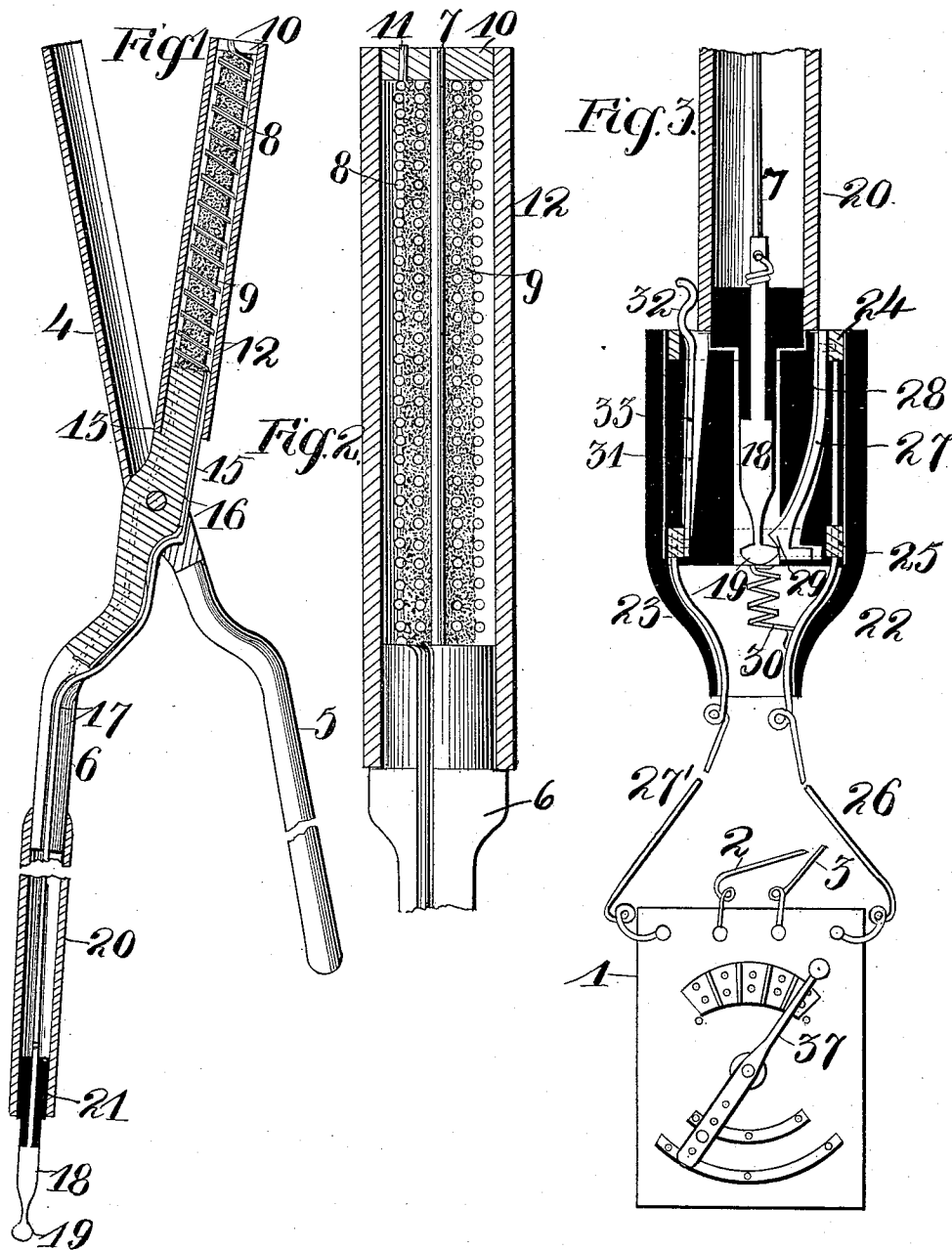


(No Model.)

A. F. GODEFROY.
ELECTRIC CURLING IRON.

No. 469,135.

Patented Feb. 16, 1892.



WITNESSES
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ELECTRIC CURLING-IRON.

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Application filed June 26, 1891. Serial No. 397,611. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDRE F. GODEFROY, of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Electric Curling-Tongs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in curling-tongs; and it consists in the novel arrangement and combination of parts, as will be more fully hereinafter described, and designated in the claims.

