

Description**Technical Field**

5 [0001] The present invention relates to an electric heating appliance for hair styling, and more particularly, to an electric heating appliance for hair styling that is capable of preventing a power line from being entangled, while being very convenient to use.

Background Art

10 [0002] Generally, electric heating appliances for hair styling include curling irons, hair straighteners, hair dryers, and so on. The curling iron is a cylindrical tool for creating waves and curls in a hair shop, and the hair straightener has a pair of tongs, unlike the cylindrical curling iron, to straighten hair through electric heating plates attached to the insides of the tongs.

15 [0003] While hair styling is being carried out using such electric heating appliance, by the way, if the electric heating appliance is not used for a while, it should be taken by a user's hand. Otherwise, the electric heating appliance is placed at a given position, and in this case, however, a preliminary action should be taken to prevent the heat generated from the electric heating appliance from being transmitted to the given position. As a result, the inconveniences in use and the reduction of workability are undesirably caused.

20

DisclosureTechnical Problem

25 [0004] Accordingly, the present invention has been made in view of the above-mentioned problems occurring in the prior art, and it is an object of the present invention to provide an electric heating appliance for hair styling that is capable of preventing a power line from being entangled, while being very convenient to use.

Technical Solution

30

[0005] To accomplish the above-mentioned object, according to a first aspect of the present invention, there is provided an electric heating appliance for hair styling, which is convenient to use, having a plug part of a power line insertedly mounted into a fastening part on one side of a heating part and a stopper part fastened to the fastening part, the electric heating appliance including: a rotation part mounted rotatably on the fastening part; and a hanger part mounted on the rotation part to hang the heating part thereon.

35

[0006] According to the present invention, desirably, the rotation part includes a base ring insertedly mounted on the fastening part, a rotation member rotatably disposed on the outer peripheral surface of the base ring, and a snap ring for fixing the position of the rotation member thereto.

40

[0007] According to the present invention, desirably, the rotation member includes a body having a through hole for passing the base ring and the power line therethrough and a mounting hole for insertedly mounting a fixed member of the hanger part thereinto.

[0008] According to the present invention, desirably, the fastening part includes a locking protrusion for guiding and locating the rotation part thereon and a locking groove spaced apart from the locking protrusion by a given distance to fit the snap ring thereto.

45

[0009] According to the present invention, desirably, the hanger part includes U-shaped elastic wires and the fixed member disposed on one end portion of the elastic wires in such a manner as to be fixedly mounted to the mounting hole of the rotation member.

[0010] According to the present invention, desirably, the electric heating appliance for hair styling includes a rotation part having the base ring, the rotation member and the snap ring is located on the front end periphery of the power line, and the power line includes a fixing groove formed on the end portion at which the plug part is located to fixedly mount the snap ring thereto and a fixing protrusion formed on the outer peripheral surface thereof spaced apart from the fixing groove by a given distance to fix the position of the rotation member thereto.

50

[0011] To accomplish the above-mentioned object, according to a second aspect of the present invention, there is provided an electric heating appliance for hair styling, which is convenient to use, having a plug part of a power line insertedly mounted into a fastening part on one side of a heating part and a stopper part fastened to the fastening part, the electric heating appliance including: an extension rotation part mounted rotatably on the fastening part; and a hanger part mounted on the extension rotation part to hang the heating part thereon, wherein the hanger part is connected to the extension rotation part in such a manner as to be movable by a given distance and to be further fixed to or deviated

55

from the power line.

[0012] According to the present invention, desirably, the extension rotation part includes a base ring insertedly mounted into the fastening part, an extension rotation member rotatably located on the outer peripheral surface of the base ring, and a snap ring for fixing the position of the extension rotation member thereto.

[0013] According to the present invention, desirably, the extension rotation member includes a body having a through hole formed on the top end thereof to pass the base ring and the power line therethrough and a mounting hole formed on the bottom end thereof, a moving member inserted into the mounting hole of the body in such a manner as to allow one side thereof to be connected to the ends of elastic wires of the hanger part, a guide bar for passing through an opening formed on one side of the body, a spring, and a guide hole of the moving member in such a manner as to be fixed to a second cover, a first cover for covering the rear surface of the moving member, and the second cover for covering the rear surface of the body.

[0014] According to the present invention, desirably, the hanger part includes the elastic wires having a shape of U and a fixed member fittedly fixed to the elastic wires.

[0015] According to the present invention, desirably, the power line includes a contact member disposed protrudingly from a given position thereof, and the contact member is attached to or detached from the fixed member disposed on the hanger part by means of magnetic forces.

[0016] According to the present invention, desirably, the electric heating appliance for hair styling includes an extension rotation part having the base ring, the extension rotation member, and the snap ring is located at the front end portion of the power line, and the power line includes a fixing groove formed on the end portion at which the plug part of the power line is located to fixedly mount the snap ring thereto and a fixing protrusion formed on the outer peripheral surface thereof spaced apart from the fixing groove by a given distance to fix the position of the extension rotation member thereto.

[0017] To accomplish the above-mentioned object, according to a third aspect of the present invention, there is provided an electric heating appliance for hair styling, which is convenient to use, having a plug part of a power line insertedly mounted into a fastening part on one side of a heating part and a stopper part fastened to the fastening part, the electric heating appliance including: a hanger part disposed integrally with the power line connected to the fastening part to hang the heating part thereon; and a branch portion formed on the power line to allow the power line to be deviated from the hanger part to form another power line.

[0018] According to the present invention, desirably, the hanger part includes U-shaped elastic wires having given elasticity.

Advantageous Effects

[0019] According to the present invention, the electric heating appliance for hair styling is capable of preventing the power line from being entangled, while being easy in making the hair style.

Description of Drawings

[0020]

FIG. 1 is a perspective view showing an electric heating appliance for hair styling according to a first embodiment of the present invention.

FIG. 2 is an exploded perspective view showing main parts of the electric heating appliance for hair styling according to the first embodiment of the present invention.

FIG. 3 is a perspective view showing the use state of the electric heating appliance for hair styling according to the first embodiment of the present invention.

FIG. 4 and FIG. 5 are perspective and exploded perspective views showing an electric heating appliance for hair styling according to a second embodiment of the present invention.

FIG. 6 is a perspective view showing an electric heating appliance for hair styling according to a third embodiment of the present invention.

FIG. 7 is an exploded perspective view showing main parts of the electric heating appliance for hair styling according to the third embodiment of the present invention.

FIG. 8 is an exploded perspective view showing an extension rotation member of the electric heating appliance for hair styling according to the third embodiment of the present invention.

FIG. 9 is sectional view showing the operating state of a rotation part in the electric heating appliance for hair styling according to the third embodiment of the present invention.

FIG. 10 is a perspective view showing an electric heating appliance for hair styling according to a fourth embodiment of the present invention.

FIG. 11 and FIG. 12 are perspective and exploded perspective views showing an electric heating appliance for hair

styling according to a fifth embodiment of the present invention.

FIG.13 is a perspective view showing another example of the electric heating appliance for hair styling according to the present invention.

Mode for Invention

[0021] Hereinafter, an explanation on an electric heating appliance for hair styling according to the present invention will be in detail given with reference to the attached drawing.

[0022] FIG. 1 is a perspective view showing an electric heating appliance for hair styling according to a first embodiment of the present invention, and FIG.2 is an exploded perspective view showing main parts of the electric heating appliance for hair styling according to the first embodiment of the present invention.

[0023] According to the first embodiment of the present invention, as shown, there is provided an electric heating appliance for hair styling having a plug part 21 of a power line 20 insertedly mounted into a fastening part 14 on one side of a heating part 10 and a stopper part 23 fastened to the fastening part 14, the electric heating appliance including: a rotation part 30 mounted rotatably on the fastening part 14; and a hanger part 40 mounted on the rotation part 30 to hang the heating part 10 thereon.

[0024] In this case, a hair straightener is provided as an example of the electric heating appliance for hair styling according to the present invention, and the heating part 10 has a shape of tongs having an upper handle 11 and a lower handle 12 connected by means of hinges 13. The upper handle 11 and the lower handle 12 have electric heating plates disposed on the insides thereof.

[0025] The rotation part 30 includes a base ring 31 insertedly mounted on the fastening part 14, a rotation member 32 rotatably disposed on the outer peripheral surface of the base ring 31, and a snap ring 32 for fixing the position of the rotation member 32 thereto.

[0026] The fastening part 14 includes a locking protrusion 14a for guiding and locating the rotation part 30 thereon and a locking groove 14b spaced apart from the locking protrusion 14a by a given distance to fit the snap ring 33 thereto.

[0027] The rotation member 32 includes a body 32a having a through hole 32c for passing the base ring 31 and the power line 20 therethrough and a mounting hole 32b for insertedly mounting a fixed member 42 of the hanger part 40 thereinto.

[0028] The hanger part 40 includes U-shaped elastic wires 41 and the fixed member 42 disposed on one end portion of the elastic wires 41 in such a manner as to be fixedly mounted to the mounting hole 32b of the rotation member 32.

