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Remarks:
Amended claims in accordance with Rule 137(2) EPC.

(54) **Hair curling tong**

(57) Hair curling tong (1) with a fixed handle (2) and a heated tube body (12) fixed thereto provided with a clamp (17) that is fixed in a tilting way to the curling tong (1) and can be tilted between a closed position wherein the clamp (17) is held in contact with the tube body (12)

by means of a spring (18) activated by a button (20) and an open position wherein the clamp is tilted away from the tube body (12), **characterized in that** the clamp (17) is fixed in a rotatable way to the curling tong (1) by means of a ring (10) which is rotatable over 360° around the longitudinal axis (X-X') of the tube body (12).

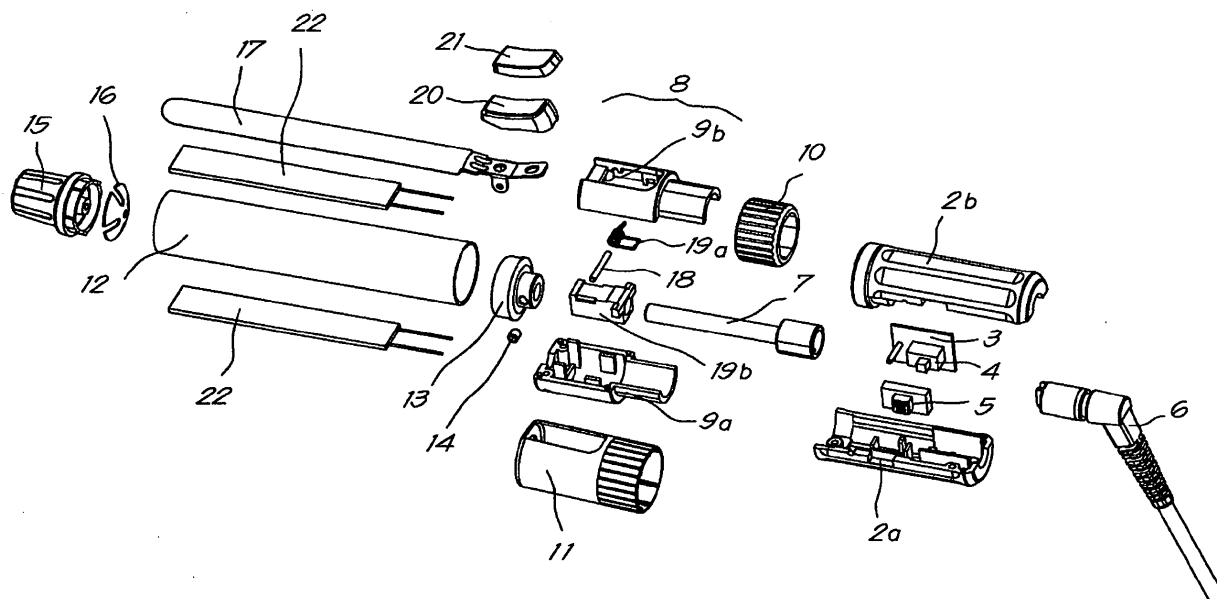


Fig. 2

Description

[0001] The present invention relates to a hair curling tong, of a specific design.

[0002] Traditionally electrical hair curling tongs comprise a tube body that can be heated, equipped with a movable clamp, to grasp a lock of hair between the tube body and the clamp and hold it while the curling tong is rotated to wind the hair in a curly shape after a few moments of heating the hair. The lock of hair is then released, now in a curly shape.

[0003] A disadvantage of this kind of traditional electrical hair curling tongs is that the complete curling tong needs to be rotated, which makes it difficult to hold the curling tong in a fixed position and to avoid burns to the head skin by the heated tube body.

[0004] Another disadvantage of traditional curling tongs is that the electric cord is rotated also with ensuing torque on the cord, and with hindrance to the rotational movement of the curling tong.

[0005] Another disadvantage of traditional curling tongs is that they cause strain in the arm of the operator, due to the rotation that the entire curling tong needs to make.

[0006] It is therefore an objective of the invention to provide a solution to one or more of the above-mentioned disadvantages.

[0007] To this end the present invention provides a hair curling tong with a fixed handle and a heated tube body fixed thereto provided with a clamp that is fixed in a tilting way to the curling tong and can be tilted between a closed position wherein the clamp is held in contact with the tube body by means of a button activated spring and an open position wherein the clamp is tilted away from the tube body, **characterized in that** the clamp is fixed in a rotatable way to the curling tong by means of a ring which is rotatable over 360° around the longitudinal axis of the tube body.