Heretofore curling-tongs have been heated in various ways. For instance, where the member to be heated was hollow or cylindrical a heating-core was first placed in a stove or furnace and heated and then inserted in the hollow member of the curling-tongs, and the heat radiated by it was utilized to heat said member. In other cases the member to be heated was thrust directly into the fire or flame, then withdrawn, wiped as clean as possible, and was ready to be used. In all of these cases, however, no electricity as a heating agent was employed. In the first-mentioned case, wherein a heating-core was used, the core would soon become cold and had to be removed from the hollow member, reheated, and replaced many times during use, especially if the device was used in professional hair-dressing establishments, where my device is particularly adapted for use. In the second case, wherein the iron was thrust into the fire, the same objection has been made. Besides, such manner of heating greatly deteriorated the curling-surface of the iron by burning it, roughening it, and thus rendering the same unfit for the delicate work of curling hair, and the fire and flame coming in contact with the smooth curling-surface soiled and blackened it by smoke and ashes.

In my electric curling-tongs electricity is utilized as the sole heating agent. I provide the necessary smooth and polished curling-surface, around which the hair is wrapped, and am enabled to always retain this surface clean, smooth, and polished for the reason

that the member to be heated is never inserted in fire or smoky flame, (the flame of a gas-jet, for instance,) and by reason of the heating devices being permanently located within the member and always ready to radiate heat when properly connected no removable heating-cores are required. Within this smooth and polished curling-cylinder and mounted upon one of the handles of the device I locate an electric resistance of comparatively small capacity and provide it with such insulation and connections as will adapt it for the purpose of radiating heat outwardly in radial lines throughout the length of said curling-cylinder, whereby the entire peripheral surface of said cylinder will be heated uniformly and adapted to perform the function of curling hair. I further provide suitable electrical and mechanical connections between the handle of the device and its supporting-socket and its source of electrical energy, which will permit said device to be revolved without twisting the electrical conductors, as many revolutions of the curling-cylinder in both directions are necessary in operation, particularly if long continued.

In the drawings, Figure 1 is a longitudinal section of my invention. Fig. 2 is a similar section of the round member of the tongs, showing the construction thereof; and Fig. 3 is a longitudinal section of the device by which the tongs are connected to a source of electricity, and also a front elevation of an electrical transformer.

The object of my invention is to construct curling-tongs adapted to be heated to any desired temperature by means of an electric current.

Referring to the drawings, 1 indicates an electrical transformer, which when connected for operation has current-supply conductor 2, which leads from the source of electricity to and into the transformer and passes out through the wire 3 back to the original source of electricity.

I will first proceed to describe the construction of the curling-tongs, and will then proceed to describe the electrical connections

and the direction of the current through said tongs, referring to Figs. 1 and 2 for illustration.

4 indicates the semi-tubular member of the tongs, the opposite end of which terminates in the handle 5, of any suitable construction.

6 indicates the round member of the tongs, which embodies the electrical construction of the tongs. The round member 6 terminates at its forward end in a small spindle 7, around which a wire coil 8 is continuously wrapped, the layers of said coil being interposed with asbestos 9.

Mounted on spindle 7 is a circular metallic washer 10, to which the end 11 of coil 8 is electrically connected. Mounted on said spindle and over said coil 8 and asbestos 9 is a hollow brass cylinder 12, which cylinder is in electrical connection at its forward end with the metallic washer 10, and the opposite end of said cylinder is in electrical connection with member 6 at a point 13. It may be observed in this connection that the coil 8 is in electrical connection with the cylinder 12 only, as hereinbefore stated. A conductor 15 extends from coil 8, passes through a groove 16, formed in the member 6, backward through a groove 17, and terminates in electrical connection with a pin 18, the same being provided with a knob 19, referring to Fig. 1 for illustration.

Mounted upon member 6 is a metallic cylinder 20, of the construction as illustrated in Fig. 1. Said cylinder is in electrical connection with member 6. Pin 18 is located also in said cylinder 20, but is insulated therefrom by insulating material 21. It may be observed in this connection that pin 18 is in electrical connection with the conductor 15, leading to coil 8, and a current of electricity is adapted to pass through pin 18 when in suitable connection with a source of electricity, then to conductor 15 through the coil 8 into the metallic washer 10, thence into the metallic cylinder 12, which is in electrical connection with the member 6, thence into the metallic cylinder 20, and from thence may be conducted off by any suitable electrical connection, as will be more fully hereinafter described.

