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(56) Documents Cited:
GB 2394656 A
EP 2524618 A1
US 7296580 B1
GB 2241434 A
WO 1995/012996 A1
US 4267851 A

(58) Field of Search:
INT CL **A45D**
Other: **EPODOC, WPI**

(54) Title of the Invention: **Method and apparatus for improving hair rollers**
Abstract Title: **A handle for heating rollers and applying them to the hair**

(57) A handle 10 is used to heat a hair roller 3 and apply it to the hair, thus ensuring that a hot roller 3 does come into contact with the users hands. The handle 10 may have means for rotating the roller, such as an electric motor 8. The roller may be gripped by the handle 10 using sprung rotating latch 5. The heating of the roller 10 may be by induction via copper contacts 4. Heating may begin when the roller 3 is connected to the handle 10 or when a user manually activates the process. The roller may be provided with a clip (13, fig5) which can be pushed down to lock hair between the clip 13 and the roller 3.

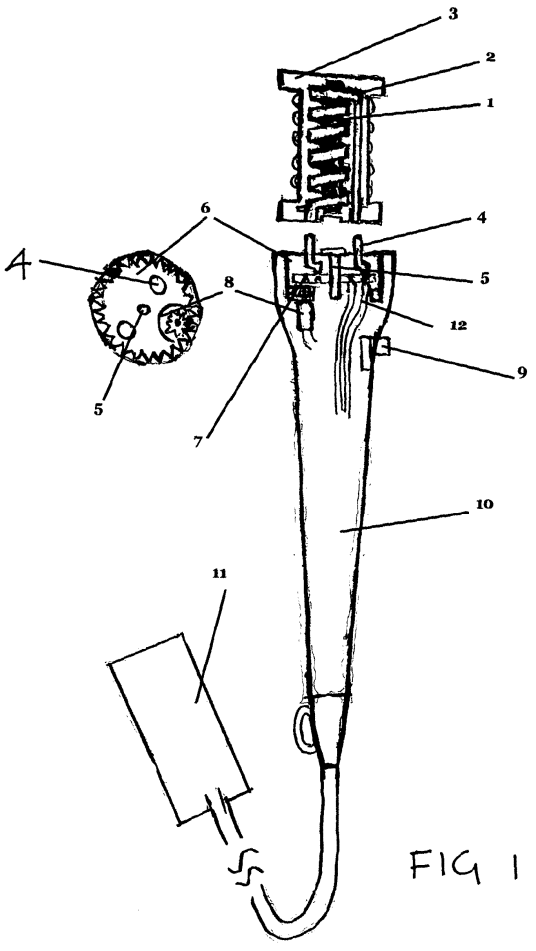

FIG 1

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FIG 1

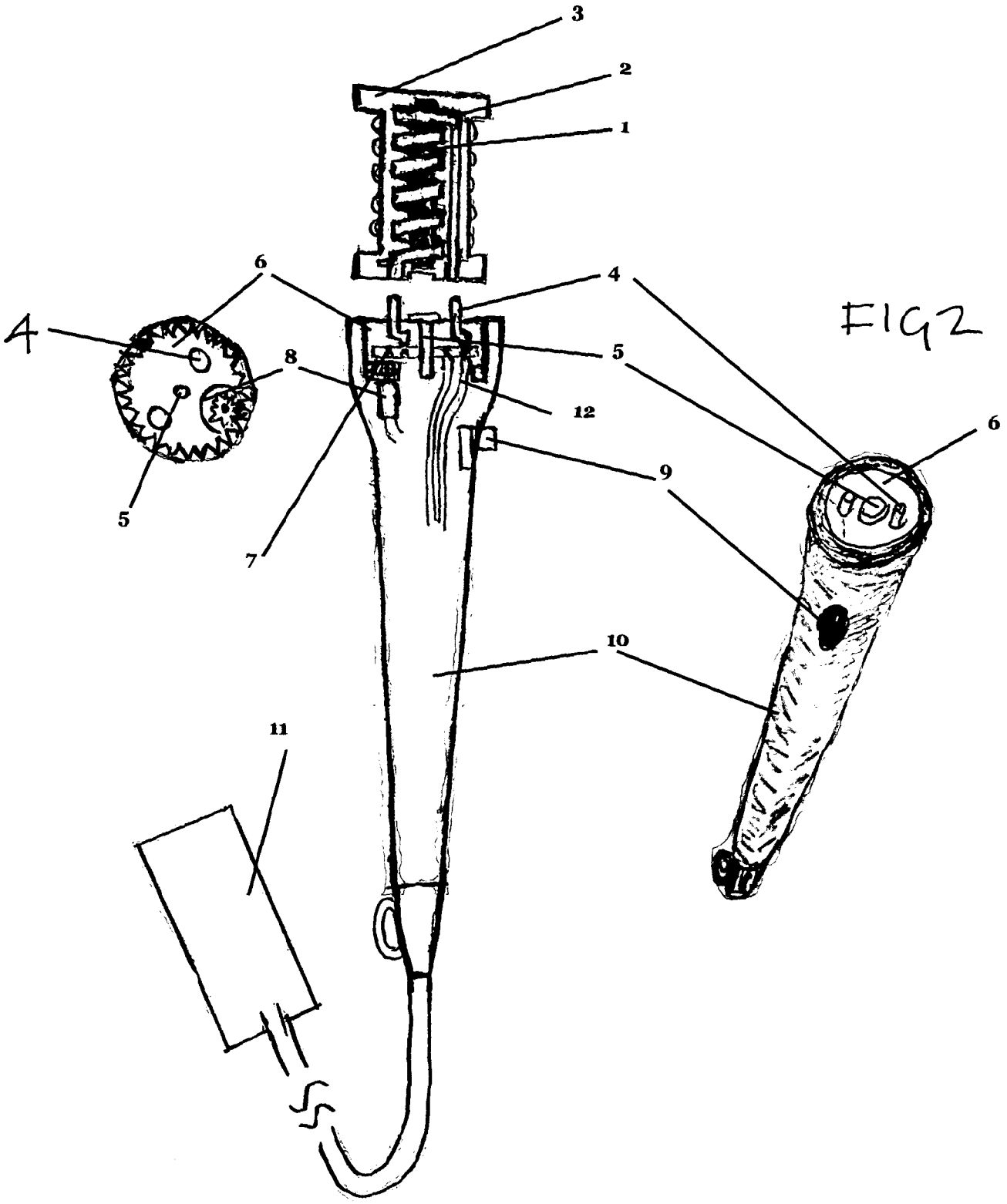


FIG2

FIG 3

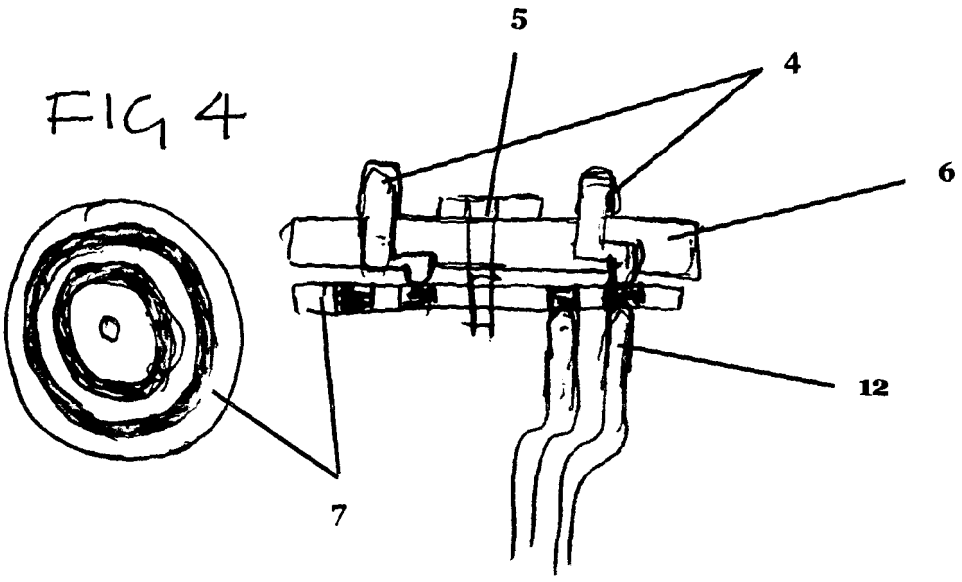


