is vertical or approximately vertical to the second arm 21, the first interior angle 34 and the second interior angle 35 are equal to or close to 45 degrees.

[0027] Fig. 4A shows the structure of the hair curler at one angle at the first working position; Fig. 4B shows the structure of the hair curler at another angle at the first working position; Fig. 4C shows the structure of the hair curler at one angle at the second working position. As shown in Fig. 4A, 4B and 4C, a line connecting the first end 01 and the rotation structure 03 forms a first axis 13, a line connecting the second end 02 and the rotation structure 03 forms a second axis 23; the rotation axis 33 is vertical to the first axis 13 and the second axis 23. The first arm 11 and the second arm 21 rotate R relative to the rotation axis 33 and change the relative angle; whether in the first operation position P1, the second operation position P2 or in the relative rotation R process, the rotation axis 33 is vertical to the first axis 13 and the second axis 23 all the time.

[0028] Fig. 5 is a schematic diagram of the hair curler of a fourth preferred embodiment of the present application. As shown in Fig 5, the second end 02 further comprises a second rotation structure 24, the second rotation structure 24 is arranged at the second end 02; the second arm 21 is rotatably connected to a power cord member 25 through the second rotation structure 24. The rotating axis of the second rotation structure 24 coincides with the second axis 23, and the power cord member 25 rotates R2 with the second axis 23 as the axis relative to the second arm 21.

[0029] Fig. 6A is a schematic diagram of the hair curler at the first operation position; Fig. 6B is the sectional structure diagram of A-A in Fig. 6A. As shown in Fig. 6A and 6B, the heating member 04 is a heating square cylinder 41, comprising at least one pair of hair-heating surfaces 42 and one pair of hair-heating round corners 43. The heating member 04 of the present embodiment is only an illustration. In order to deform and shape the hair according to the shape of the heating member, the heating member 04 can be changed as needed.

[0030] Fig. 7 is a schematic diagram of the hair curler of a sixth preferred embodiment of the present application. As shown in Fig.7, first arm 11 further comprises a temperature sensing member 44; the second arm 21 further comprises a temperature control system 45; the heating member 04 or/and the temperature sensing member 44 is electrically connected with the temperature control system 45. If the heating member 04 or/and the temperature sensing member 44 is electrically connected with the temperature control system 45 through a wire, the connecting wires need to pass through the rotation structure 03, the heating member 04 or/and the temperature sensing member 44 rotates R relative to the temperature control system 45 and changes the relative angle.

[0031] Fig. 8 is a schematic diagram of the hair curler

of a seventh preferred embodiment of the present application. As shown in Fig. 8, the heating member 04 is detachably connected with the first arm 11. That is to say, in the present embodiment, a divisible heating member 07 can be used, and the hair can be deformed and shaped to the desired shape by changing the divisible heating member 07 of different shapes.

[0032] Preferably, in the embodiment of the present application, the first end 01 is provided with a second handle portion 08. The second handle portion 08 is made of insulating material or coated with insulating material, which is connected with the heating member 04 to help control or rotate the first arm 11, so as to facilitate the change of the use form under different conditions.

[0033] The present application is about a hair curler. Unlike known hair curlers, the present application comprises a rotation structure 03, which connects the heating member 04 with the handle portion 16, and the hand-grip/use method of the hair curler can be changed according to different conditions.

[0034] Fig. 9 is a schematic diagram of the hair curler of an eighth preferred embodiment of the present application. As shown in Fig. 9, the present embodiment provides a hair curler, comprising a first arm 11, a second arm 21, a detachable structure 05 connected with the first arm 11 and the second arm 21; the first arm 11 comprises a heating member 04 for heating hair; the second arm 21 comprises a handle portion 06; one end of the detachable structure 05 is fixedly connected with the first arm 11, and the other end of the detachable structure 05 is detachably connected with the second arm 21 and embedded into the second arm 21 so that the first arm 11 and the second arm 21 can be disassembled from each other and fixed at the first operation position P1 and second operation position P2 after rotating relative to each other with respect to the detachable structure 05 to change a relative angle. The first operation position P1 is a position where the first arm 11 is parallel or approximately parallel to the second arm 21, the second operation position P2 is a position where the first arm 11 is vertical or approximately vertical to the second arm 21. The end planes of the first arm 11 and the second arm 21 are both inclined planes with 45 degrees angle, so that they can still fit and connect with each other after switching the angle between the two arms by rotation. In the present embodiment, an end of the first arm 11 close to the second arm 21 is provided with a first conductive point A and a second conductive point B (not shown) connecting with the heating member 04; the end of the second arm 21 close to the first arm 11 is provided with a third conductive point C and a fourth conductive point D (not shown) corresponding to positions of the first conductive point A and the second conductive point B respectively; the third conductive point C and the fourth conductive point D are further connected with the power cord member. When the first arm 11 and the second arm 21 are fixed at the first operation position P1, the first conductive point A is connected with the third conductive

point C and the second conductive point B is connected with the fourth conductive point D, making the heating member 04 energetically heated; when the first arm 11 and the second arm 21 are fixed at the second operation position P2, the first conductive point A is connected with the fourth conductive point D and the second conductive point B is connected with the third conductive point C; because the heating member 04 is a resistive heating material, it does not distinguish between positive and negative poles, so the heating member 04 can also be electrically heated at this time. Through the above structure, the hair curler can not only realize the transformation of the shape of the first arm 11 and the second arm 21 to curl different parts of hair, but also use conductive points to realize the electrical connection between the first arm 11 and the second arm 21, which avoids the problem of easy breakage of the wire caused by the use of wire connection, and improves the service life and use experience of the curler.

[0035] Specially, as shown in Fig. 10 to 12, in another preferred embodiment, the second arm 21 comprises an elastic structure 26, the third conductive point C, the fourth conductive point D and the elastic structure 26 are arranged inside the second arm 21; the first conductive point A and the second conductive point B are arranged on one end of the detachable structure 05 located inside the second arm 21. The elastic structure 26 can be a spring, one end is fixed inside the second arm 21, the other end is connected to the plastic plate where the third conductive point C and the fourth conductive point D are provided, so that the third conductive point C and the fourth conductive point D can be moved relative to the second arm 21 driven by the elastic structure 26, and when the first arm 11 and the second arm 21 are fixed at the first operation position P1 or the second operation position P2, the elastic structure 26 presses the third conductive point C and the fourth conductive point D to the first conductive point A and the second conductive point B, making the conductive points close to each other under the action of the elastic structure 26. By setting the conductive connection point inside the second arm 21, the hair curler can be safer in use, and the conductive point will not be affected by water vapor, wear and foreign matter, so that the reliability and stability of the connection can be maintained at all times.