[0029] Under the above-mentioned configuration, the assembling process of the electric heating appliance for hair styling according to the first embodiment of the present invention will be explained.

[0030] First, the fixed member 42 of the hanger part 40 is fixedly mounted to the mounting hole 32b of the rotation member 32.

[0031] Next, the power line 20 is passed sequentially through the stopper part 23, the snap ring 33, the rotation member 32 and the base ring 33, and the plug part 21 of the power line 20 is fixedly inserted into the fastening part 14 separated as one part of the two parts of the electric heating appliance.

[0032] After that, the base ring 31 and the through hole 32 of the rotation member 32 fitted to the outer peripheral surface of the base ring 31 are inserted into the fastening part 14.

[0033] At this time, one side of the base ring 31 and one side of the rotation member 32 are locked onto the locking protrusion 14a, and the snap ring 33 is insertedly fixed to the locking groove 14b on the other side of the base ring 31 and the other side of the rotation member 32, so that the rotation member 32 is fixedly located on the fastening part 14.

[0034] Next, the stopper part 23 is fastened to the fastening part 14, thereby completing the assembling process of the electric heating appliance for hair styling according to the first embodiment of the present invention.

[0035] Under the above-mentioned configuration, the rotation member 32 of the rotation part 30 is rotatable around the power line 20, and the hanger part 40 can be rotated through cooperative operation with the rotation part 30.

[0036] Accordingly, as shown in FIG.3, the electric heating appliance for hair styling according to the first embodiment of the present invention is convenient to use because the hanger part 40 is hung on a user's arm.

[0037] FIGS.4 and FIG.5 are perspective and exploded perspective views showing an electric heating appliance for hair styling according to a second embodiment of the present invention.

[0038] As shown, an electric heating appliance for hair styling according to the second embodiment of the present invention is configured wherein a rotation part 30A having a base ring 31, a rotation member 32 and a snap ring 33 is located on the front end periphery of a power line 20, unlike the first embodiment of the present invention.

[0039] That is, the power line 20 has a fixing groove 24 formed on the end portion at which a plug part 21 is located to fixedly mount the snap ring 33 thereto and a fixing protrusion 28 formed on the outer peripheral surface thereof spaced apart from the fixing groove 24 by a given distance to fix the position of the rotation member 32 thereto.

[0040] The assembling and configuration of the electric heating appliance for hair styling according to the second embodiment of the present invention are now explained, and first, the power line 20 is passed sequentially through the

rotation part 30A and a stopper part 23. After that, the plug part 21 is fixedly inserted into the fastening part 14 separated as one part of the two parts of the electric heating appliance.

[0041] Next, the stopper part 23 is fastened to the fastening part 14, and the snap ring 33 is fixedly mounted to the fixing groove 24 of the power line 20.

[0042] After that, one side of the rotation member 32 is fixed to the snap ring 33, and the other side thereof is fixed in position to the fixing protrusion 28 of the power line 20.

[0043] The operations after the fixation according to the second embodiment of the present invention are the same as according to the first embodiment of the present invention.

[0044] FIG.6 is a perspective view showing an electric heating appliance for hair styling according to a third embodiment of the present invention, and FIG.7 is an exploded perspective view showing main parts of the electric heating appliance for hair styling according to the third embodiment of the present invention.

[0045] According to the third embodiment of the present invention, as shown, there is provided an electric heating appliance for hair styling having a plug part 21 of a power line 20 insertedly mounted into a fastening part 14 on one side of a heating part 10 and a stopper part 23 fastened to the fastening part 14, the electric heating appliance including: an extension rotation part 60 mounted rotatably on the fastening part 14; and a hanger part 40 mounted on the extension rotation part 60 to hang the heating part 10 thereon.

[0046] In this case, the hanger part 40 is connected to the extension rotation part 60 in such a manner as to be movable by a given distance and to be further fixed to or deviated from the power line 20.

[0047] The extension rotation part 60 includes a base ring 31 insertedly mounted into the fastening part 14, an extension rotation member 50 rotatably located on the outer peripheral surface of the base ring 31, and a snap ring 33 for fixing the position of the extension rotation member 50 thereto.

[0048] As shown in FIG.8, the extension rotation member 50 includes a body 51 having a through hole 53 formed on the top end thereof to pass the base ring 31 and the power line 20 therethrough and a mounting hole 52 formed on the bottom end thereof, a moving member 54 inserted into the mounting hole 52 of the body 51 in such a manner as to allow one side thereof to be connected to the ends of elastic wires 41 of the hanger part 40, a guide bar 55 for passing through an opening 51a formed on one side of the body 51, a spring 56, and a guide hole 54b of the moving member 54 in such a manner as to be fixed to a second cover 58, a first cover 57 for covering the rear surface of the moving member 54, and the second cover 58 for covering the rear surface of the body 51.

[0049] In this case, the moving part 54 has wire holes 54a, and after the elastic wires 41 and steel cores 43 are inserted into the wire holes 54a and fixed to the wire holes 54a through knots, the first cover 57 is attached to the rear surface of the moving part 54.

[0050] Further, the moving part 54 is movable forward and backward by a given distance by means of the guide bar 55 disposed on one side of the body 51 and the elastic force of the spring 56.

[0051] The end of the guide bar 55 is passed through a rivet hole 58a formed on the second cover 58 and then riveted.

[0052] The hanger part 40 has the U-shaped elastic wires 41 and a fixed member 45 fittedly fixed to the elastic wires 41.

[0053] The fixed member 45 includes insertion holes 44 for inserting the elastic wires 41, and after the elastic wires 41 are inserted into the insertion holes 44, the fixed member 45 is fixedly disposed at a portion wherein a contact member 25 is mounted on the power line 20.

[0054] The power line 20 has the contact member 25 disposed protrudingly from a given position thereof, and the contact member 25 is attached to or detached from the fixed member 45 disposed on the hanger part 40.

[0055] The contact member 25 of the power line 20 and the fixed member 45 of the hanger part 40 have magnetic materials having different polarities from each other, and otherwise, only one of them has a magnetic material, while the other side thereof having a metal material attached to the magnetic material.

[0056] As a result, the contact member 25 of the power line 20 and the fixed member 45 of the hanger part 40 are attached to each other by means of magnetic forces.

[0057] Under the above-mentioned configuration of the extension rotation member 50 and the hanger part 40, as shown in FIG.5, the fixed member 45 of the hanger part 40 is kept attached to the contact member 25 of the power line 20 if the electric heating appliance for hair styling according to the present invention is not seated on the user's arm or is not used.

[0058] At this time, as shown in (a) of FIG.9, the moving member 54 is kept at its original state by means of the elastic force of the spring 56 fitted to the guide bar 55 at the interior of the body 51.

[0059] In this state, if the hanger part 40 of the electric heating appliance for hair styling according to the present invention is seated on the user's arm, as shown in (b) of FIG.9, the moving member 54 is moved forward by a given distance by means of the self weight of the electric heating appliance for hair styling according to the present invention, so that the fixed member 45 of the hanger part 40 is deviated from the contact member 25 of the power line 20.

[0060] However, at this time, the repulsive elastic force of the spring 56 is applied to the moving member 54, and at the moment when the electric heating appliance for hair styling according to the present invention is deviated from the user's arm and changed to the use state, the self weight of the electric heating appliance for hair styling according to

the present invention disappears, so that as the moving member 54 becomes returned to its original position by means of the elastic restoring force of the spring 56, the contact member 25 of the power line 20 and the fixed member 45 of the hanger part 40 are attached to each other by means of the magnetic forces.

[0061] Under the configurations of the fixed member 45 of the hanger part 40 and the contact member 25 of the power line 20, like this, while the electric heating appliance for hair styling according to the present invention is being taken to use, the hanger part 40 is attached to the power line 20, thereby preventing the hanger part 40 from being freely moved to interrupt the hair styling. Further, while the electric heating appliance for hair styling according to the present invention is being seated on the user's arm, the hanger part 40 is deviated from the power line 20 and is freely movable, thereby reducing the load applied to the user's arm, making it possible to conveniently move his or her arm, and preventing the power line 20 from being entangled or pressurized.

[0062] FIG. 10 is a perspective view showing an electric heating appliance for hair styling according to a fourth embodiment of the present invention.

[0063] According to a fourth embodiment of the present invention, as shown, an electric heating appliance for hair styling includes an extension rotation part 60A having a base ring 31, an extension rotation member 50, and a snap ring 33 in such a manner as to be located at the front end portion of a power line 20, unlike the third embodiment of the present invention.

[0064] That is, the power line 20 has a fixing groove formed on the end portion at which a plug part 21 of the power line 20 is located to fixedly mount the snap ring 33 thereto and a fixing protrusion 28 formed on the outer peripheral surface thereof spaced apart from the fixing groove 24 by a given distance to fix the position of the extension rotation member 50 thereto.