[0008] An advantage of such a curling tong is that the complete curling tong no longer needs to be rotated, which makes it easier to hold the curling tong in a fixed position and to avoid burns to the head skin by the heated tube body.

[0009] Another advantage of such a curling tong is that the electrical connection cord is no longer rotated while curling the hair and thus torque on the cord is avoided, and so is hindrance by the cord to the rotational movement of curling the hair.

[0010] Yet another advantage of such a curling tong is that it no longer causes strain in the arm of the operator, since the entire curling tong does not have to be rotated anymore.

[0011] Preferably, the ring is realized as a bush with a cylindrical grip, situated adjacent to the fixed handle and rotatable with respect to the fixed handle by fingers of the same hand that holds the fixed handle.

[0012] The advantage of the cylindrical grip is that it can be rotated by two fingers and that the movements

needed to curl the hair are minimal, while the curling tong can be held steady with the same hand. In this way, strain in the hand and arm of the operator is avoided, and the curling operation is speeded up and moreover the curling operation requires only one hand which means that the other hand is now free for other manipulations.

[0013] The grip is preferably made of a thermally insulating material, such as a silicone.

[0014] Preferably the clamp is made of a metal, or of a synthetic thermally resistant material.

[0015] The advantage of the clamp made in such a material, is that its shape and function are not affected by the heat of the heated tube body.

[0016] Preferably, the clamp can be closed or opened by releasing or pushing a button.

[0017] The advantage of such a button is that the clamp can be closed or opened by the action of the thumb only and that this button can be operated without having to rotate the curling tong.

[0018] In the most preferred embodiment, the heated tube body has a circular cross-section perpendicular to the longitudinal axis.

[0019] The advantage of such a circumference is that curls are obtained with a constant curl radius.

[0020] In another embodiment, the heated tube body surface has a knurled circular cross-section perpendicular to the longitudinal axis so that the tube body surface shows ribs and grooves stretching in the longitudinal axis of the tube.

[0021] The advantage of such a knurled circular cross-section is that curls are obtained with an extra wavy pattern.

[0022] With the intention of better showing the characteristics of the invention, hereafter, as an example without any limitative character, a preferred form of embodiment is described of an improved curling tong, with reference to the accompanying drawings, wherein:

figure 1 schematically and in perspective represents a curling tong according to the invention in a non-used position;

figure 2 represents the curling tong in an exploded view;

figures 3 and 4 illustrate the use of the curling tong of figure 1;

figure 5 shows a thermally insulating mat to support the curling tong of figure 1.

[0023] The curling tong 1 shown in figures 1 and 2 comprises a fixed handle 2 consisting of two parts 2a and 2b, between which is held a PCB board 3 with a switch 4 and a switch cover 5 linked to an electrical cord 6, and is also held one end of a connect axis 7, on which a rotatable element 8 is mounted carrying two halves 9a, 9b of a bush 9, held together by a ring 10 and by a bush shaped cover 11.

[0024] On the connect axis 7 a tube body 12 is further fixed by means of a screw connector 13, that is fixed to

the tube body by means of a small locking screw 14. The tube body 12 comprises two heating elements 22 and the tube body 12 is capped at its end with a tip cover 15 with its fixing pad 16.

[0025] The bush 9 formed by two half bushes 9a,9b together with the bush shaped cover 11 constitute a rotatable element 8 on which the clamp 17 is fixed. A turning spindle 18 at the base of the clamp 17 allows the clamp 17 to tilt from a closed position in contact with the tube body 12 to an open position whereby the clamp 17 is tilted away from the tube body 12.

[0026] The clamp 17 is held in a closed position by means of a spring 19a with its spring fixer 19b, mounted between the base of the clamp 17 and the rotatable element 8 on which the clamp is fixed. The clamp 17 can be opened with a button 20 covered with a silicone button cover 21.

[0027] The heating elements 22 are connected to the main supply by means of the electrical cord 6.

[0028] The use of the curling tong according to the invention is simple and straightforward.

[0029] After connecting the tong 1 to an electric power source by means of the electrical cord 6, the heating of the tube body 12 is switched on by the switch 4 on the fixed handle 2.