[0036] In the present application, the first arm 11 is fixedly connected to the detachable structure 05; the end of the detachable structure 05 embedded in the second arm 21 is arranged as a cylindrical structure; one end of the corresponding second arm 21 is arranged as a through-hole structure with the same shape but slightly smaller diameter of the cylindrical structure, so that the second arm 21 and the detachable structure 05 can be connected by interference fit; so that the hair curler can be disassembled between the second arm 21 and the first arm 11 when changing the shape, rotate and change the angle of the second arm 21 relative to the first arm 11, and then connect with the first arm 11, so that the

hair curler can change the shape more conveniently and improve the user's experience. At the same time, the first arm 11 and the heating member 04 can be set to various shapes suitable for various shapes. As shown in Fig. 13, because the second arm 21 and the first arm 11 can be disassembled, users can use the same handle portion 06 to make different hair shapes with the first arm 11 and the heating member 04 of different shapes and sizes.

[0037] The embodiments of the present application have been described above with reference to the drawings, but the present application is not limited to the specific embodiments described above, and the specific embodiments described above are merely illustrative and not restrictive. In the light of the scope of the present application, many forms may be made without departing from the scope of the present application, and these are all within the protection of the present application.

Claims

1. A hair curler, comprising a first arm (11), second arm (21), and a rotation structure (03) rotatably connected to the first arm (11) and the second arm (21); wherein the first arm (11) comprises a heating member (04) for heating hair; the second arm (21) comprises a handle portion (06); one end of the rotation structure (03) is embedded in the first arm (11), and the other end is embedded in the second arm (21); the first arm (11) and the second arm (21) rotate relative to each other with respect to a rotation axis (33) of the rotation structure (03) to change a relative angle, and are fixed at a first operation position (P1) and a second operation position (P2).
2. The hair curler according to claim 1, further comprising a first end (01) and a second end (02), wherein the first arm (11) is between the first end (01) and the rotation structure (03), and the second arm (21) is between the second end (02) and the rotation structure (03).
3. The hair curler according to claim 2, wherein the first operation position (P1) is a position where the first arm (11) is parallel to the second arm (21), and the first end (01), the second end (02) and the rotation structure (03) are on the same axis; the second operation position (P2) is a position where the first arm (11) is vertical to the second arm (21).
4. The hair curler according to claim 3, wherein a line connecting the first end (01) and the rotation structure (03) forms a first axis (13); a line connecting the second end (02) and the rotation structure (03) forms a second axis (23); a first interior angle (34) is formed between the rotation axis (33) and the first axis (13); a second interior angle (35) is formed between the rotation axis (33) and the second axis (23); when the first arm (11) and the second arm (21) rotate relative to each other with respect to the rotation axis (33) to change a relative angle, the first interior angle (34) and the second interior angle (35) remain unchanged.
5. The hair curler according to claim 3, wherein a line connecting the first end (01) and the rotation structure (03) forms a first axis (13); a line connecting the second end (02) and the rotation structure (03) forms a second axis (23); the rotation axis (33) is vertical to the first axis (13) and the second axis (23).
6. The hair curler according to one of claims 2-5, wherein the second end (02) further comprises a second rotation structure (24), and the second arm (21) is rotatably connected to a power cord member (25) through the second rotation structure (24).
7. The hair curler according to claim 1, wherein the heating member (04) is a heating square cylinder (41), comprising at least one pair of hair-heating surfaces (42) and one pair of hair-heating round corners (43).
8. The hair curler according to claim 2, wherein a second handle portion (08) is arranged on the first end (01) and the second handle portion (08) is connected with the heating member (04).
9. The hair curler according to claim 1, wherein the first arm (11) further comprises a temperature sensing member (44); the second arm (21) further comprises a temperature control system (45), and the heating member (04) or/and the temperature sensing member (44) is electrically connected with the temperature control system (45).
10. The hair curler according to claim 1, wherein the heating member (04) is detachably connected with the first arm (11).
11. A hair curler, comprising a first arm (11), a second arm (21), a detachable structure (05) connected with the first arm (11) and the second arm (21); wherein the first arm (11) comprises a heating member (04) for heating hair; the second arm (21) comprises a handle portion (06); one end of the detachable structure (05) is fixedly connected with the first arm (11), and the other end of the detachable structure (05) is detachably connected with the second arm (21) and embedded into the second arm (21) so that the first arm (11) and the second arm (21) can be disassembled from each other and fixed at the first operation position (P1) and second operation position (P2) after rotating relative to each other with respect to the detachable structure (05) to change a relative angle; an end of the first arm (11) close to the second arm

(21) is provided with a first conductive point (A) and a second conductive point (B) connecting with the heating member (04); the second arm (21) is provided with a third conductive point (C) and a fourth conductive point (D) corresponding to positions of the first conductive point (A) and the second conductive point (B) respectively; the third conductive point (C) and the fourth conductive point (D) are further connected with the power cord member (25); when the first arm (11) and the second arm (21) are fixed at the first operation position (P1), the first conductive point (A) is connected with the third conductive point (C) and the second conductive point (B) is connected with the fourth conductive point (D), making the heating member (04) energetically heated; when the first arm (11) and the second arm (21) are fixed at the second operation position (P2), the first conductive point (A) is connected with the fourth conductive point (D) and the second conductive point (B) is connected with the third conductive point (C), also making the heating member (04) energetically heated.

12. The hair curler according to claim 11 wherein the first operation position (P1) is a position where the first arm (11) is parallel to the second arm (21), the second operation position (P2) is a position where the first arm (11) is vertical to the second arm (21).
13. The hair curler according to claim 11, wherein the second arm (21) comprises an elastic structure (26), the third conductive point (C), the fourth conductive point (D) and the elastic structure (26) are arranged inside the second arm (21); the first conductive point (A) and the second conductive point (B) are arranged on one end of the detachable structure (05) located inside the second arm (21); one end of the elastic structure (26) is fixed inside the second arm (21), and the other end of the elastic structure (26) is fixedly connected with the third conductive point (C) and the fourth conductive point (D), so that the third conductive point (C) and the fourth conductive point (D) can be moved relative to the second arm (21) and when the first arm (11) and the second arm (21) are fixed at the first operation position (P1) or the second operation position (P2), the elastic structure (26) presses the third conductive point (C) and the fourth conductive point (D) to the first conductive point (A) and the second conductive point (B).