[0065] The assembling and configuration of the electric heating appliance for hair styling according to the fourth embodiment of the present invention are now explained, and first, the power line 20 is passed sequentially through the extension rotation part 60A and a stopper part 23. After that, the plug part 21 is fixedly inserted into the fastening part 14 separated as one part of the two parts of the electric heating appliance.

[0066] Next, the stopper part 23 is fastened to the fastening part 14, and the snap ring 33 is fixedly mounted to the fixing groove of the power line 20.

[0067] After that, one side of the extension rotation member 50 is fixed to the snap ring 33, and the other side thereof is fixed in position to the fixing protrusion 28 of the power line 20.

[0068] The operations after the fixation according to the fourth embodiment of the present invention are the same as according to the third embodiment of the present invention.

[0069] FIG. 11 and FIG. 12 are perspective and exploded perspective views showing an electric heating appliance for hair styling according to a fifth embodiment of the present invention.

[0070] According to the fifth embodiment of the present invention, as shown, there is provided an electric heating appliance for hair styling having a plug part 21 of a power line 20 insertedly mounted into a fastening part 14 on one side of a heating part 10 and a stopper part 23 fastened to the fastening part 14, the electric heating appliance including: a hanger part 40 disposed integrally with the power line 20 connected to the fastening part 14 to hang the heating part 10 thereon; and a branch portion 26 formed on the power line 20 to allow the power line 20 to be deviated from the hanger part 40 to form a power line 27.

[0071] The hanger part 40 has elastic wires 41 having given elasticity, but is not limited necessarily thereto.

[0072] Under the above-mentioned configuration, the electric heating appliance for hair styling according to the present invention is seated on the user's arm by means of the hanger part 40, thereby making it convenient to use.

[0073] In addition to the hair straightener, of course, it is obvious to those skilled in the art that the electric heating appliance for hair styling according to the present invention can be applied to a hair dryer as shown in FIG. 13.

Explanations on Reference Numerals

10: heating part	20: power line
21: plug part	28: fixing protrusion
24: fixing groove	25: contact member
30.30A: rotation part	31: base ring
32: rotation member	33: snap ring
40: hanger part	41: elastic wire
42: fixing member	43: steel core
44: insertion hole	45: fixed member
50: extension rotation member	
60: extension rotation part	

Claims

1. An electric heating appliance for hair styling, which is convenient to use, having a plug part 21 of a power line 20 insertedly mounted into a fastening part 14 on one side of a heating part 10 and a stopper part 23 fastened to the fastening part 14, the electric heating appliance comprising:

a rotation part 30 mounted rotatably on the fastening part 14; and
a hanger part 40 mounted on the rotation part 30 to hang the heating part 10 thereon.

2. The electric heating appliance for hair styling according to claim 1, wherein the rotation part 30 comprises a base ring 31 insertedly mounted on the fastening part 14, a rotation member 32 rotatably disposed on the outer peripheral surface of the base ring 31, and a snap ring 32 for fixing the position of the rotation member 32 thereto.

3. The electric heating appliance for hair styling according to claim 2, wherein the rotation member 32 comprises a body 32a having a through hole 32c for passing the base ring 31 and the power line 20 therethrough and a mounting hole 32b for insertedly mounting a fixed member 42 of the hanger part 40 thereinto.

4. The electric heating appliance for hair styling according to claim 1, wherein the fastening part 14 comprises a locking protrusion 14a for guiding and locating the rotation part 30 thereon and a locking groove 14b spaced apart from the locking protrusion 14a by a given distance to fit the snap ring 33 thereto.

5. The electric heating appliance for hair styling according to claim 1, wherein the hanger part 40 comprises U-shaped elastic wires 41 and the fixed member 42 disposed on one end portion of the elastic wires 41 in such a manner as to be fixedly mounted to the mounting hole 32b of the rotation member 32.

6. The electric heating appliance for hair styling according to claim 1, wherein a rotation part 30A having the base ring 31, the rotation member 32 and the snap ring 33 is located on the front end periphery of the power line 20, and the power line 20 comprises a fixing groove 24 formed on the end portion at which the plug part 21 is located to fixedly mount the snap ring 33 thereto and a fixing protrusion 28 formed on the outer peripheral surface thereof spaced apart from the fixing groove 24 by a given distance to fix the position of the rotation member 32 thereto.

7. An electric heating appliance for hair styling, which is convenient to use, having a plug part 21 of a power line 20 insertedly mounted into a fastening part 14 on one side of a heating part 10 and a stopper part 23 fastened to the fastening part 14, the electric heating appliance comprising:

an extension rotation part 60 mounted rotatably on the fastening part 14; and
a hanger part 40 mounted on the extension rotation part 60 to hang the heating part 10 thereon.
wherein the hanger part 40 is connected to the extension rotation part 60 in such a manner as to be movable by a given distance and to be further fixed to or deviated from the power line 20.

8. The electric heating appliance for hair styling according to claim 7, wherein the extension rotation part 60 comprises a base ring 31 insertedly mounted into the fastening part 14, an extension rotation member 50 rotatably located on the outer peripheral surface of the base ring 31, and a snap ring 33 for fixing the position of the extension rotation member 50 thereto.

9. The electric heating appliance for hair styling according to claim 8, wherein the extension rotation member 50 comprises a body 51 having a through hole 53 formed on the top end thereof to pass the base ring 31 and the power line 20 therethrough and a mounting hole 52 formed on the bottom end thereof, a moving member 54 inserted into the mounting hole 52 of the body 51 in such a manner as to allow one side thereof to be connected to the ends of elastic wires 41 of the hanger part 40, a guide bar 55 for passing through an opening 51a formed on one side of the body 51, a spring 56, and a guide hole 54b of the moving member 54 in such a manner as to be fixed to a second cover 58, a first cover 57 for covering the rear surface of the moving member 54, and the second cover 58 for covering the rear surface of the body 51.

10. The electric heating appliance for hair styling according to claim 7, wherein the hanger part 40 comprises the elastic wires 41 having a shape of U and a fixed member 45 fittedly fixed to the elastic wires 41.

11. The electric heating appliance for hair styling according to claim 7, wherein the power line 20 comprises a contact

member 25 disposed protrudingly from a given position thereof, and the contact member 25 is attached to or detached from the fixed member 45 disposed on the hanger part 40 by means of magnetic forces.

5 12. The electric heating appliance for hair styling according to claim 7, wherein an extension rotation part 60A having the base ring 31, the extension rotation member 50, and the snap ring 33 is located at the front end portion of the power line 20, and the power line 20 comprises a fixing groove formed on the end portion at which the plug part 21 of the power line 20 is located to fixedly mount the snap ring 33 thereto and a fixing protrusion 28 formed on the outer peripheral surface thereof spaced apart from the fixing groove 24 by a given distance to fix the position of the extension rotation member 50 thereto.

10 13. An electric heating appliance for hair styling, which is convenient to use, having a plug part 21 of a power line 20 insertedly mounted into a fastening part 14 on one side of a heating part 10 and a stopper part 23 fastened to the fastening part 14, the electric heating appliance comprising:

15 a hanger part 40 disposed integrally with the power line 20 connected to the fastening part 14 to hang the heating part 10 thereon; and
a branch portion 26 formed on the power line 20 to allow the power line 20 to be deviated from the hanger part 40 to form a power line 27.

20 14. The electric heating appliance for hair styling according to claim 13, wherein the hanger part 40 comprises U-shaped elastic wires 41 having given elasticity.