FIG 4

FIG 5

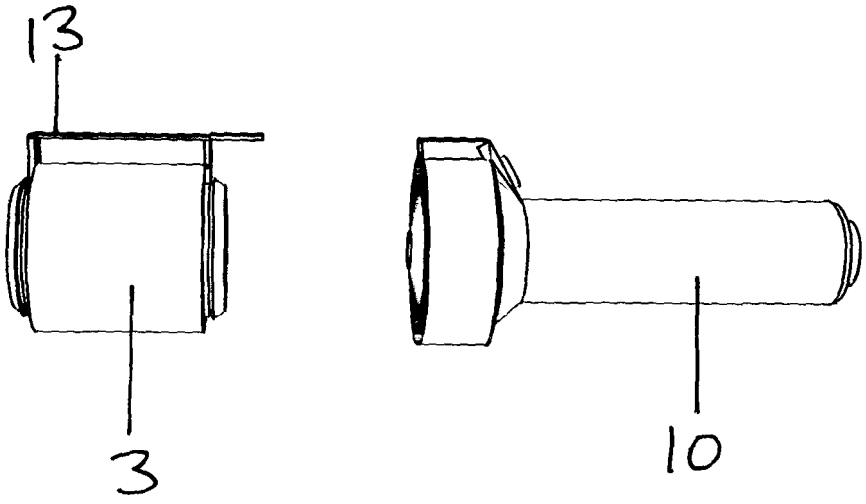


FIG 6

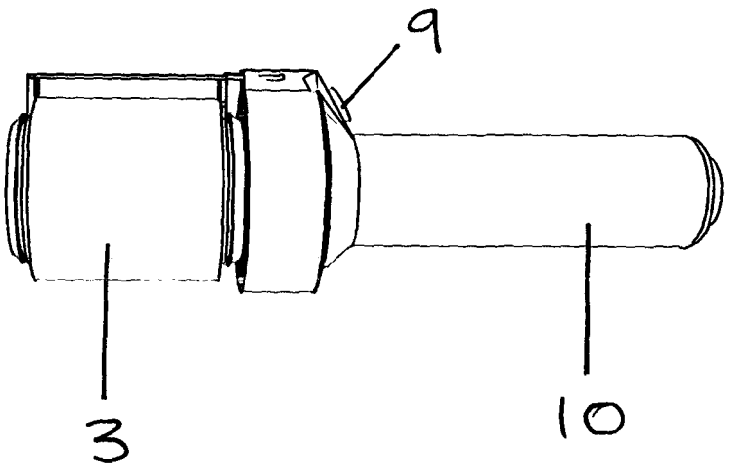


FIG 7

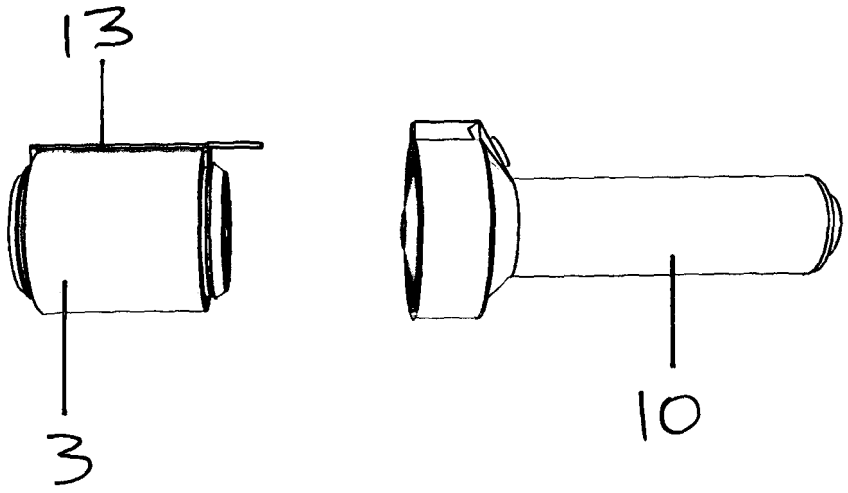
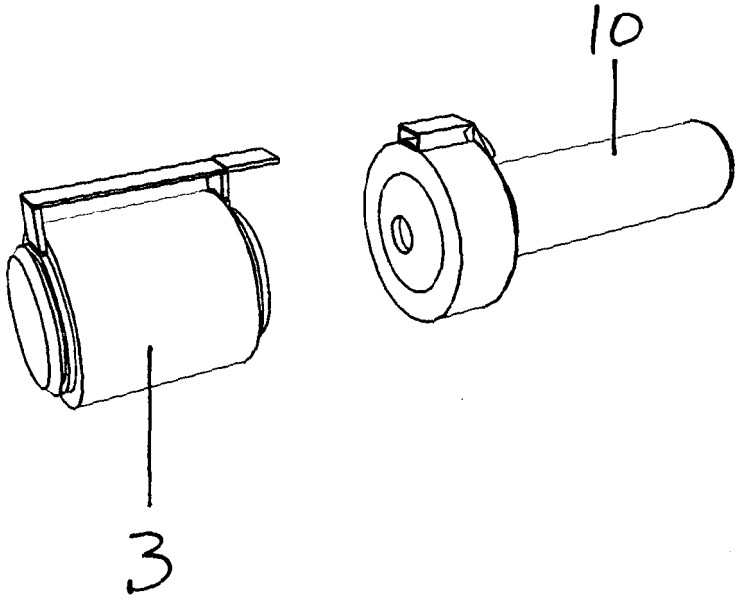


FIG 8



METHOD AND APPARATUS FOR IMPROVING HAIR ROLLERS

Background of the Invention

The present invention relates to a method for improving the application and heating of hair curling rollers.

Hair rollers are difficult to self apply and this task is made even more difficult when the rollers are heated. To ensure the roller will curl the hair satisfactorily it has to reach a temperature of over 100°C. When rollers are heated in a conventional manor they are placed on/in a tray and then handled by the user to apply to the hair. This means that the operator has to apply the roller as quickly as possible to avoid burning their hands and also to avoid the roller cooling before it is inserted. Gloves can be used, however, this restricts the application. Once the roller has been heated it is picked up and held to the hair that requires curling. The user then holds the strands of hair against the roller and rotates it towards the head wrapping the hair round the roller as it rotates. To stop the roller from falling out of the hair a clip is then inserted to keep it in place.