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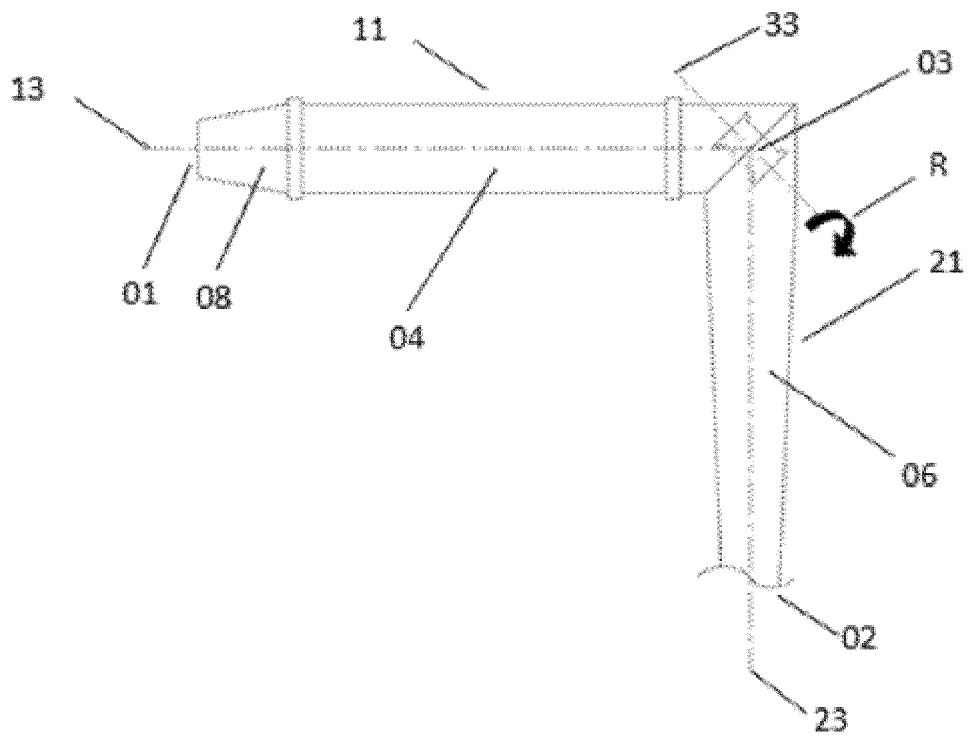