[0030] The clamp 17 is tilted upwards as shown by arrow A in figure 3 by pressing the button 20 in direction B in figure 3, in order to overcome the action of spring 19a, and a lock of hair is inserted between the clamp 17 and the tube body 12, after which the button 20 is released so that the clamp 17 is closed due to the action of the spring 19a.

[0031] The clamp 17 is now rotated around the longitudinal axis X-X' of the tube body 12 by rotating the ring 10 between thumb and index finger. During this rotation the clamp 17 is held in close contact with the tube body 12 by means of the spring 18 and is revolved around the tube body 12 so as to wind the lock of hair 23 around the heated tube body 12, while holding the fixed handle 2 and the tube body 12 attached to it in a fixed position.

[0032] The ring 10 can rotate 360° and more so that when the ring 10 is rotated, the lock of hair 23 is curled around the tube body 12 in multiple windings as shown in figure 4, during which the lock of hair 23 is heated by the tube body 12 which results in fixing a curly pattern in the lock of hair 23.

[0033] After the heated tube body 12 has generated curls in the lock of hair 23, the clamp 17 is tilted up again by pressing the button 20, thereby releasing the curled lock of hair 23 without moving the tube body 12 itself.

[0034] Contrary to the embodiment shown in figures 1 to 4, whereby the tube body 12 is of a cylindrical shape with a circular cross-section perpendicular to its longitudinal axis, it is not excluded to realize embodiments with different shapes of tube bodies e.g. with a conical shape or a tube body 12 with a knurled circular cross-section with ribs and grooves stretching in the longitudinal direction X-X' of the tube body 12, or with any other shape

deemed useful for the heated tube body 12.

[0035] The heated tube body 12 with a circular cross-section will result in evenly curled hair, while a knurled circular cross-section will result in a extra wavy curl of the treated hair.

[0036] The bush shaped cover 11 capable of rotating the clamp 17, can be realized in a skid-proof material, such as a silicone or in other materials, with a finishing that is not smooth.

[0037] Although the embodiment described is provided with a ring 10 which is freely rotatable by hand, it is not excluded to provide the curling tong 1 with driving means to rotate the ring 10 supporting the clamp 17.

[0038] The invention also concerns an accessory that can be used with the curling tong 1. The accessory is represented in figure 5 in the form of a thermally insulating mat 24, equipped with supports 25 for supporting the curling tong 1.

[0039] At one edge the mat 24 is equipped with two sideways extending flaps 26a,26b while this edge together with the flaps 26a,26b are provided with one part of a zipper 27a that can cooperate with a second part of a zipper 27b that is provided on the remaining part of the edges of the insulating mat 24.

[0040] The purpose of this insulating mat 24 is twofold.

[0041] A first function of the insulating mat 24 is to be able to support the curling tong 1 so that when the tong 1 is hot, the underlying structure is protected against burns.

[0042] A second function of the insulating mat 24 is that this mat can be folded around the tong 1 to create a thermally protective case 28 that can be closed by the above mentioned zipper 27 and that allows to move the curling tong without getting burnt.

[0043] The present invention is in no way limited to the form of embodiment described by way of an example and represented in the figures, however, such an improved curling tong can be realized in various forms without leaving the scope of the invention.

Claims

1. Hair curling tong (1) with a fixed handle (2) and a heated tube body (12) fixed thereto provided with a clamp (17) that is fixed in a tilting way to the curling tong (1) and can be tilted between a closed position wherein the clamp (17) is held in contact with the tube body (12) by means of a spring (18) activated by a button (20) and an open position wherein the clamp is tilted away from the tube body (12), **characterized in that** the clamp (17) is fixed in a rotatable way to the curling tong (1) by means of a ring (10) which is rotatable over 360° around the longitudinal axis (X-X') of the tube body (12).
2. Hair curling tong (1) according to claim 1, **characterized in that** the ring (10) is realized as a bush (9)

with a cylindrical grip, situated adjacent to the fixed handle (2) and can be rotated with respect to the fixed handle (2) by fingers of the same hand that holds the fixed handle (2).