Fig.1

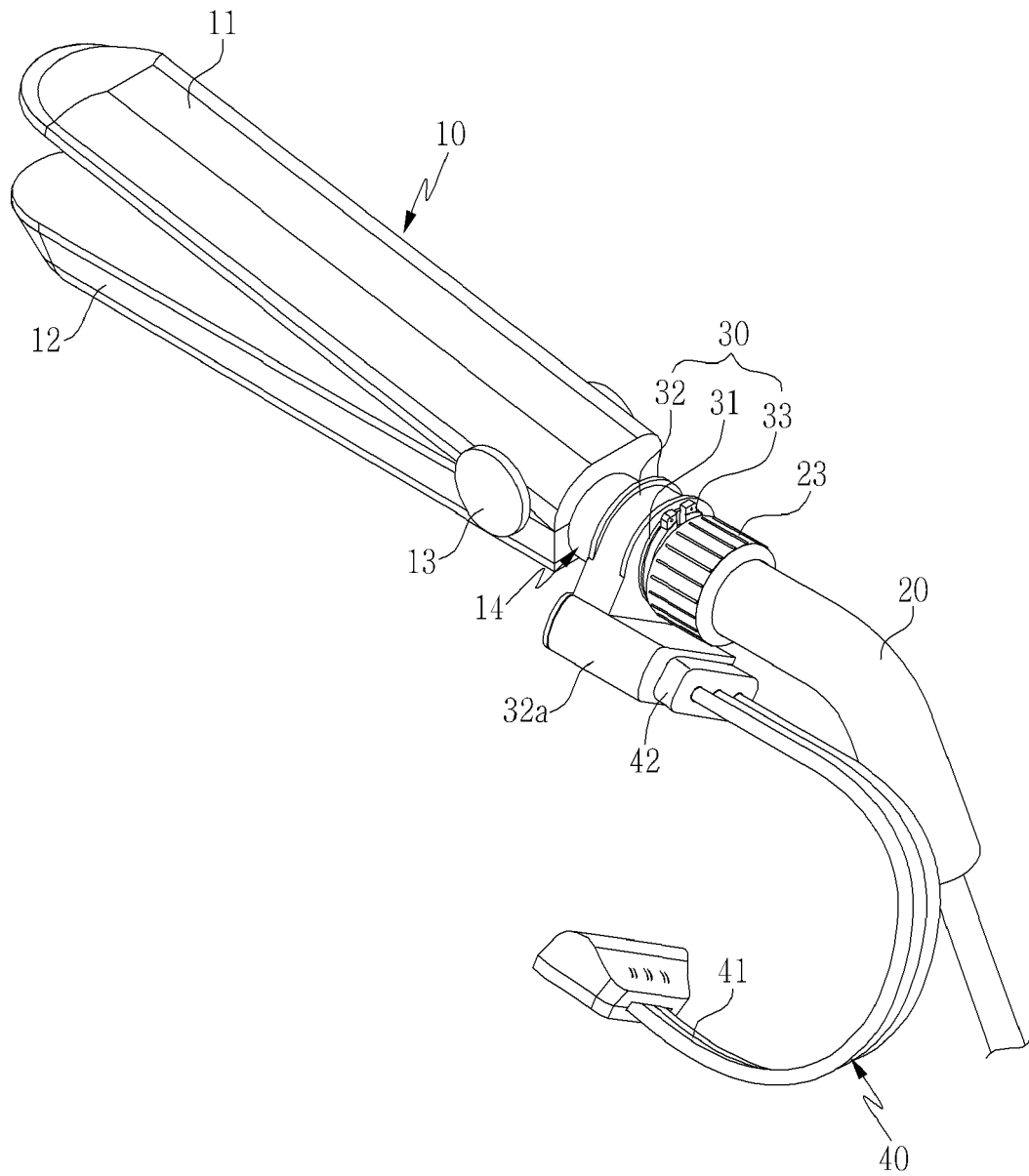


Fig.2

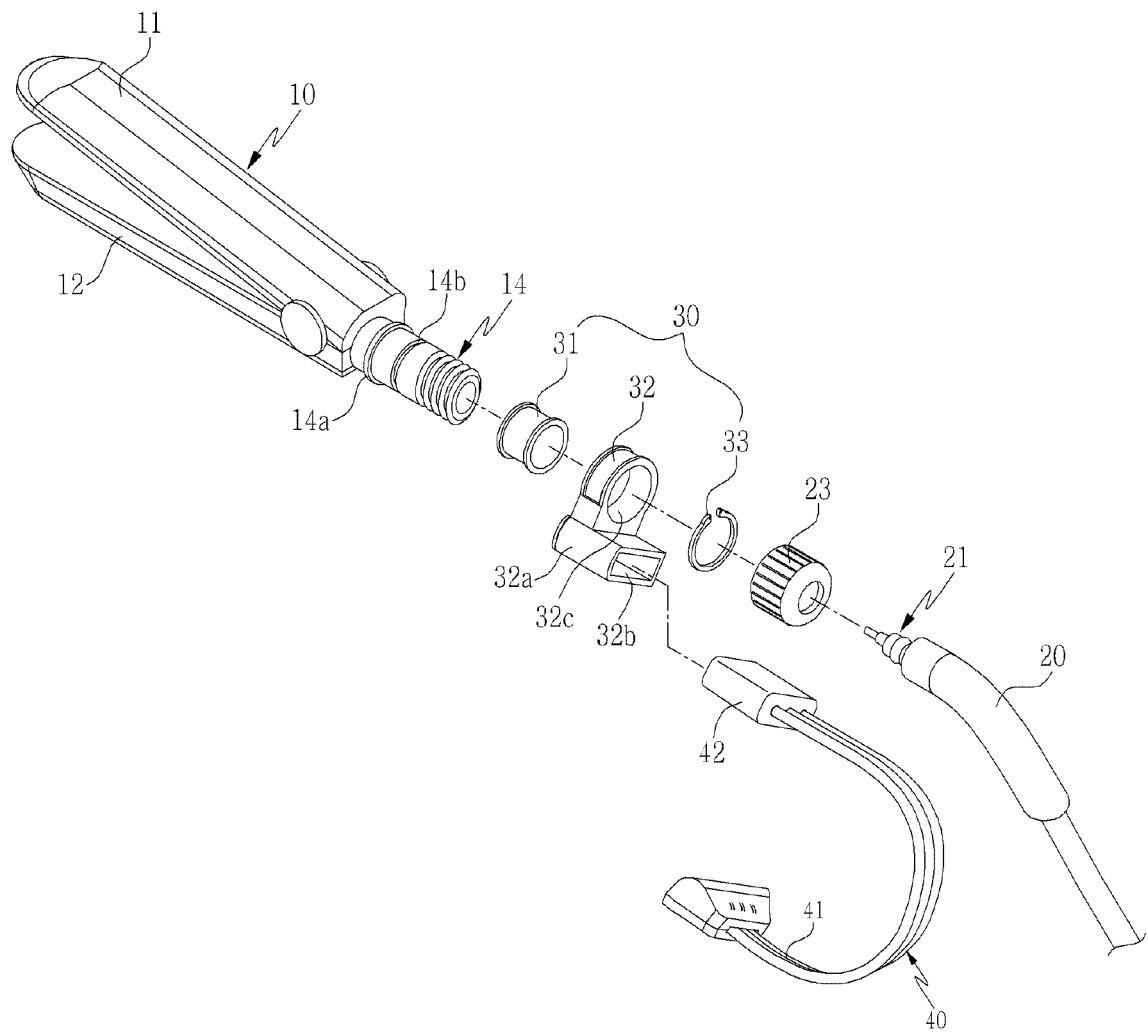


Fig.3

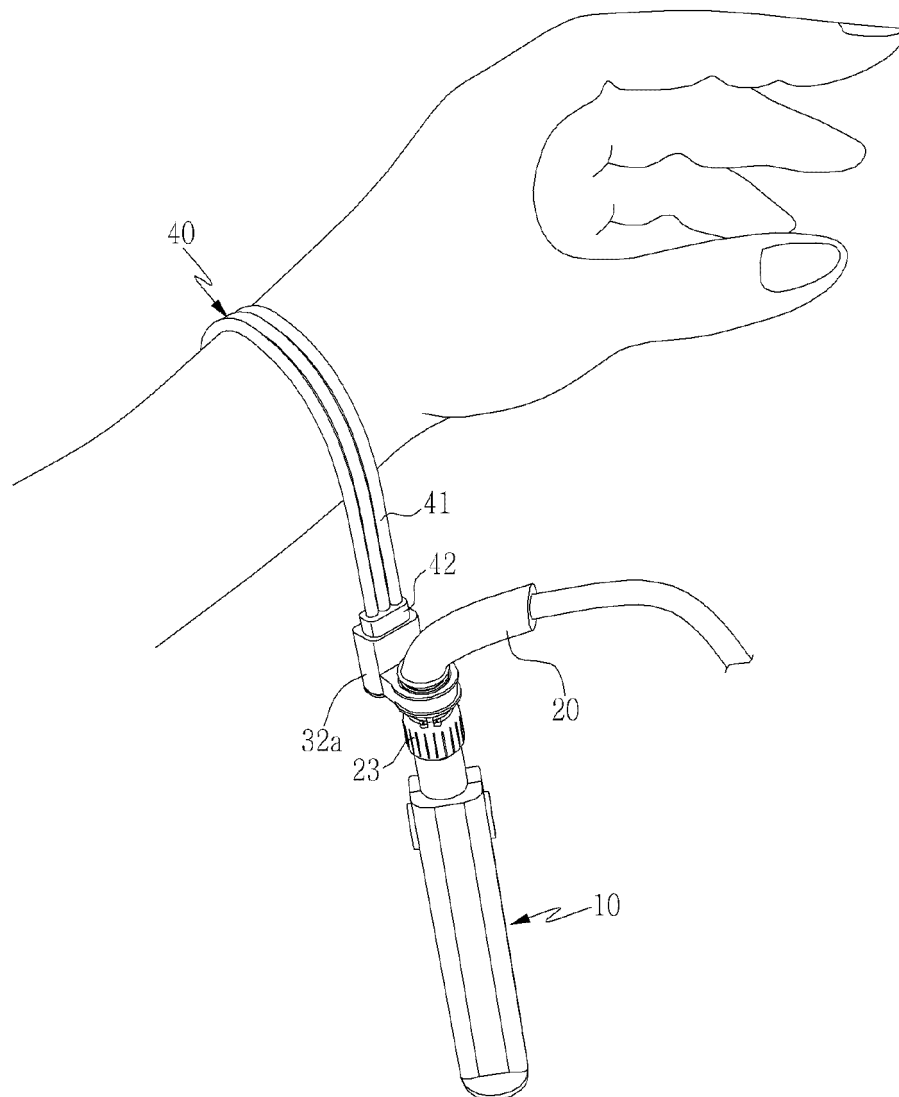


Fig. 4