Figure 1

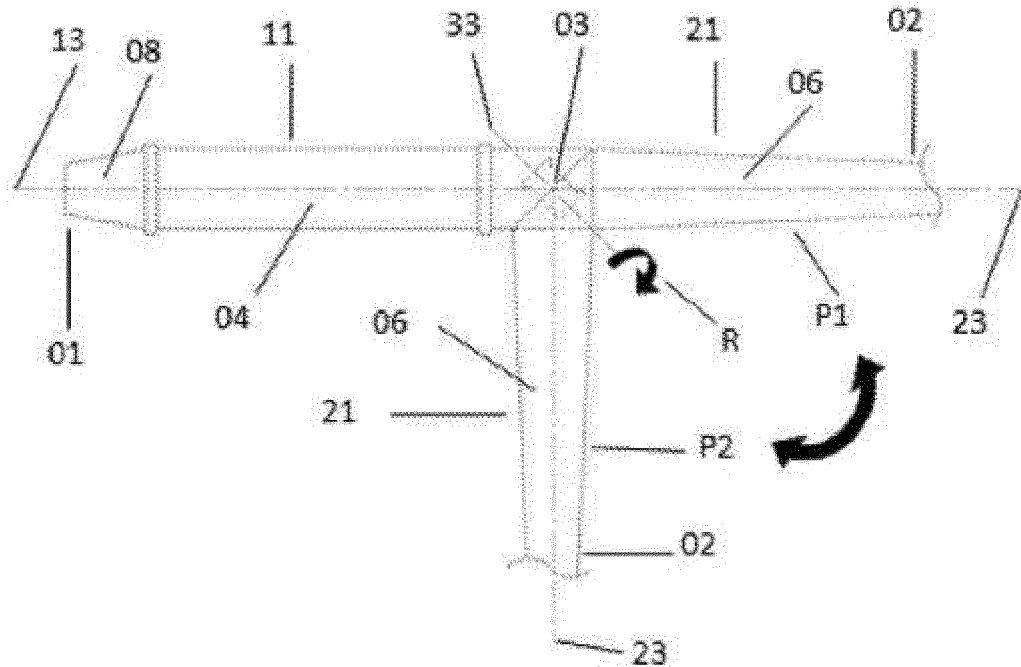


Figure 2

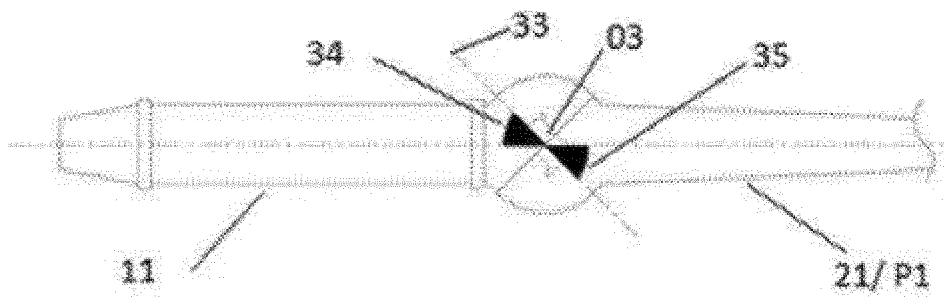


Figure 3A

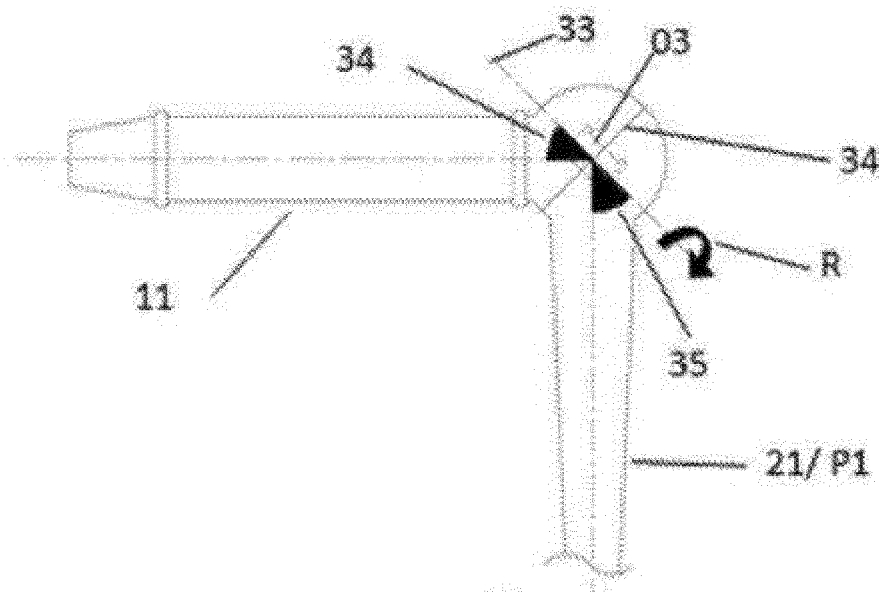


Figure 3B

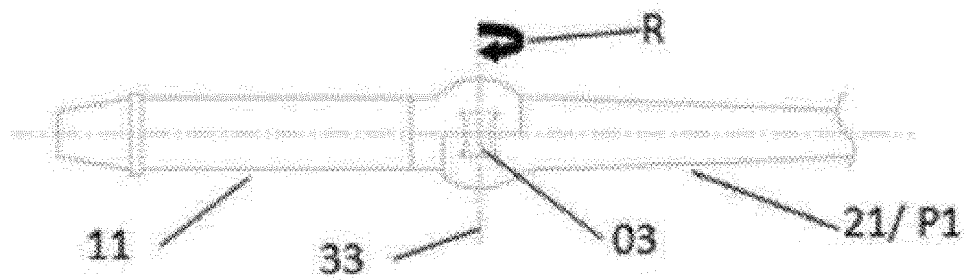


Figure 4A

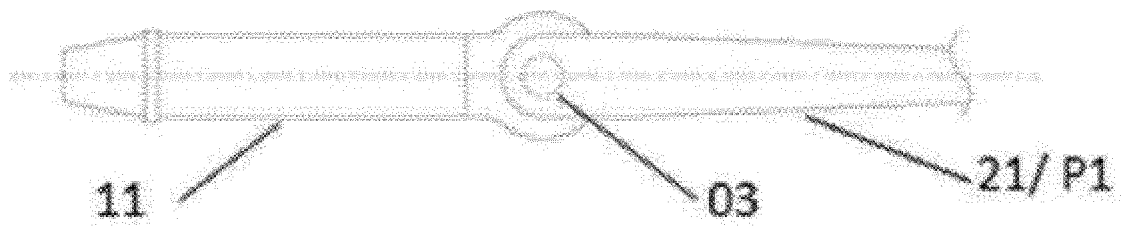


Figure 4B

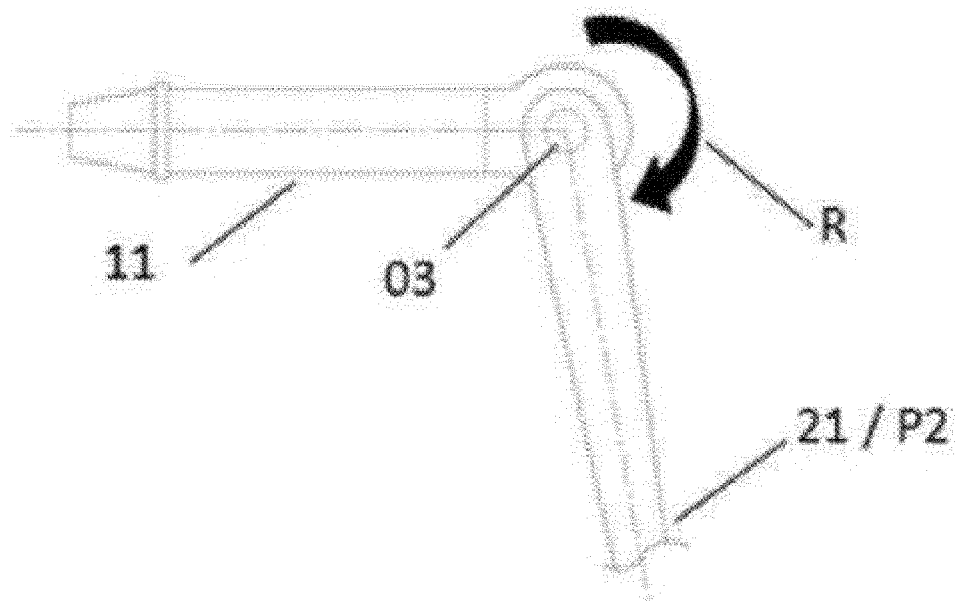


Figure 4C

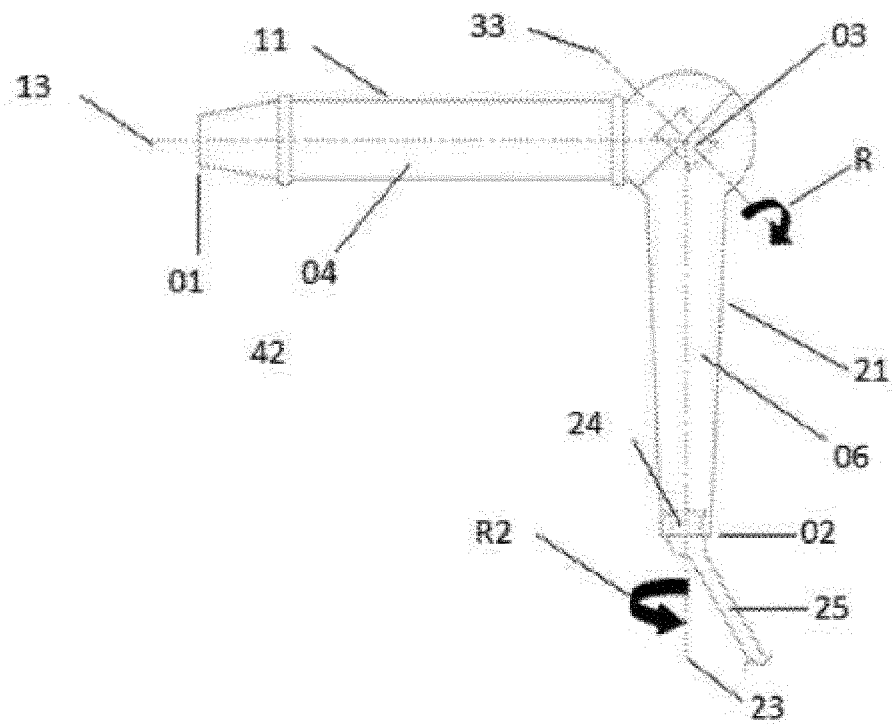


Figure 5

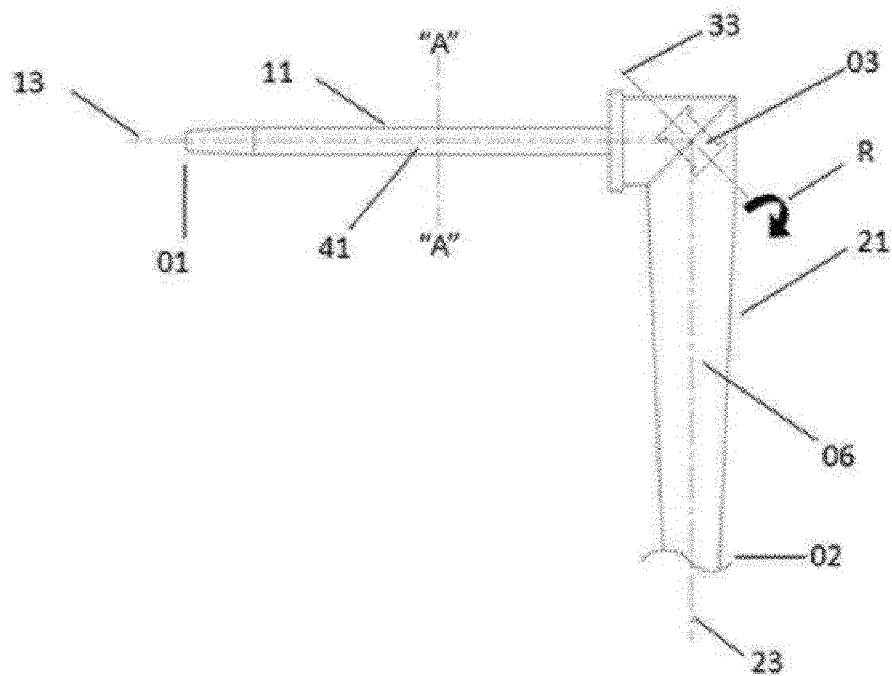


Figure 6A

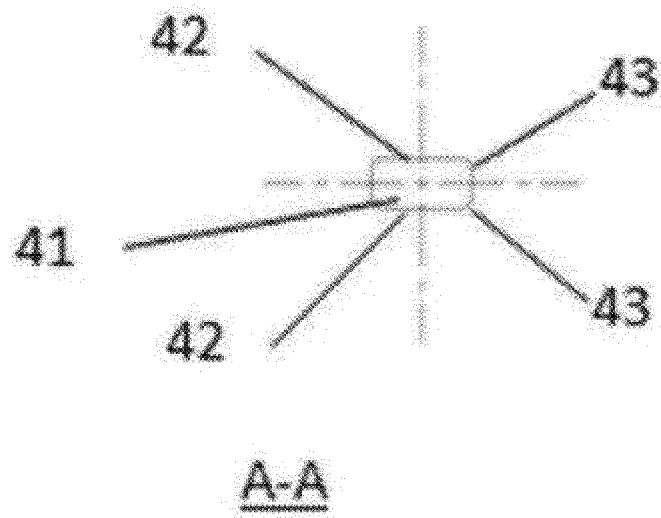


Figure 6B

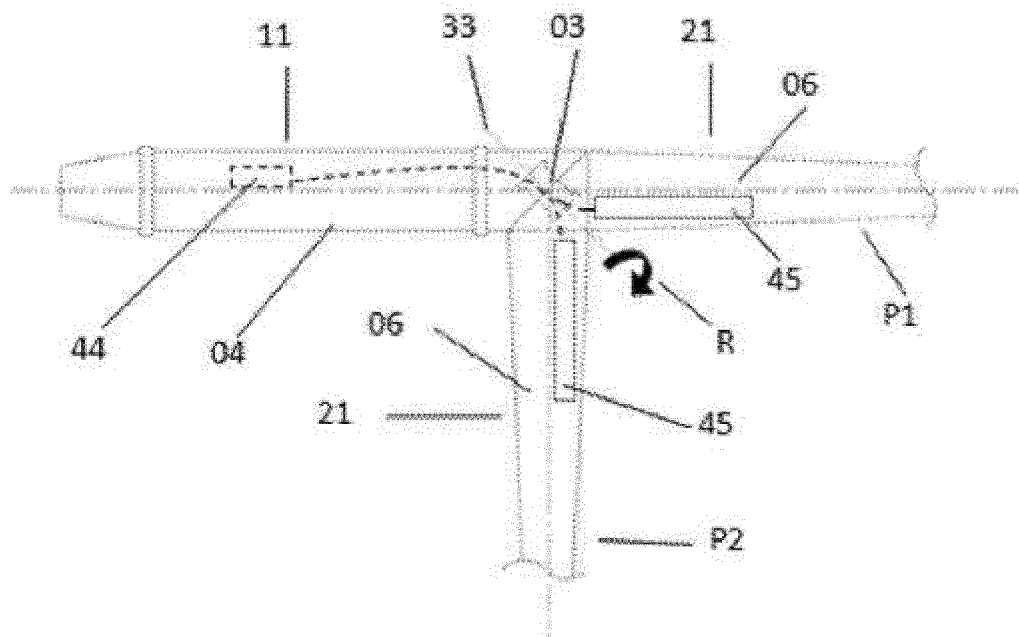


Figure 7

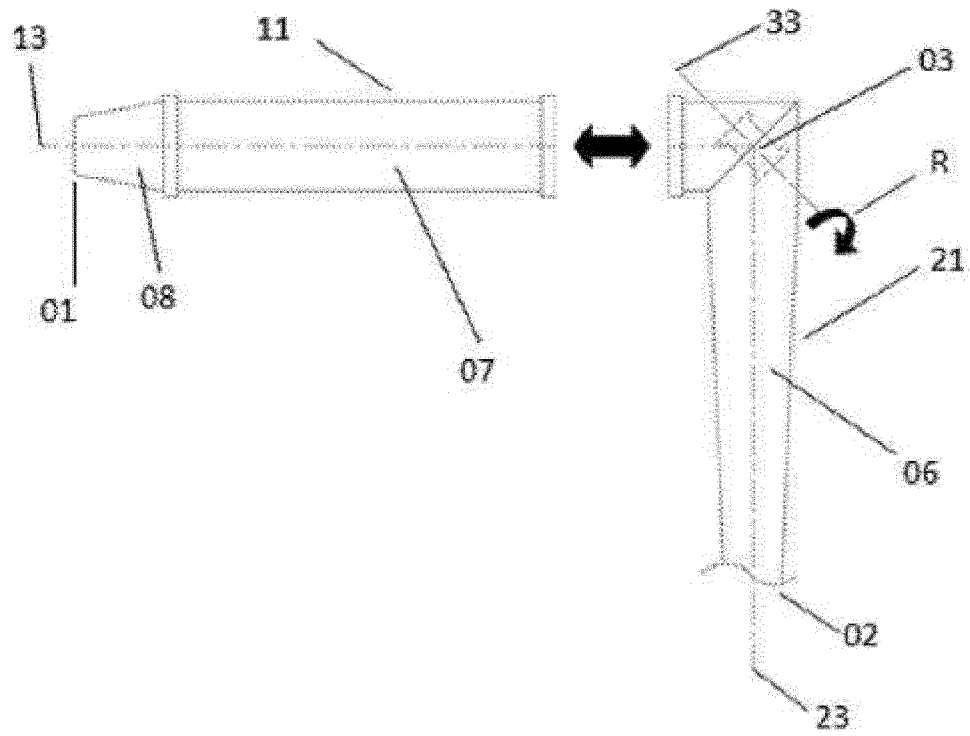


Figure 8

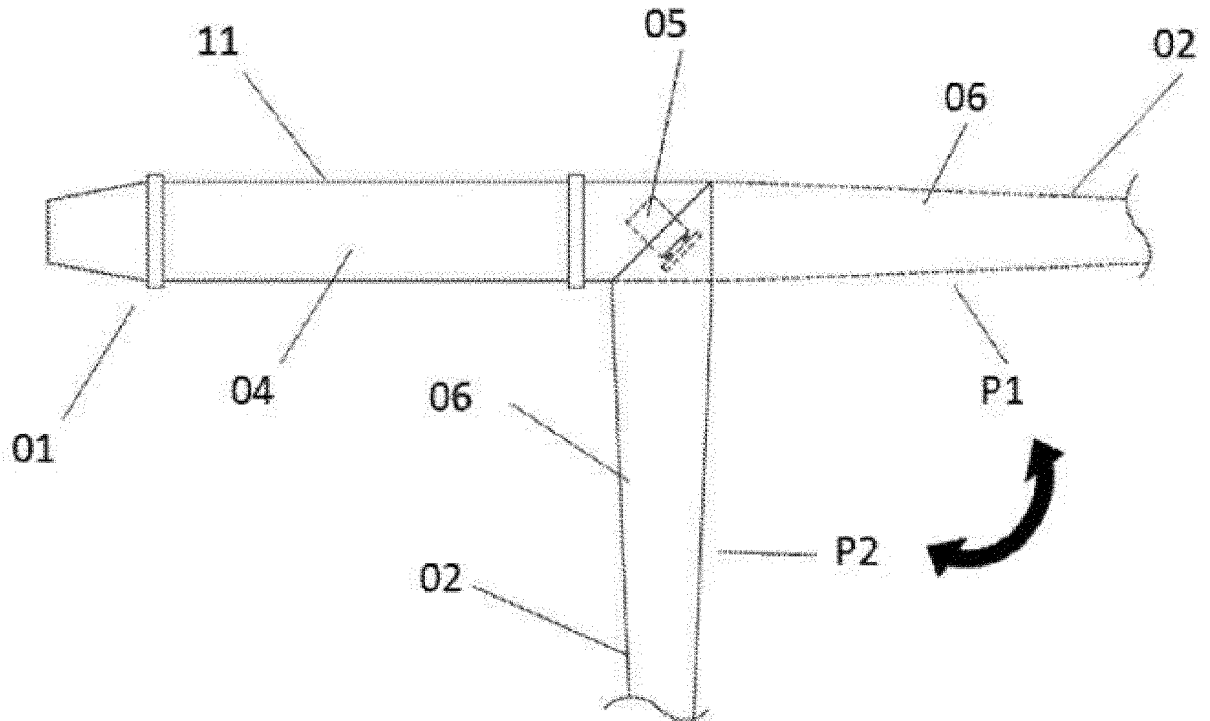


Figure 9

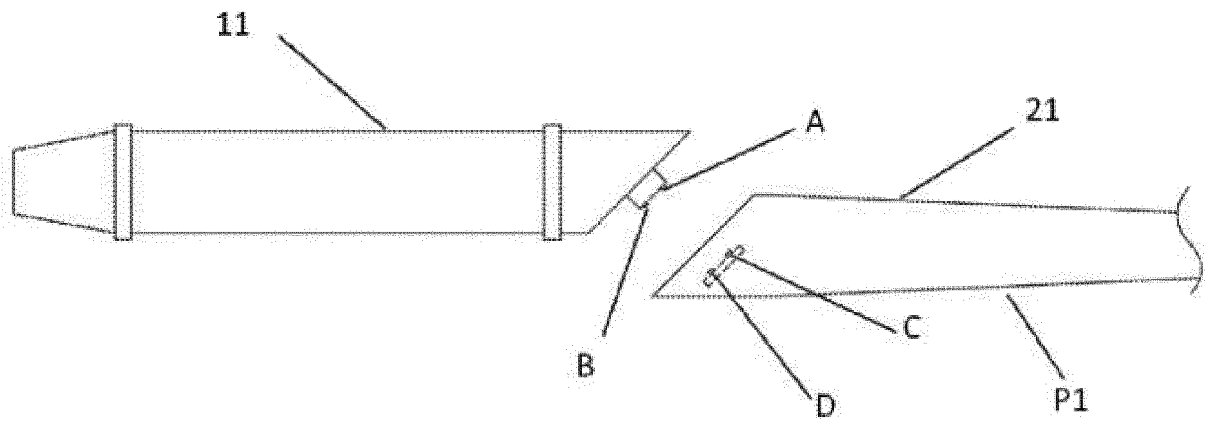


Figure 10

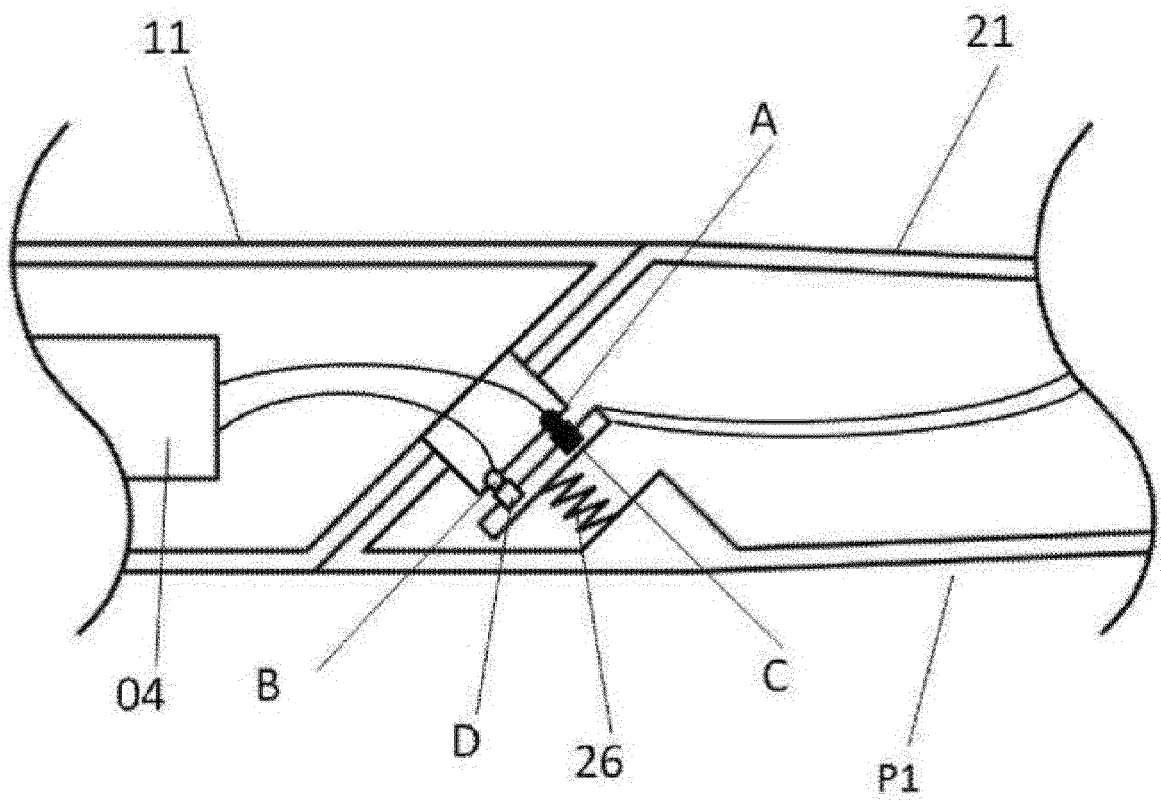