Summary of the Invention

It is an aim of embodiments of the present invention to address the above problems in relation to the handling, application, heating and securing of hair rollers.

In an embodiment of the present invention a handle can be inserted onto the hair roller allowing the user to pick handle it without using their hands. The roller, however, may or may not be hot.

In a further embodiment of the present invention the handle is able to rotate the roller independently from the user. This may or may not be powered by and electric motor.

In a further embodiment of the present invention the roller has a hollow core.

~~In a further embodiment of the present invention the handle extends so~~ that it can be inserted into the hollow core of the roller.

In a further embodiment of the present invention, inserting the handle starts the heating process of the roller.

In a further embodiment of the present invention attaching the handle heats the roller through induction.

In a further embodiment of the present invention the roller has a clip that can be handled by the user and allows the roller to rotate.

In a further embodiment of the present invention the clip can by used to secure the roller into the hair.

In a further embodiment of the present invention the roller is released by pressing a button on the handle.

In a further embodiment of the present invention

Brief Description of Drawings

An example of the invention will now be described by referring to the accompanying drawings.

Referring to figure 1 the drawing shows a cross-section of the handle and roller and a top view of the internal workings of the rotating handle.

Referring to figure 2 the drawing shows a 3D view of the handle.

Referring to figure 3 the drawing shows cross-section closer view of the top of the handle.

Referring to figure 4 the drawing shows a top view of the handle.

Referring to figure 5 the drawing shows a side view of the present invention prior to the roller being attached to the handle.

Referring to figure 6 the drawing shows the roller (1) attached to the handle (2) and the clip inserting into the clip housing.

Referring to figure 7, which shows the clip (3) in the down position.

Referring to figure 8, which shows a 3 dimensional view of the present invention.