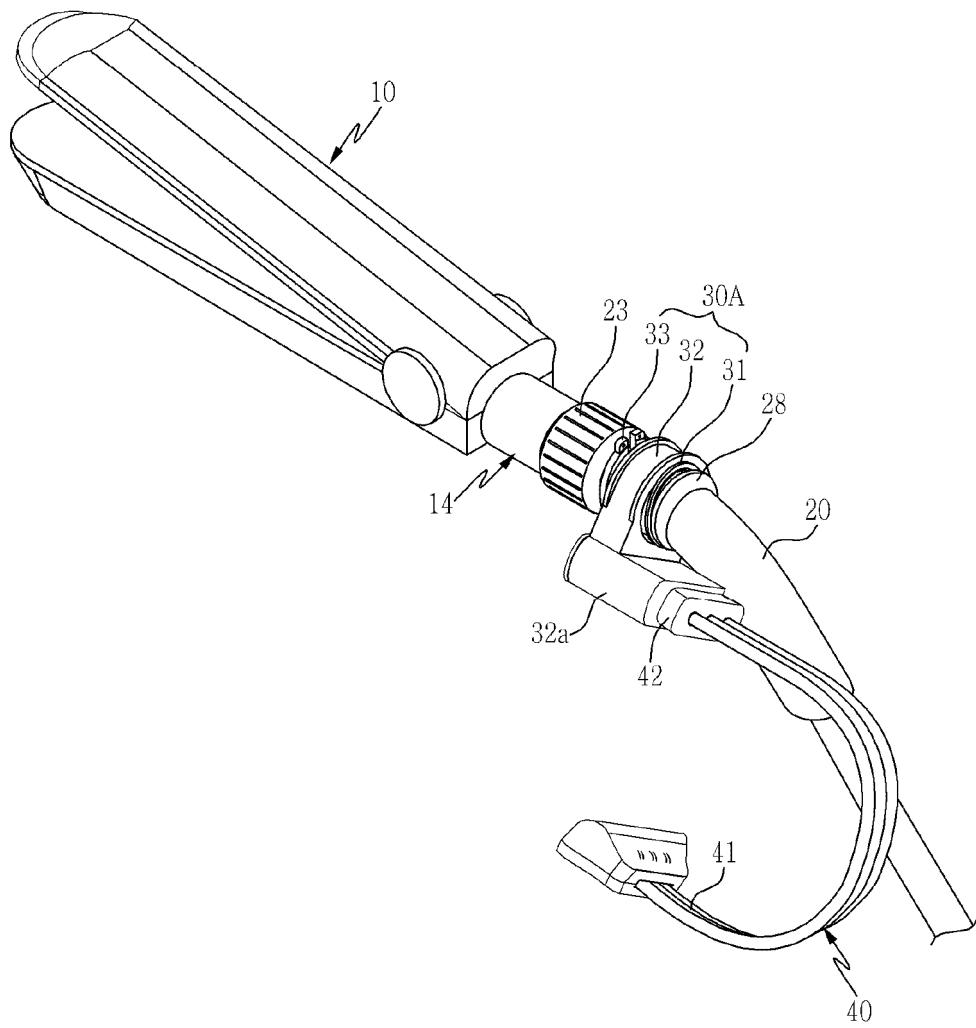


Fig.5

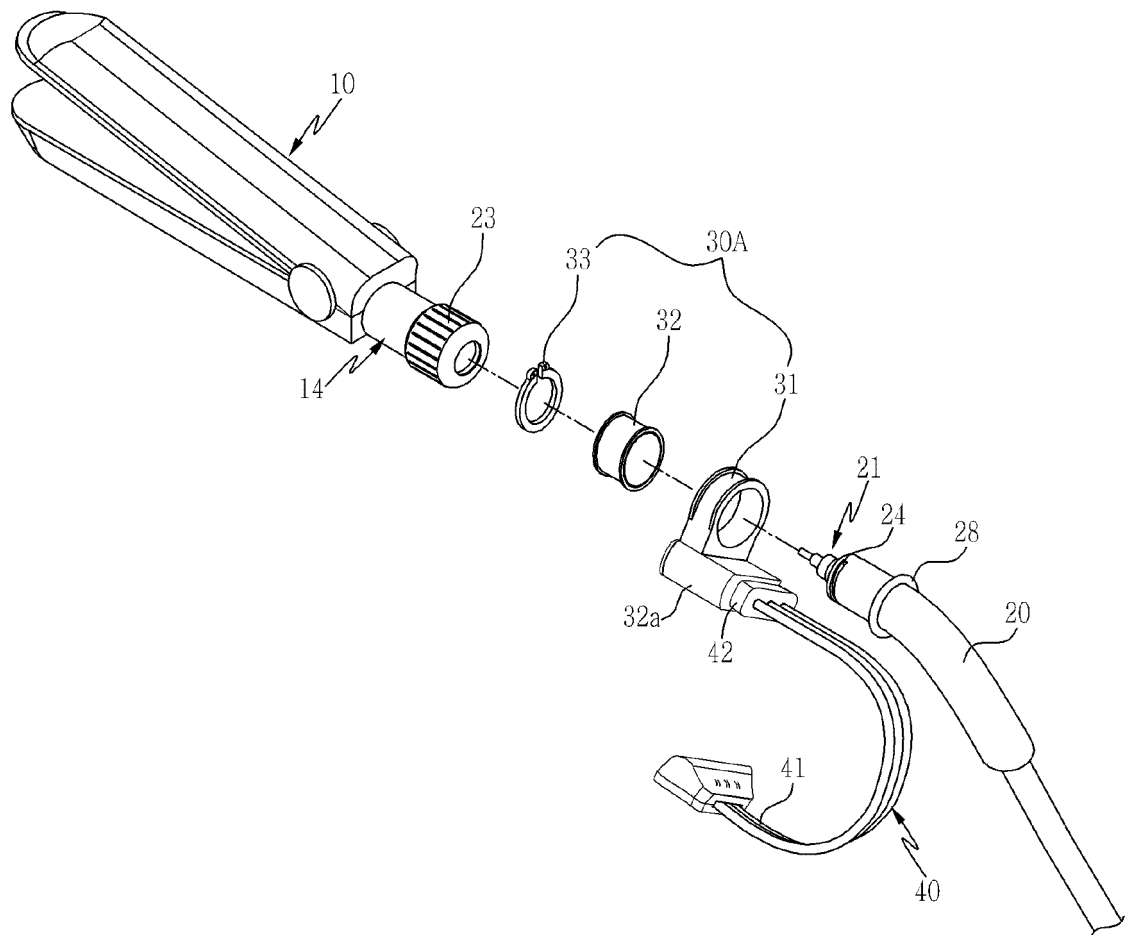


Fig. 6

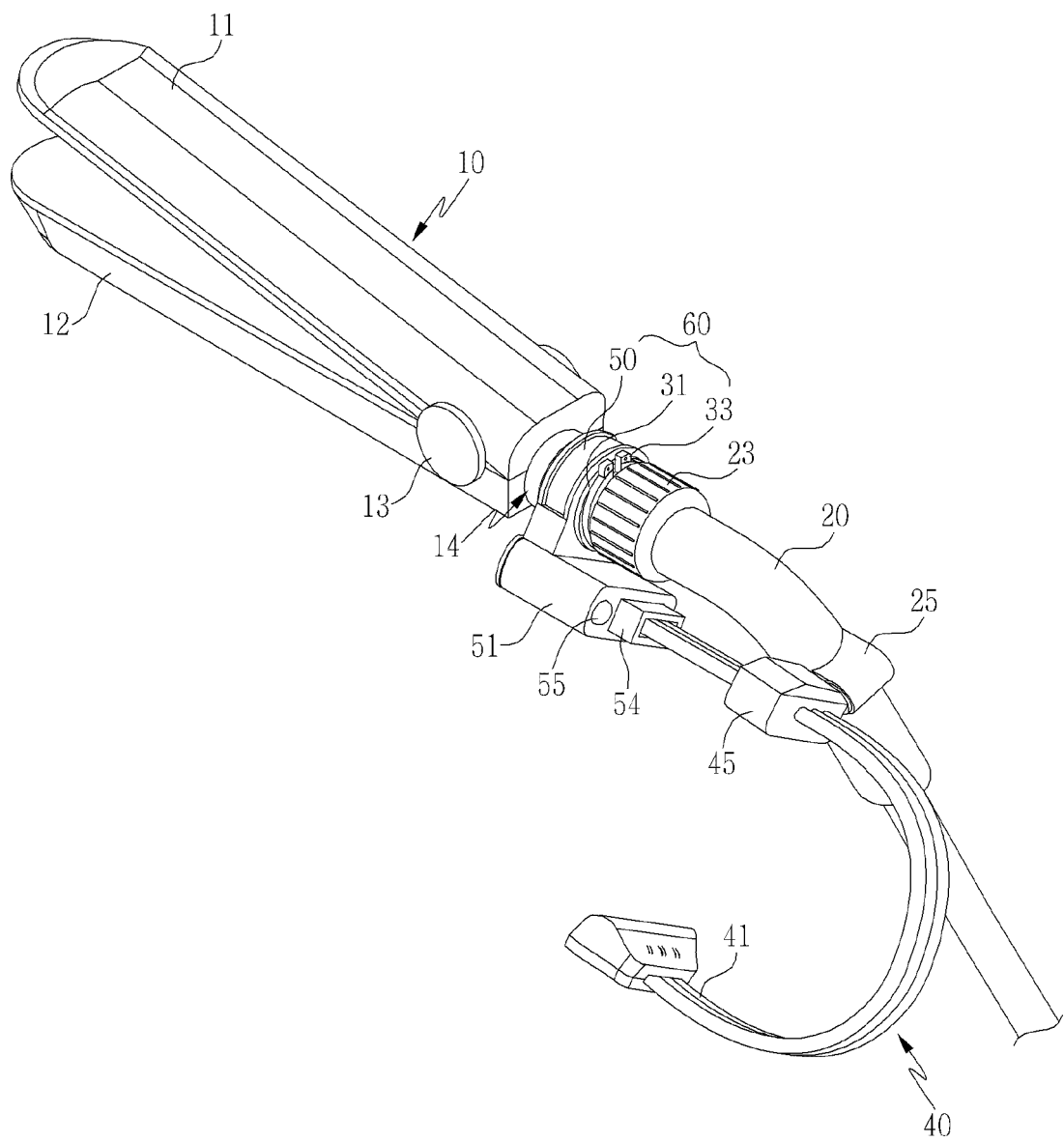


Fig. 7