Figure 11

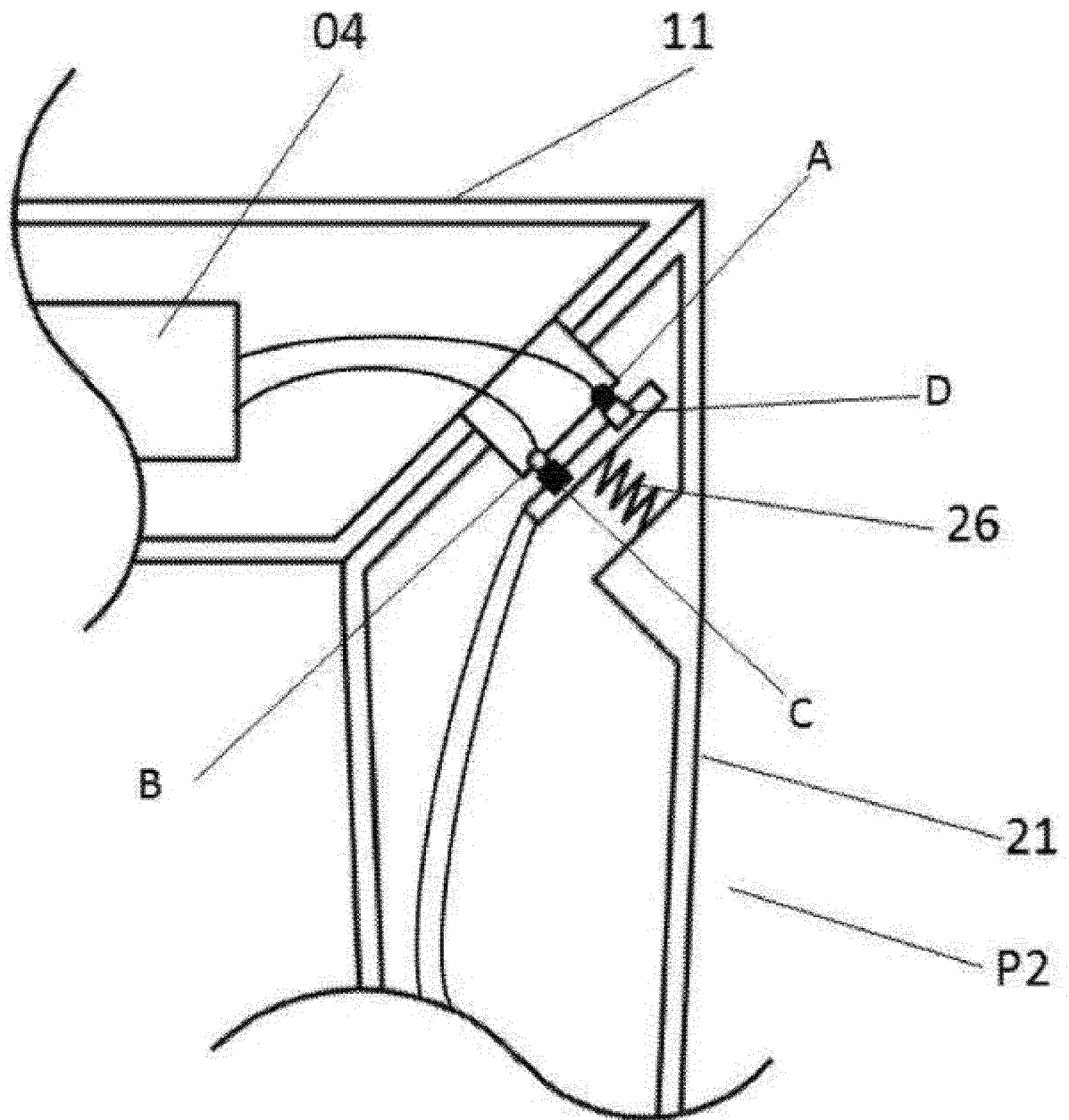


Figure 12

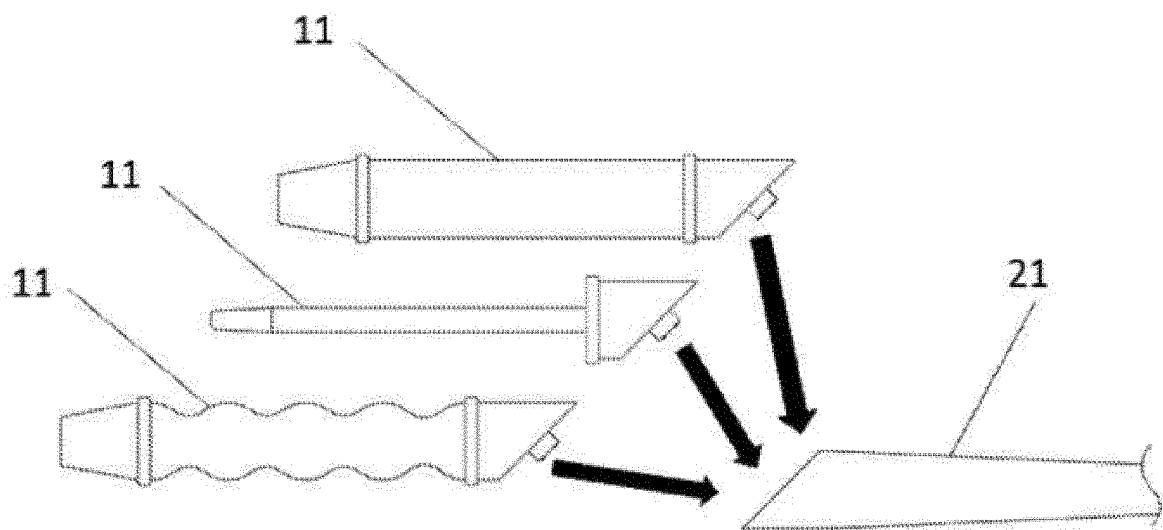


Figure 13

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2018/083113

A. CLASSIFICATION OF SUBJECT MATTER

A45D 1/00 (2006.01) i; A45D 6/00 (2006.01) n

According to International Patent Classification (IPC) or to both national classification and IPC

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNTXT; CNABS, VEN: 烫发, 卷发, 美发, 直发, 发型, 转, 折, 弯, 垂直, 角度, 手柄, 把手, 握柄, haire, iron, curl, style, heat, straight, dress, rotate, turn, fold, bent, vertical, angle, handle

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 207055104 U (KENFORD INDUSTRIAL CO., LTD.), 02 March 2018 (02.03.2018), description, paragraphs [0025]-[0036], and figures 1-8	1-13