3. Hair curling tong (1) according to claim 2, **characterized in that** the ring (10) and/or the cylindrical grip is made of a thermally insulating material. 5
4. Hair curling tong (1) according to claim 3, **characterized in that** the ring and/or the cylindrical grip is made of a silicone. 10
5. Hair curling tong according to any one of the preceding claims, **characterized in that** the clamp (17) is made of a metal. 15
6. Hair curling tong (1) according to any one of the preceding claims, **characterized in that** the clamp (17) is made of a thermally resistant synthetic material. 20
7. Hair curling tong (1) according to any one of the preceding claims, **characterized in that** the clamp (17) can be locked or unlocked by releasing or pushing a button (20). 25
8. Hair curling tong (1) according to any one of the preceding claims, **characterized in that** the heated tube body (12) has a cross-section perpendicular to its longitudinal axis (X-X') that describes a circle. 30
9. Hair curling tong (1) according to any one of the preceding claims, **characterized in that** the heated tube body (12) has a cross-section perpendicular to its longitudinal axis (X-X') that describes a knurled circle. 35
10. Hair curling tong (1) according to any one of the preceding claims, **characterized in that** the bush shaped cover (11) is realized in a skid-proof material. 40
11. Hair curling tong (1) according to claim 10, **characterized in that** the bush shaped cover (11) is realized in a silicone material. 45
12. Hair curling tong (1) according to claim 10, **characterized in that** the bush shaped cover (11) is realized with a finishing that is not smooth. 50
13. Hair curling tong (1) according to any one of the preceding claims, **characterized in that** it is stored in an isothermal case (28), which also serves as a protective mat (24) with inbuilt supports (25) for the tong. 55

Amended claims in accordance with Rule 137(2) EPC.

1. Hair curling tong (1) with a fixed handle (2) and a heated tube body (12) fixed thereto provided with a clamp (17) that is fixed in a tilting way to the curling tong (1) and can be tilted between a closed position wherein the clamp (17) is held in contact with the tube body (12) by means of a spring (18) activated by a button (20) and an open position wherein the clamp is tilted away from the tube body (12), **characterized in that** the clamp (17) and only the clamp (17) is fixed in a rotatable way to the curling tong (1) by means of a ring (10) which is concentrically rotatable over 360° around the longitudinal axis (X-X') of the tube body (12).

2. Hair curling tong (1) according to claim 1, **characterized in that** the ring (10) is realized as a bush (9) with a cylindrical grip, situated adjacent to the fixed handle (2) and can be rotated with respect to the fixed handle (2) by fingers of the same hand that holds the fixed handle (2).

3. Hair curling tong (1) according to claim 2, **characterized in that** the ring (10) and/or the cylindrical grip is made of a thermally insulating material.

4. Hair curling tong (1) according to claim 3, **characterized in that** the ring and/or the cylindrical grip is made of a silicone.

5. Hair curling tong according to any one of the preceding claims, **characterized in that** the clamp (17) is made of a metal.

6. Hair curling tong (1) according to any one of the preceding claims, **characterized in that** the clamp (17) is made of a thermally resistant synthetic material.

7. Hair curling tong (1) according to claim 1, **characterized in that** the clamp (17) can be locked or unlocked by releasing or pushing a button (20).

8. Hair curling tong (1) according to claim 1, **characterized in that** the heated tube body (12) has a cross-section perpendicular to its longitudinal axis (X-X') that describes a circle.

9. Hair curling tong (1) according to claim 1, **characterized in that** the heated tube body (12) has a cross-section perpendicular to its longitudinal axis (X-X') that describes a knurled circle.

10. Hair curling tong (1) according to claim 1, **characterized in that** it has a bush shaped cover (11) realized in a skid-proof material.

11. Hair curling tong (1) according to claim 10, **characterized in that** the bush shaped cover (11) is realized in a silicone material.

12. Hair curling tong (1) according to claim 10, **characterized in that** the bush shaped cover (11) is realized with a finishing that is not smooth. 5

13. Insulating mat (24), with inbuilt supports (25) for the tong according to claim 1, **characterized in that** it is not only a thermally protective case but is also a protective mat (24) to guard against the heat of the supported tong. 10