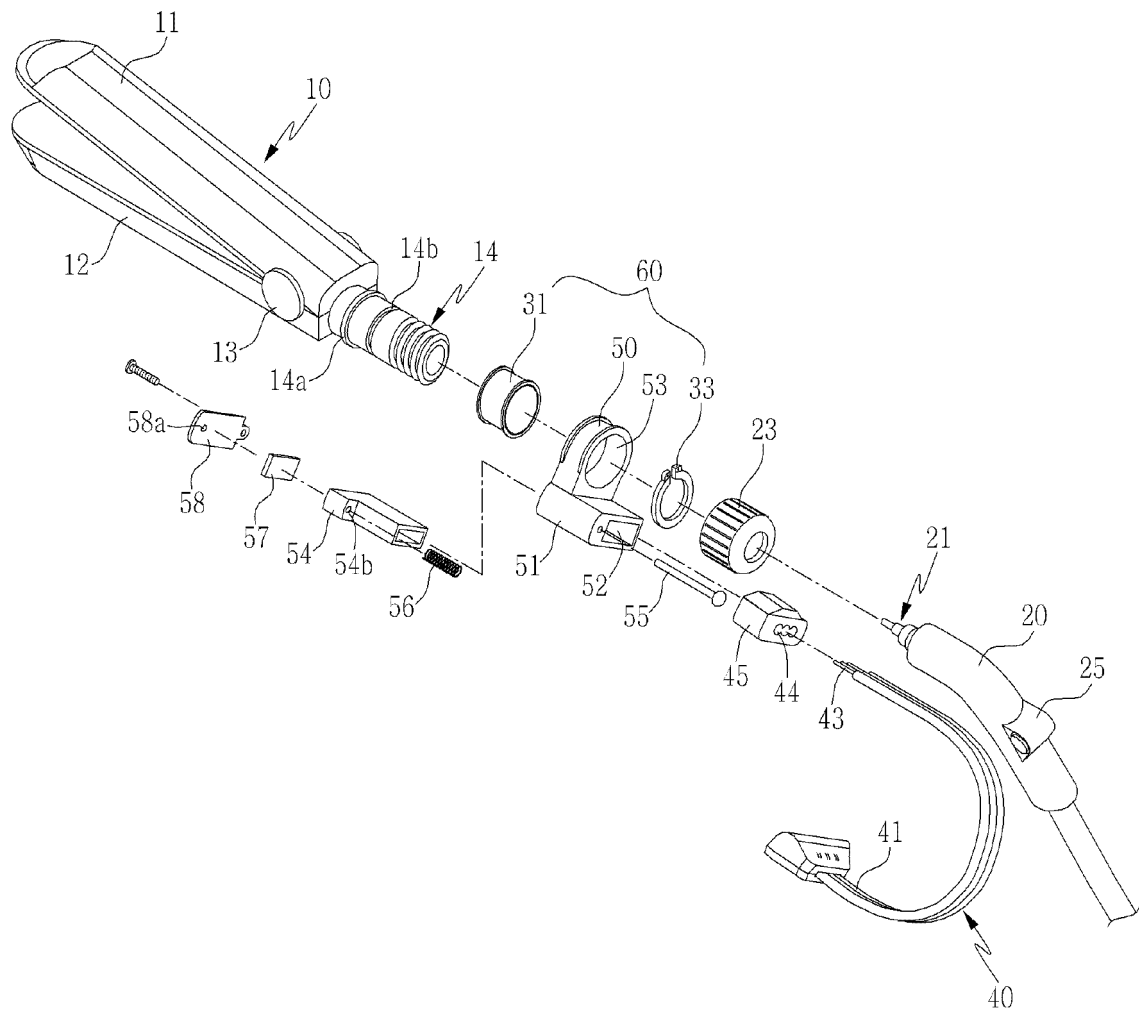


Fig. 8

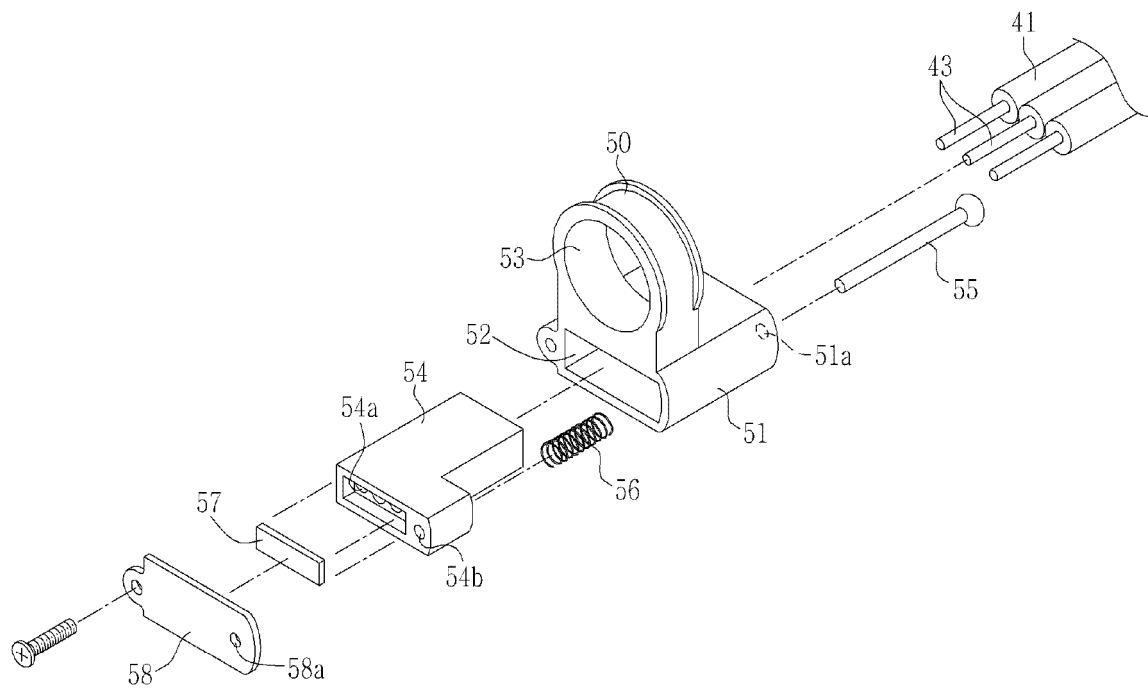
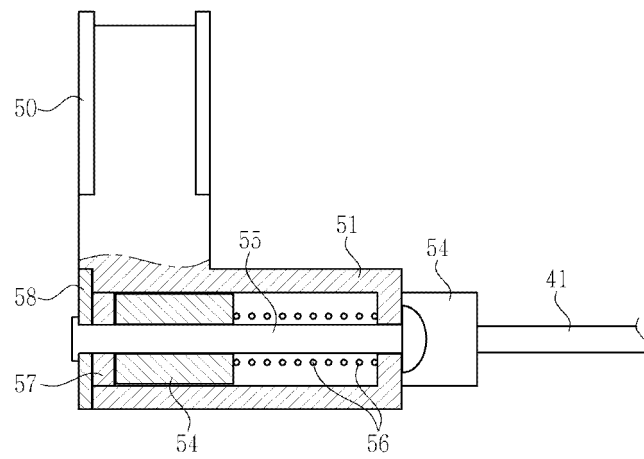
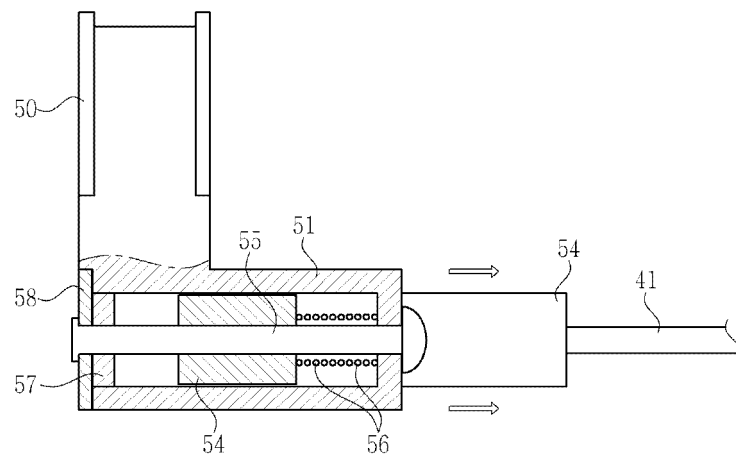