Having given a description of the electrical construction of the tongs, as well as the mechanical, I will now proceed to describe the device or mechanism which I employ in electrically connecting, as well as mechanically, said tongs to a source of electricity, referring to Fig. 3 for illustration, wherein the device itself is indicated by the numeral 22. Said device is composed of a shell 23 of insulating material, preferably hard rubber, having located therein a circular metallic band 24, also a similar band 25, as illustrated in Fig. 3. It may be premised in this connection that said bands answer for mechanical as well as electrical connections, in the manner as will be more fully hereinafter described.

In order to fully comprehend the electrical connections between the device 23 and the

transformer 1, it will be necessary to note in this connection that wire 26 is the conducting-wire through which the current from the transformer passes out or emerges and wire 27' is the conducting-wire through which the current passes into the transformer 1 when it has passed through the coil 8 and is collected from the cylinder 20, in the manner as will be more fully hereinafter described. Wire 26 is suitably connected to the transformer 1, then passes through the metallic band 25, but is insulated therefrom, and is electrically connected to the metallic band 24.

27 indicates a spring, which is suitably mechanically and electrically connected to the metallic band 24 and is located between insulating material 28. Said spring is provided with an inverted-V-shaped projection 29, which is adapted to engage the knob 19 of pin 18, thereby holding the device 22 on said pin. The inclined surface of the projection 29 will readily permit the knob 19 to be slipped over said projection in removing the device 22 and also permit said knob to be readily slipped over said projection in applying the device 22 on pin 18.

30 indicates a spiral spring or wire, which is in electrical connection with wire 26, and the knob 19 is adapted to be brought in contact with said spring, thereby furnishing a double connection between wire 26 and knob 19, to wit: The current may pass from said wire 26 through spring 27 and into knob 19 or may pass from wire 26 through spring 30 and then into knob 19. The wire 27' is suitably electrically and mechanically connected with transformer 1 and passes into the hard-rubber shell 23 and is electrically and mechanically connected to the metallic band 25, referring to Fig. 3 for illustration.

31 indicates a spring-contact, which is mechanically secured to the metallic band 25 and is in electrical connection therewith, but is insulated from the metallic band 24. Said spring passes forward and has an exposed terminal portion 32, which is adapted to come in contact with a metallic cylinder 20 and collects or conducts the electricity from said cylinder into band 25 and from band 25 to the conducting-wire 27' and thence into the transformer. Said spring 31 is interposed between layers of insulating material 33.

Having fully described the mechanical parts of my invention and the electrical construction thereof, I will now proceed to describe and partially reiterate the direction of the current when my invention is in use.

It may be premised in this connection that pin 18 is free to rotate when properly located in the hard-rubber shell or casing 23, and also that said casing is free to rotate on said pin, thus permitting the curling-tongs to be freely manipulated. It may be also observed that the coil 8 is not in electrical contact with the cylinder 12; but electrical connection is effected between said coil and said

cylinder through the metallic washer 10, which is electrically connected to the end 11 of the coil 8, and said washer is in electrical connection with the said cylinder 12, and also that the coil 8 is insulated from the spindle 7 by the asbestos substance 9.

Fig. 3 represents the normal position of the parts when my invention is in use.

The current from the transformer passes into wire 26, thence into the metallic band 24, and from said band into spring 27, which is in electrical connection with knob 19, from said spring into knob 19, through pin 18, thence into conductor 15 to coil 8, thence through said coil, thence into the metallic washer 10, from washer 10 into the cylinder 12, from the said cylinder into the member 6, and from member 6 into cylinder 20, from said cylinder into contact-spring 31, and from said spring 31 into the metallic band 25, and thence into the transformer 1 by the conductor-wire 27'. Any quantity of electrical energy, and consequently the heat of the coil 8 and the cylinder 12, mounted thereon, may be regulated by the proper operation of the lever 37 of the transformer 1.