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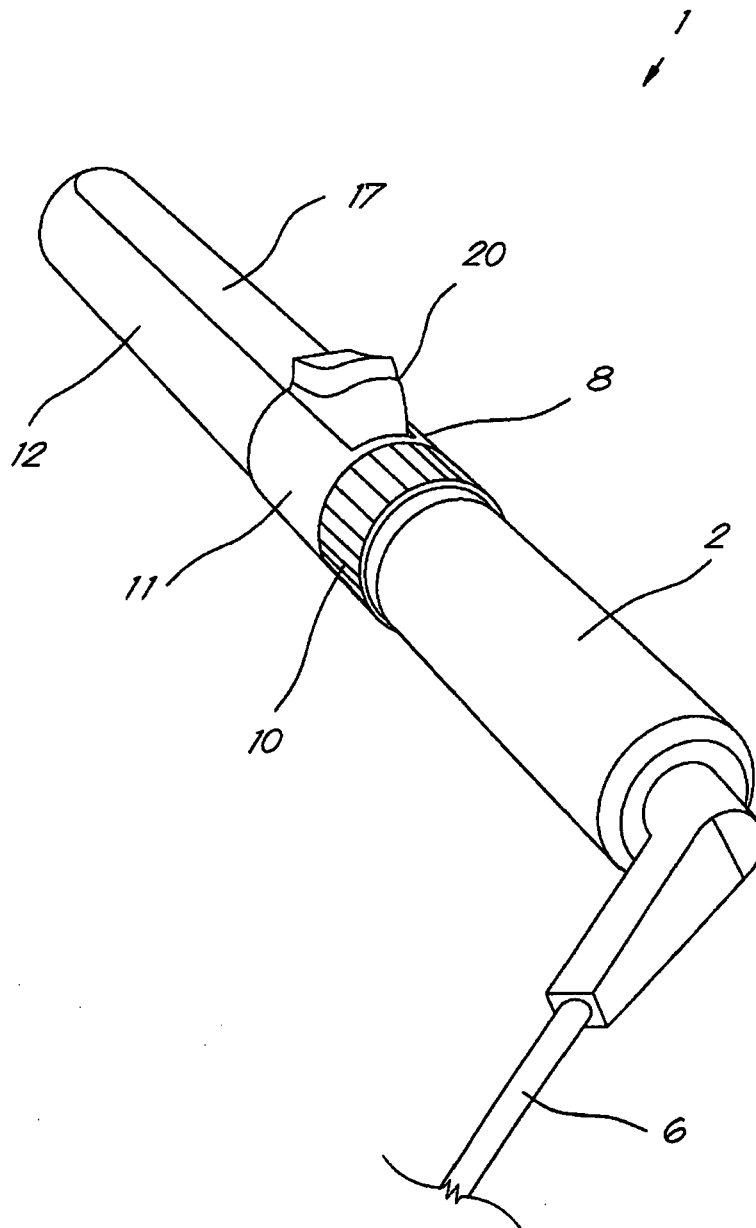