Fig. 9



(a)



(b)

Fig.10

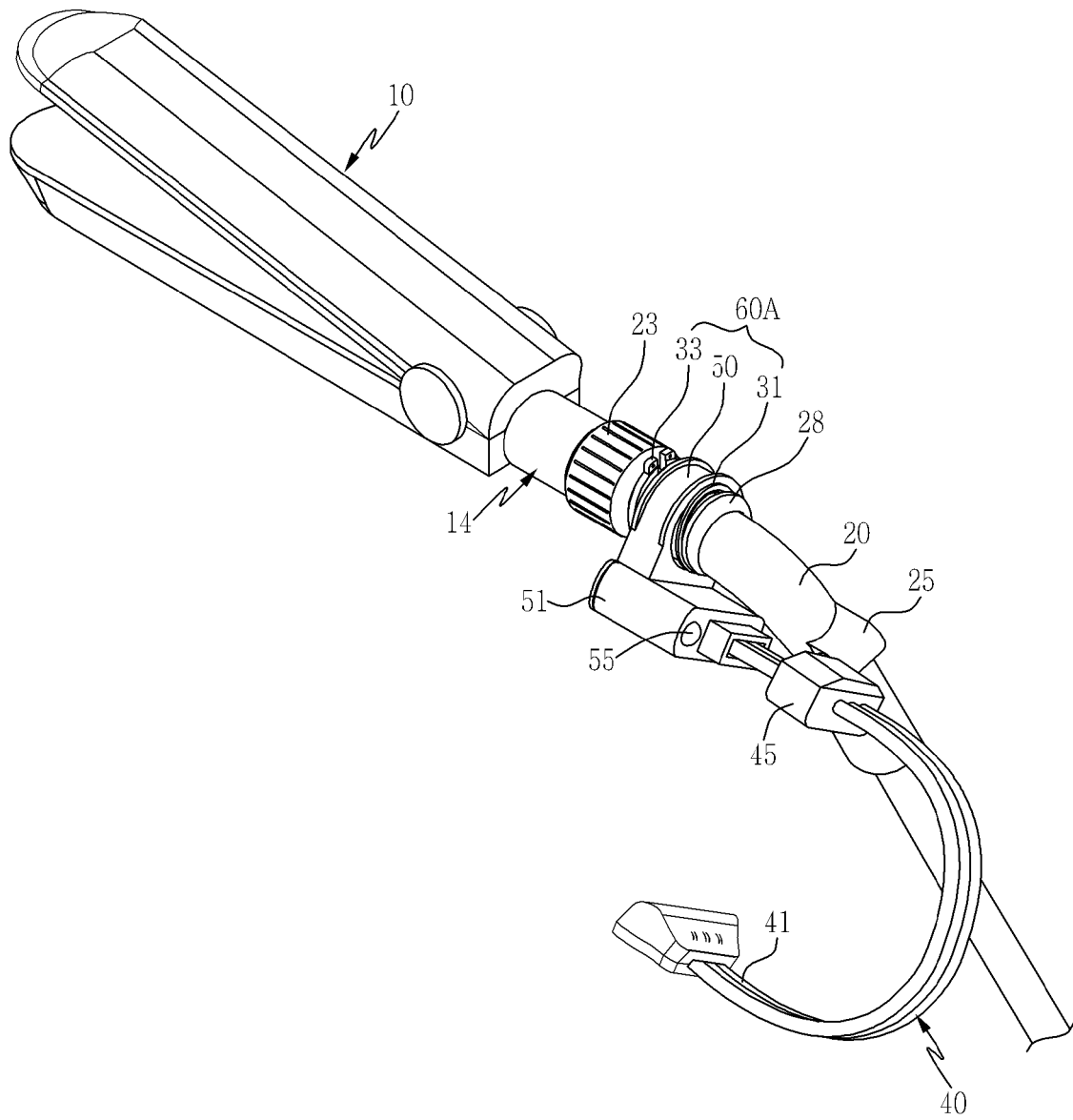


Fig.11

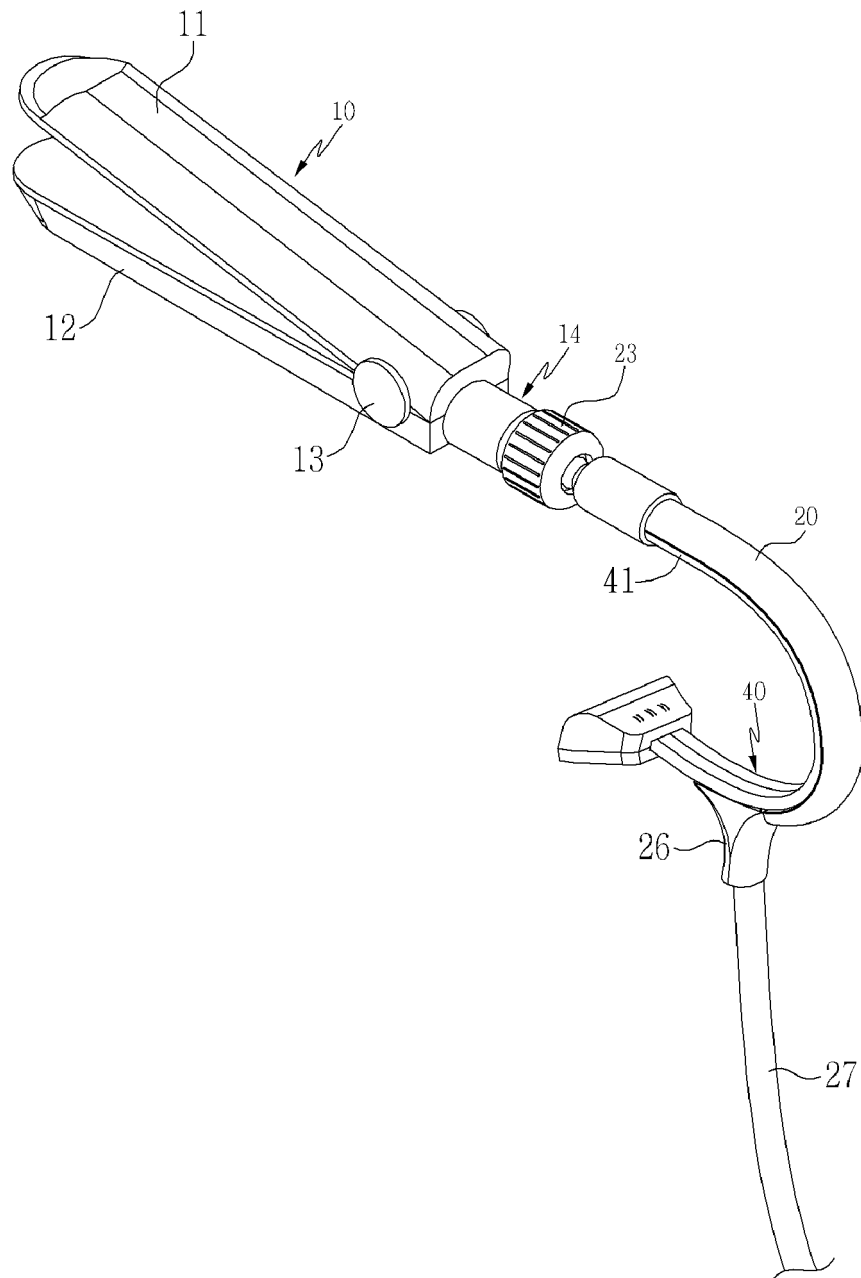


Fig.12

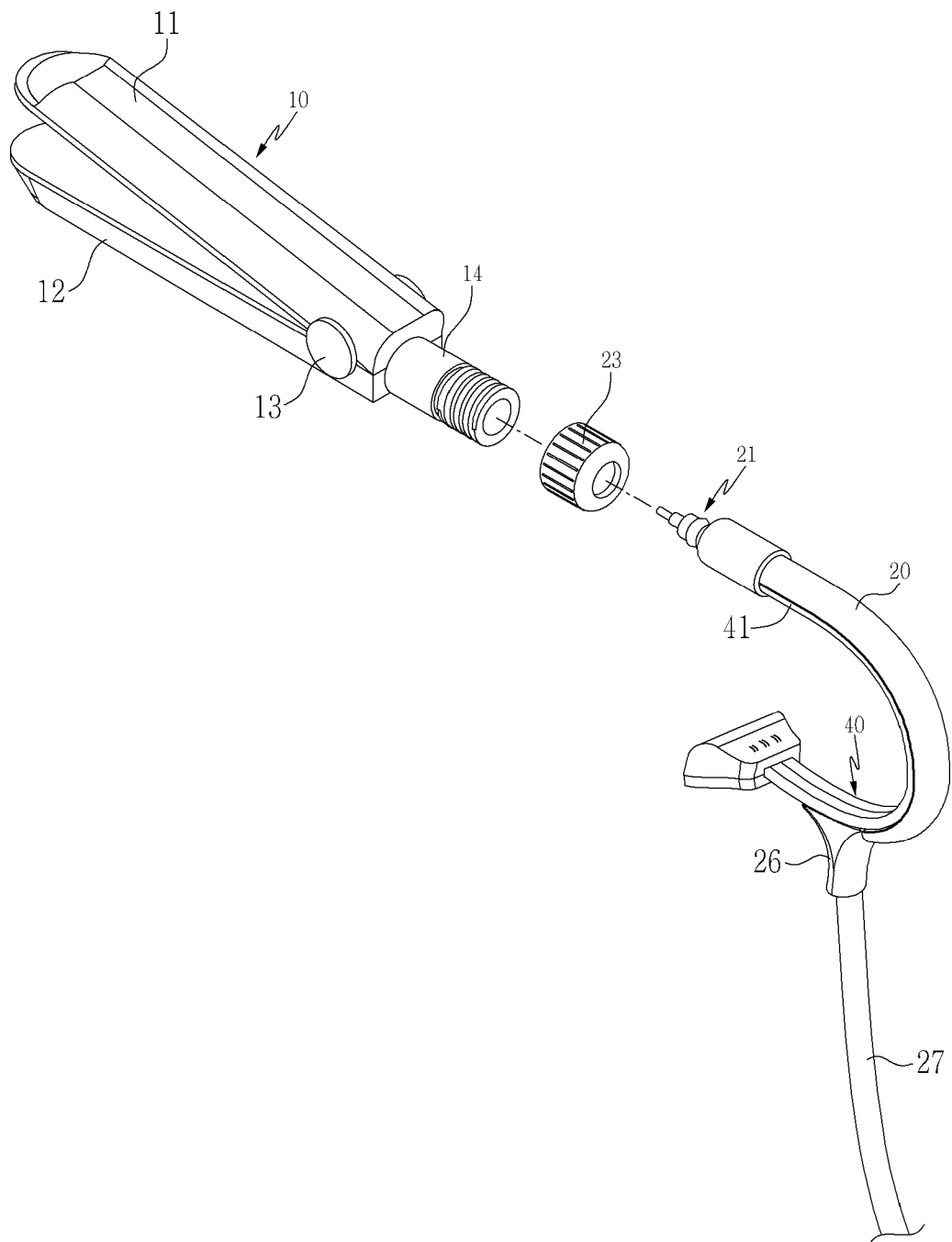
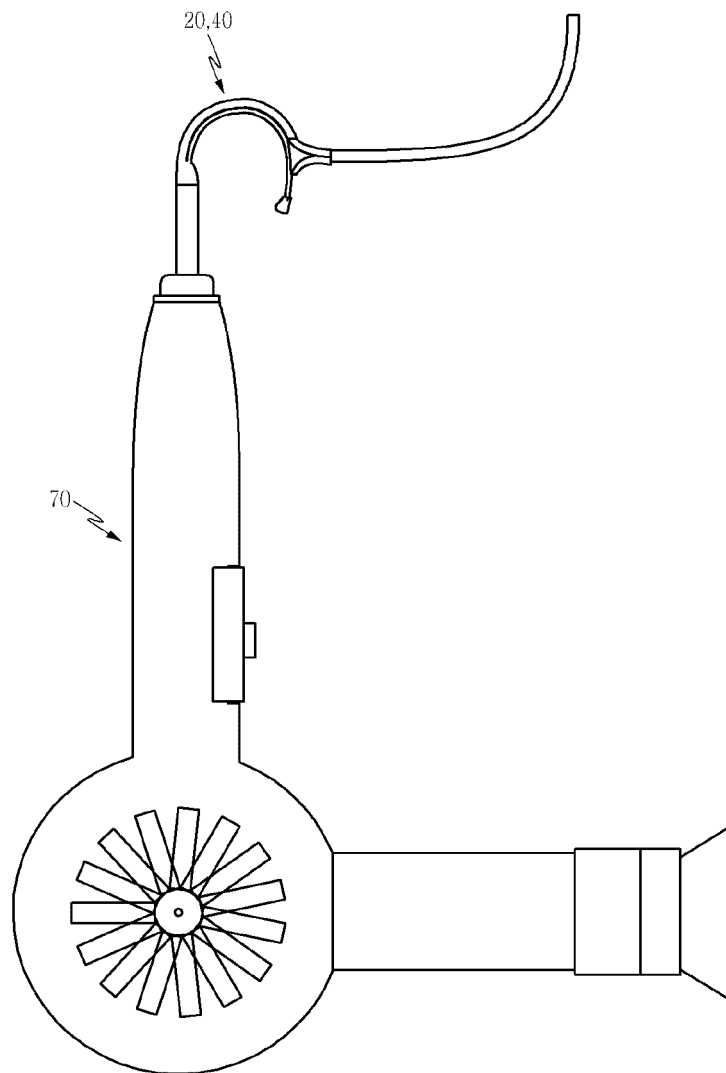


Fig.13



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2016/004105

A. CLASSIFICATION OF SUBJECT MATTER

A45D 1/04(2006.01)i, A45D 1/08(2006.01)i

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 1/04; A45D 1/08; A45D 1/18; A45D 1/00; A45D 1/16; A45D 1/06

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean Utility models and applications for Utility models: IPC as above
Japanese Utility models and applications for Utility models: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS (KIPO internal) & Keywords: curler, hair-iron, hair-iron, hanger, wrist, support, hair heating device

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 10-2015-0029983 A (TURBO ION KOREA INC.) 19 March 2015 See paragraph [0041]; claim 1; figure 1a.	1-14
A	KR 10-2013-0013499 A (YANG, Tae Kwang) 06 February 2013 See the entire document.	1-14
A	JP 2009-539417 A (HANJIPACK COMPANY LTD.) 19 November 2009 See the entire document.	1-14
A	JP 2012-157593 A (HITACHI MAXELL LTD.) 23 August 2012 See the entire document.	1-14
A	KR 10-2007-0109010 A (SONG, Woong - Boo) 15 November 2007 See the entire document.	1-14