Having fully described my invention, what I claim is—

1. The combination, with a pair of hair-curling irons having one member provided with a smooth curling-surface adapted to curl hair, of an electric resistance normally located within said curling member of the curling-iron and arranged to radiate heat outwardly, the curling-surface of said iron being thereby heated by radiation from said resistance, and mechanical and electrical connections between the source of electricity, whereby the current may be supplied to the coil and the iron rotated without disturbing the electrical connections, substantially as specified.

2. In a curling-iron, an electrically-heated coil located within the member to be heated and a contact device on one of the handles of said iron, adapted to support the latter within a socket having connection with a source of electricity and to conduct the current to the coil, substantially as described.

3. In electric curling-tongs, a spindle on one arm thereof, a heating-coil surrounding the same, a cylinder encircling said coil and adapted to be heated by a current passing therethrough, a washer mounted on the end of the spindle and in electrical connection with the coil and cylinder, and a contact device on one of the handles of the tongs and having connection with the coil, substantially as described.

4. Electric curling-tongs of the character described, in combination with a device 22 for connecting said tongs to the source of electricity, consisting of a hard-rubber shell 23, metallic bands 24 and 25, located therein, a spring 27, in electrical and mechanical connection with band 24, and a contact-spring

31, in similar connection with band 25, substantially as set forth.

5. Electric curling-tongs having the round member thereof provided with a spindle 7, a coil 8, and asbestos 9, mounted on said spindle, a metallic washer 10, mounted on the same and in electrical connection with said coil, a cylinder 12, mounted on said coil and metallic washer 10, said metallic washer and cylinder being in electrical connection and said cylinder being also in electrical connection with the said member, a groove 17, formed in said member for the location of a branch 15 of coil 8; a hollow cylinder 20, mounted on said member and in electrical connection therewith, and a pin 18, provided with a knob 19, located in cylinder 20, but insulated therefrom, and in electrical connection with branch 16, substantially as set forth.

6. Electric curling-tongs having the round member thereof provided with a spindle 7, a coil 8, and asbestos 9, mounted on said spindle, a metallic washer 10, mounted on the same and in electrical connection with said coil, a cylinder 12, mounted on said coil and metallic washer 10, said metallic washer and cylinder being in electrical connection with the said member, a groove 17, formed in the said member for the location of branch 15 of coil 8, a hollow cylinder 20, mounted on said member and in electrical connection therewith, and a pin 18, provided with a knob 19, located in cylinder 20, but insulated therefrom, and in electrical connection with branch 16, in combination with device 22 for connecting said member to a source of electricity, consisting of a hard-rubber shell 23, metallic bands 24 and 25, located therein, a spring 27 in electrical and mechanical connection with band 24 and also in electrical connection with knob 19, and a contact-spring 31 in electrical connection with a hollow cylinder 20 and electrical and mechanical connection with a metallic band 25, a conducting-wire, such as 26, in electrical connection with a source of electricity and band 24, and a similar conducting-wire 27', likewise in connection with a source of electricity and metallic band 25, substantially as set forth.

7. The combination of an electrical transformer 1, a supply-wire 2, secured to the same, the return-wire 3, likewise secured to said transformer, a device, such as 22, consisting of a hard-rubber shell 23, metallic bands 24 and 25, located therein, a conducting-wire, such as 26, connected to said transformer and said band 24, a conducting-wire, such as 27', connected to said transformer and said band 25, a spring 27, provided with a projection 29, electrically and mechanically secured to band 24, a spring 31, likewise connected to band 25, a round member 6, provided with a spindle 7, a coil 8, and asbestos 9, mounted on said spindle, a metallic washer 7, mounted on the same and in electrical connection with said coil, a cylinder 12, mounted on said coil and

metallic washer 10, said metallic washer and
cylinder being in electrical connection with
the said member, a groove 17, formed in the
said member for the location of branch 15 of
5 coil 8, a hollow cylinder 20, mounted on the
said member and in electrical connection
therewith, and a pin 18, provided with a knob
19, located in cylinder 20, but insulated there-

from, and in electrical connection with branch
16, substantially as set forth. 10

In testimony whereof I affix my signature in
presence of two witnesses.

ALEXANDRE F. GODEFROY.

Witnesses:

ED E. LONGAN,
L. L. TRACEY.