Fig. 1

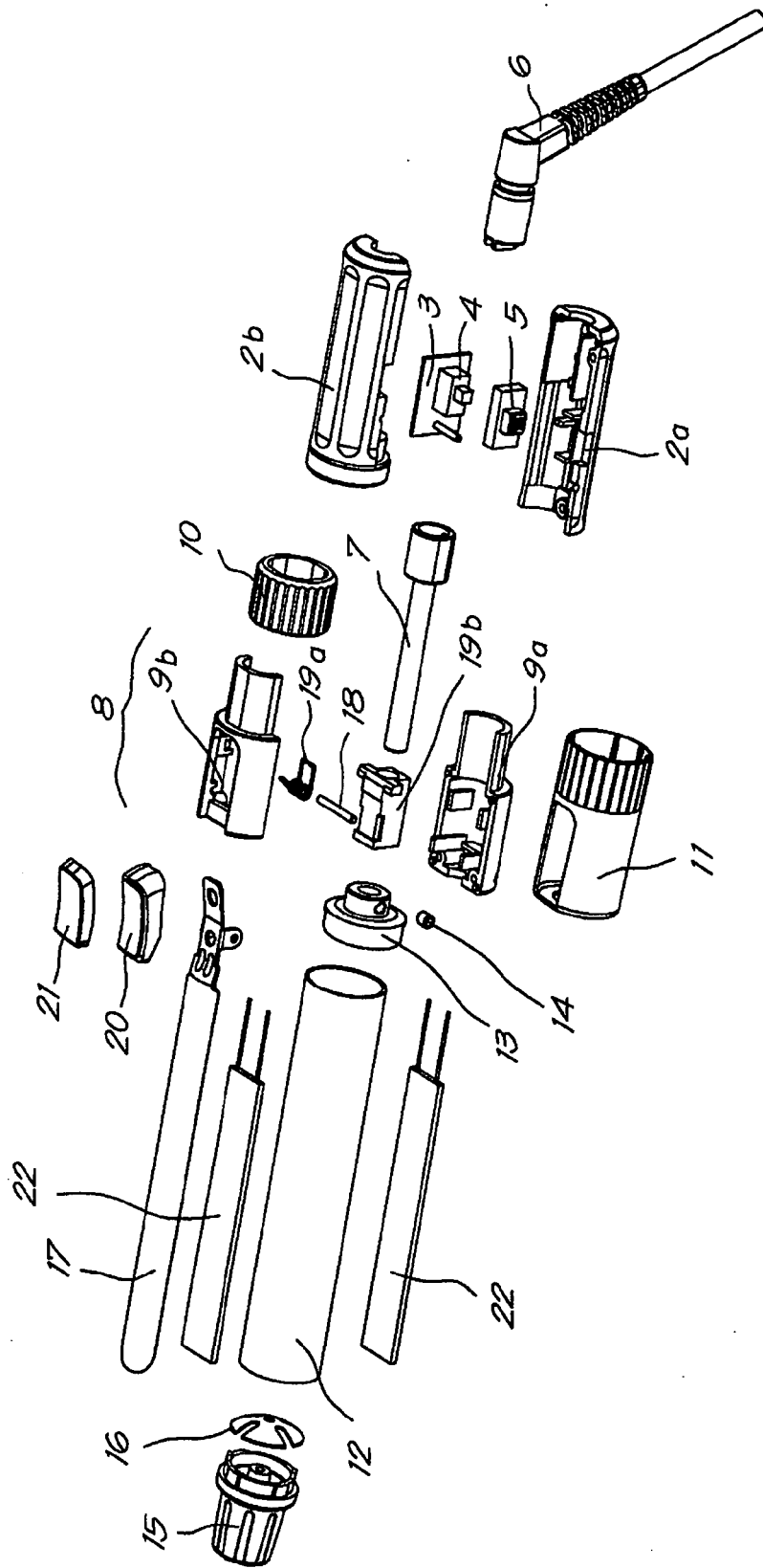


Fig. 2

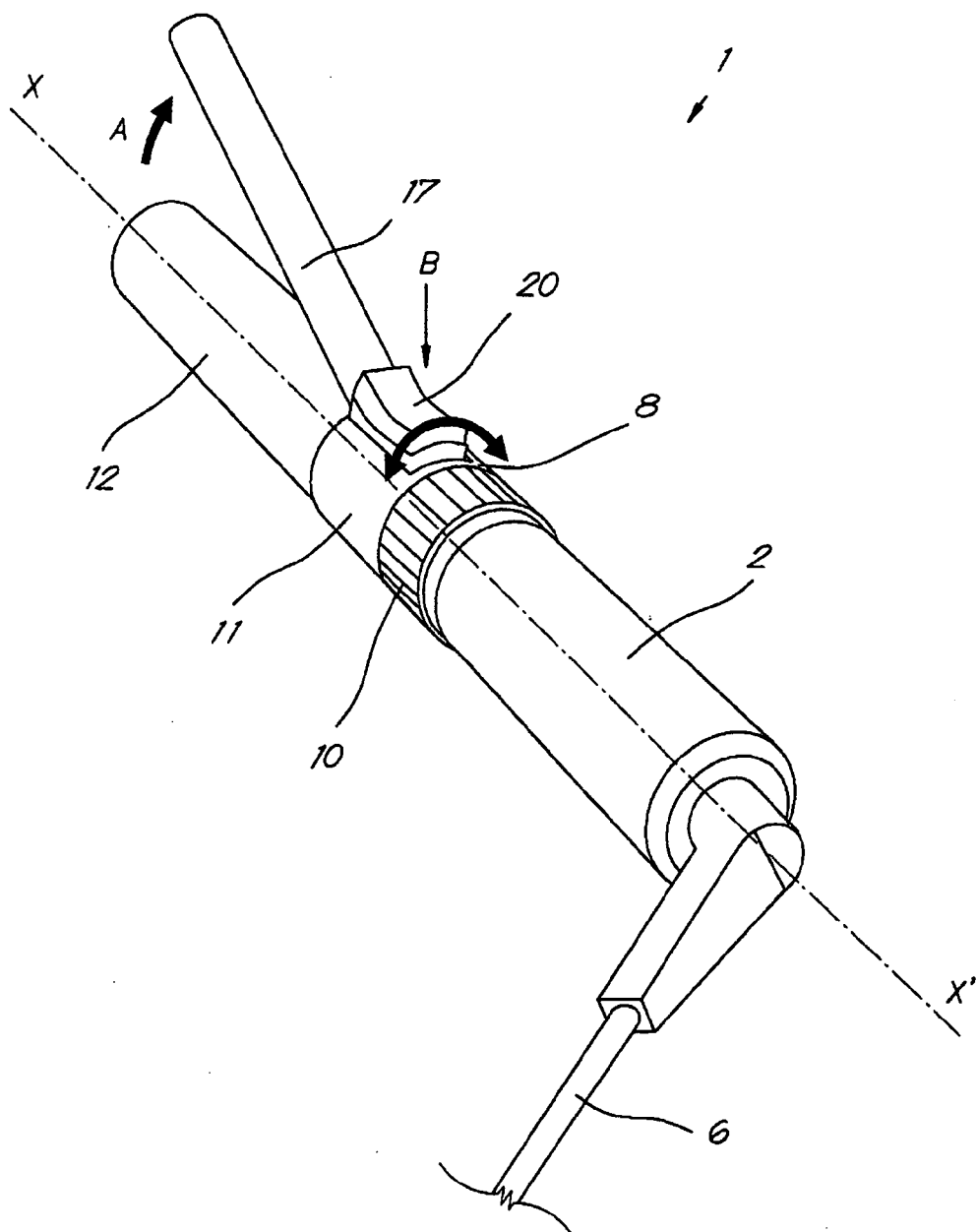


Fig. 3

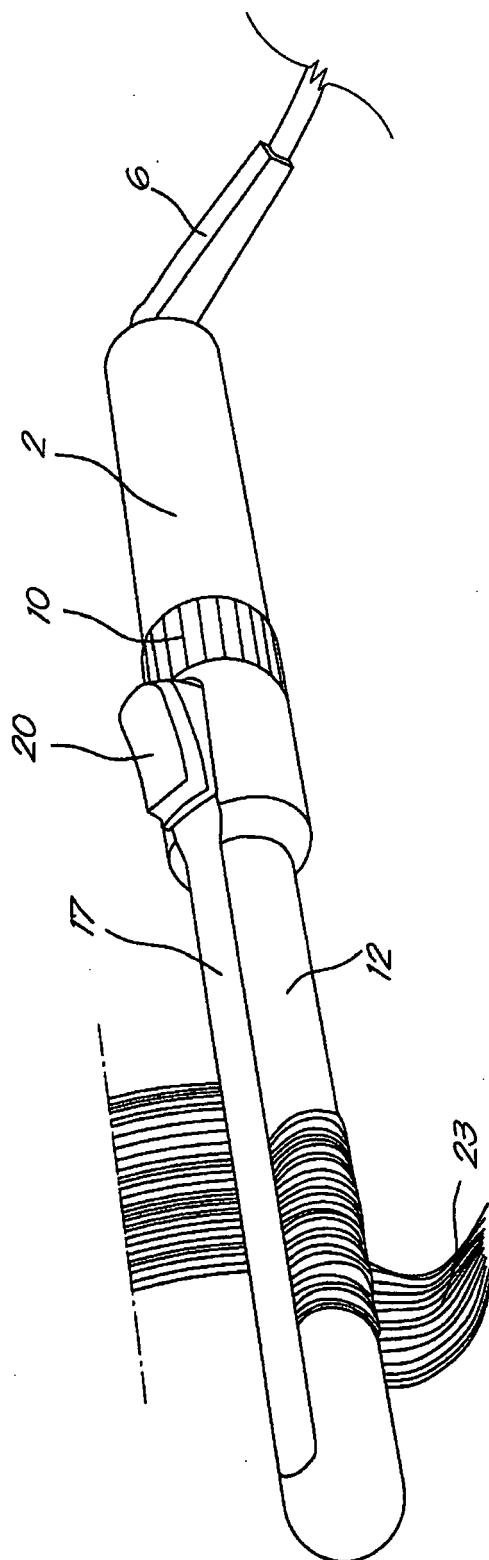


Fig. 4

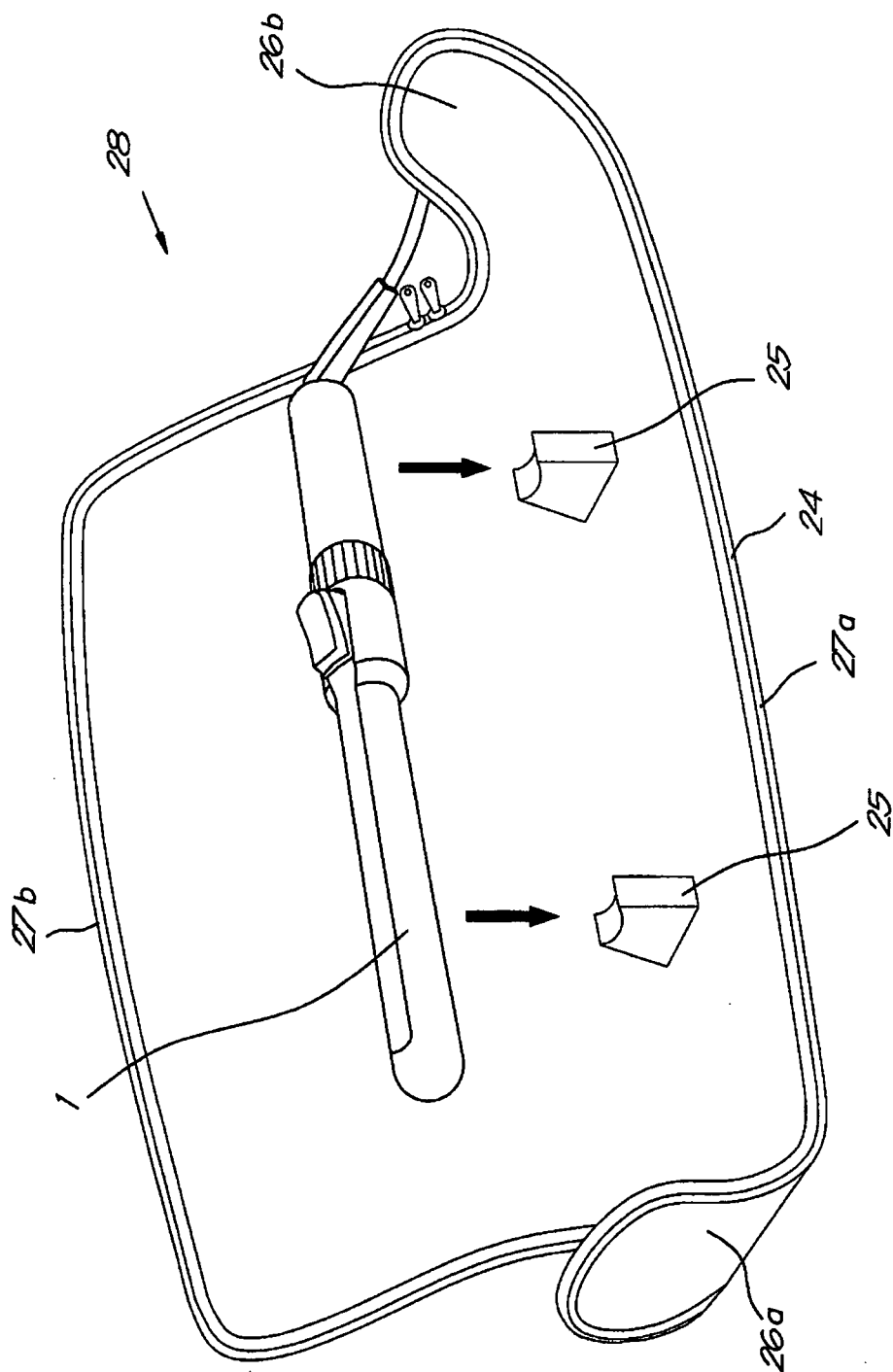


Fig. 5



EUROPEAN SEARCH REPORT

Application Number
EP 09 44 7065

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 4 591 695 A (INOUE TARO [JP]) 27 May 1986 (1986-05-27) * column 1, lines 62-68 * * column 2, lines 1-3,53-56 * * column 3, lines 5-11 * * figures 3,5,7,8 * -----	1-13	INV. A45D1/04 A45D1/10
X	WO 2009/077761 A2 (HOT STIXX LTD [GB]; BENEST ROGER SYDNEY; GILMORE RICHARD) 25 June 2009 (2009-06-25) * page 9, line 2 - page 10, line 1; figures 10,11 * -----	1,3-9,13	
X	US 3 859 497 A (MCNAIR SAMUEL L) 7 January 1975 (1975-01-07) * column 2, line 5 - column 3, line 9; figures 1-4 * -----	1-13	
			TECHNICAL FIELDS SEARCHED (IPC)
			A45D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 16 April 2010	Examiner Mecking, Nikolai
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document	

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 09 44 7065

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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16-04-2010

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