PX	KR 10-1581442 B1 (KIM, Chan Soo) 12 January 2016 Claims 1-14.	1-14

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

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"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

"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

25 AUGUST 2016 (25.08.2016)

Date of mailing of the international search report

26 AUGUST 2016 (26.08.2016)

Name and mailing address of the ISA/KR

 Korean Intellectual Property Office
Government Complex-Daejeon, 189 Seonsa-ro, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Telephone No.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR2016/004105

Patent document cited in search report	Publication date	Patent family member	Publication date
KR 10-2015-0029983 A	19/03/2015	KR 10-1506086 B1	26/03/2015
KR 10-2013-0013499 A	06/02/2013	NONE	
JP 2009-539417 A	19/11/2009	AU 2006-338361 A1	23/08/2007
		EP 1983858 A1	29/10/2008
		JP 4859934 B2	25/01/2012
		KR 10-0733062 B1	27/06/2007
		KR 20-0420637 Y1	04/07/2006
		US 2010-0212684 A1	26/08/2010
		WO 2007-094550 A1	23/08/2007
JP 2012-157593 A	23/08/2012	JP 5647911 B2	07/01/2015
KR 10-2007-0109010 A	15/11/2007	NONE	
KR 10-1581442 B1	12/01/2016	NONE	

Form PCT/ISA/210 (patent family annex) (January 2015)