Description of Preferred Embodiment

An embodiment of the present invention is now described in greater detail with the use of figures 1 to 8

Figure 1 shows a cross-section of the present invention where (1) is a graphite core and (2) is an insulated copper coil embedded in a silica refractory material. The hair roller (3) is a thermo-set plastic insulator, which can be moulded into different shapes and sizes to suit particular uses. When the roller (3) is placed on the handle (10) the copper coil (2) in the roller (3) makes contact with the copper contacts (4) mounted in the handle (10). A sprung rotating latch (5) clips the roller (3) to the handle (10). This can be released when the button (9) is pressed. The rotating cuff (6) contains reversed gear teeth that link with the internally mounted motor and drive gear (8) so that the roller (3) can be self rotated once the button (9) is pressed and held. An insulating pcb plate (7) that allows current to pass to the copper contacts (4) that induce induction , heating the roller (3) while the rotating cuff (6) simultaneously rotates the roller (3) and thus rolling the hair around the roller (3). An inline oscillator module (11) supplies alternating current at 100hz to cause induction heating of the graphite core (1). Contacts (12) mounted to the brushed aluminium body (10) provide current to the rotating pcb (7) transferring current to the roller contacts (4).

Figure 2 shows a 3D view of a possible handle design with the copper contacts (4) and the sprung rotating latch (5) protruding through the rotating cuff (6).

Figure 3 shows a cross-section of the handle (10) and how the contacts (12) stay constantly in contact with the pcb plate (7) when the rotating cuff (6) is rotated.

Figure 4 shows a top view cross-section of the handle with the insulated pcb plate.

Figure 5 shows the roller (3) with the addition of a clip (13), in the up position, which when lowered, secures the roller (3) to the hair and the handle (10) ready to be inserted.

Figure 6 shows a side view of the present invention with the roller (3) attached to the handle (10). This action may start the heating process by induction. If the heating process is not started at this time then a button or switch (9) may activate the heating process. The handle (10) is capable of rotating the roller (3) with the aid of a motor (8) and the roller can also be held by the clip (13).

Figure 7 shows a side view of the present invention with the roller clip (13) in the down (lock) position. This locks the hair between the clip and the roller (3) and stops the roller (3) unravelling and falling out.

Figure 8 shows a 3d view of the present invention with the handle (10) ready to be inserted into the roller (3).

Claims

1. A method for heating and applying rollers using a handle.

2. A method according to claim 1, wherein the roller is rotated by the handle under its own means.

3. A method according to claim 1, wherein the roller is rotated by an electric motor, which may or may not be battery powered.

4. A method according to claim 1, wherein the roller can be griped and released by the handle.

5. A method according to claim 1, wherein the roller is heated when connected to the handle.

6. A method according to claim 1, wherein the roller is heated when the user manually activates the process.

7. A method according to claim 1, wherein the roller is heated by method of induction.

8. A method according to claim 1, wherein the roller has a clip that allows the roller to rotate.

9. A method according to claim 1, wherein the roller can be held by the clip.

10. A method according to claim 1, wherein the clip can be pushed into the roller to secure it to the hair.

Application No:	GB1119357.0	**Examiner:**	Emma Tonner
Claims searched:	1-10	**Date of search:**	29 January 2013

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1-7	EP2524618 A1 (BABYLISS) see figures 10-15
X	1, 4, 5, 6	GB2394656 A (JOSEPH) see page 4, line 16 - page 5, line 15
X	1, 4, 5	GB2241434 A (DICKINSON INDUSTRIAL CO. Ltd.) see page 3, line 15 - page 5, line 6
X	1, 4, 5	US4267851 A (PLAISTED) see col.4, lines 4-17
X	1, 4, 5	US7296580 B1 (SBARDELLA) see col.6, line 42 - col.7, line 40
X	1, 5	WO95/12996 A1 (KHUBANI) see page 6, line 37 - page 7, line 23

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^{X} :

Worldwide search of patent documents classified in the following areas of the IPC

A45D

The following online and other databases have been used in the preparation of this search report

EPODOC, WPI

International Classification:

Subclass	Subgroup	Valid From
None		