PX	CN 206453422 U (FENDA TECHNOLOGY CO., LTD.), 01 September 2017 (01.09.2017), description, paragraphs [0026]-[0037], and figures 1-3	1-10
X	US 2010089413 A1 (WRIGHT, C. et al.), 15 April 2010 (15.04.2010), description, paragraphs [0014]-[0025], and figures 1-5	1-5, 7-8, 10
Y	US 2010089413 A1 (WRIGHT, C. et al.), 15 April 2010 (15.04.2010), description, paragraphs [0014]-[0025], and figures 1-5	6, 9
Y	CN 204908349 U (LI, Pengyun), 30 December 2015 (30.12.2015), description, paragraphs [0025]-[0032], and figures 1-5	6, 9
X	CN 205696305 U (KANG, Yong), 23 November 2016 (23.11.2016), description, paragraphs [0020]-[0028], and figure 1	1-5, 7-8, 10
X	KR 20040096467 A (CHEOUNG, W.C.), 16 November 2004 (16.11.2004), description, pages 3-4, and figure 4	1-5, 7-8, 10
A	CN 203279984 U (LIU, Mingyue), 13 November 2013 (13.11.2013), entire document	1-13

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance	
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"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

Date of the actual completion of the international search
10 July 2018Date of mailing of the international search report
23 July 2018Name and mailing address of the ISA
State Intellectual Property Office of the P. R. China
No. 6, Xitucheng Road, Jimenqiao
Haidian District, Beijing 100088, China
Facsimile No. (86-10) 62019451

Authorized officer

MA, Meijuan

Telephone No. 86-10-62085692

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2018/083113

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 203073424 U (DONGGUAN CITY JIATE ELECTRICAL TECHNOLOGY CO., LTD.), 24 July 2013 (24.07.2013), entire document	1-13

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/CN2018/083113

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN 207055104 U	02 March 2018	None	
CN 206453422 U	01 September 2017	None	
US 2010089413 A1	15 April 2010	None	
CN 204908349 U	30 December 2015	None	
CN 205696305 U	23 November 2016	None	
KR 20040096467 A	16 November 2004	None	
CN 203279984 U	13 November 2013	None	
CN 203073424 U	24 July 2013	None	

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