W. K. KEARSLEY, JR.

ELECTRIC HEATING DEVICE.

APPLICATION FILED AUG. 17, 1916.

1,256,571. Patented Feb. 19, 1918.

Fig. 1.

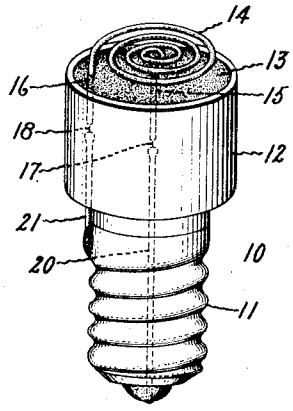


Fig. 2.

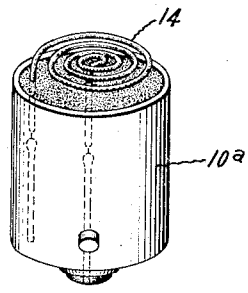
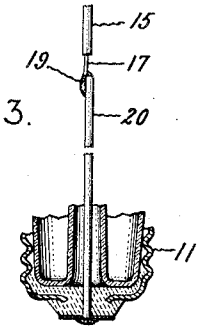


Fig. 3.



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UNITED STATES PATENT OFFICE.

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ELECTRIC HEATING DEVICE.

1,256,571. Specification of Letters Patent. Patented Feb. 19, 1918.

Application filed August 17, 1916. Serial No. 115,458.

To all whom it may concern:

Be it known that I, WILLIAM K. KEARSLEY, Jr., a citizen of the United States, residing at Newark, in the county of Essex, State of New Jersey, have invented certain new and useful Improvements in Electric Heating Devices, of which the following is a specification.

My invention relates to an electric heating device, and more particularly to an electric cigar lighter, and has for its object the provision of a device of this character which is simple, compact and efficient. More specifically, my invention comprises a heating device provided with an insulating base, a heating unit which projects from and is free of the base and is formed of sheathed wire, comprising a resistance core inclosed in a metal sheath with an intervening layer of insulating material.

In the accompanying drawings, which disclose one embodiment of my invention, Figure 1 is a perspective view of a cigar lighter embodying my invention; Fig. 2 is a similar view of a modification; and Fig. 3 is a sectional view of the lower portion of the device shown in Fig. 1.

Referring now to the drawings, and first to Fig. 1, 10 is a metal receptacle comprising an ordinary screw threaded incandescent lamp base 11 and a cup-shaped member 12 secured thereto. The member 12 is filled with an insulating material 13 such as a cement, the heating element 14 projecting beyond and being free of the insulating base, the ends of the heating unit being at right angles at 15 and 16, and embedded in the insulating material to form a support for the heating unit. Sheathed wire suitable for the purpose of my present invention, is disclosed in a copending application, Serial No. 99,306, which was filed by me on May 23rd, 1916, to which reference may be made for details concerning the character of the wire and the method of manufacturing the same. Briefly, however, it may be stated that the sheathed wire there described comprises a core wire of suitable resistance material, which is inclosed in a metal sheath with an intervening layer of refractory insulating material which is at the same time a fairly good conductor of heat, the whole being tightly compacted together as by rolling. The terminals of the core wire project from the ends of the heating element and are indicated in the drawing by the numerals 17 and 18 and these are in turn soldered or otherwise secured at 19 to the terminal members 20 and 21 respectively. The terminal members 20 and 21 are electrically connected to the usual terminals of lamp base 11.

In the modification shown in Fig. 2, I have shown my invention embodied in a lamp base which is known in the art as the Edi-Swan or bayonet, in which the receptacle 10 is filled with insulating material in which the ends of the heating element are embedded as in Fig. 1, the shell 10^a constituting one of the terminals of the base.

The heating device embodying my invention may be used not only for lighting cigars, as may the ordinary cigar lighter, but since the heating unit projects beyond and is entirely free of the supporting base, the heating unit may be inserted directly in the bowl of a pipe and embedded directly in the tobacco, an operation which obviously is impossible with an ordinary cigar lighter which is formed to protect the heating unit, and is usually provided with a small opening for the insertion of the end of the cigar, which is however always kept away from the resistance unit. It will be apparent that the heating unit of my device, since it is brought directly into contact with the tobacco or other material to be ignited may be run at a lower temperature than can a heating unit of the usual cigar lighter in which a layer of mica or other insulating material is interposed between the heating unit and the material to be ignited. This feature of my invention is made possible by the novel form of heating unit which combines the mechanical strength of a comparatively large size wire and the resistance of a comparatively small size wire. It will also be apparent that since the points at which the terminals of the heating unit are connected to the terminal members are closely surrounded by the insulating material, the air is substantially excluded from the point of contact formed between the two, and the life of the device is accordingly increased.

It will be seen that since the device is applicable to an ordinary miniature lamp socket, the same may readily be renewed and may also be interchangeable with a trouble lamp for use with automobiles.

In accordance with the provisions of the

patent statutes, I have described the principle of operation of my invention, together with the apparatus which I now consider to represent the best embodiment thereof; but I desire to have it understood that the apparatus shown is only illustrative, and that the invention can be carried out by other means.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. An electric heating device comprising an insulating base, and a small heating unit projecting beyond and free of the base and formed of sheathed wire comprising a resistance core surrounded by a metal armor with an intervening layer of insulating material.

2. An electric heating device comprising an insulating base, and a small spiral heating unit projecting beyond and free of the base and formed of sheathed wire comprising a resistance core surrounded by a metal armor with an intervening layer of insulating material, the ends of the sheathed wire being secured in the insulating material, and forming a support for the unit.

3. An electric heating device comprising an incandescent lamp base provided with the usual terminals, an insulating material filling the lamp base, and a sheathed wire heating unit comprising a resistance core inclosed in a metal sheath with an intervening layer of insulating material, the heating unit projecting beyond and free of the base, and the terminals of the heating unit being connected to the terminals of the lamp base.

4. An electric heating device comprising an incandescent lamp base provided with the usual terminals, an insulating material filling the lamp base, and a sheathed wire heating unit comprising a resistance core inclosed in a metal sheath with an intervening layer of insulating material, the heating unit projecting beyond and free of the base, the terminals of the heating unit being connected to the terminals of the lamp base, and the ends of the sheathed wire being bent and secured in the insulating material.

5. An electric heating device comprising an incandescent lamp base provided with the usual terminals, an insulating material filling the lamp base, terminal members extending into the insulating material and electrically connected to the terminals of the lamp base, a sheathed wire heating unit comprising a resistance core inclosed in a metal sheath with an intervening layer of insulating material projecting beyond and free of the base, the terminals of the heating unit being connected to said terminal members and surrounded by the insulating material of the base.

In witness whereof, I have hereunto set my hand this 15th day of August, 1916.

WILLIAM K. KEARSLEY, JR.