W. S. HADAWAY, JR.

ELECTRIC HEATER.

APPLICATION FILED SEPT. 5, 1911.

1,257,599. **Patented Feb. 26, 1918.**

Fig. 1.

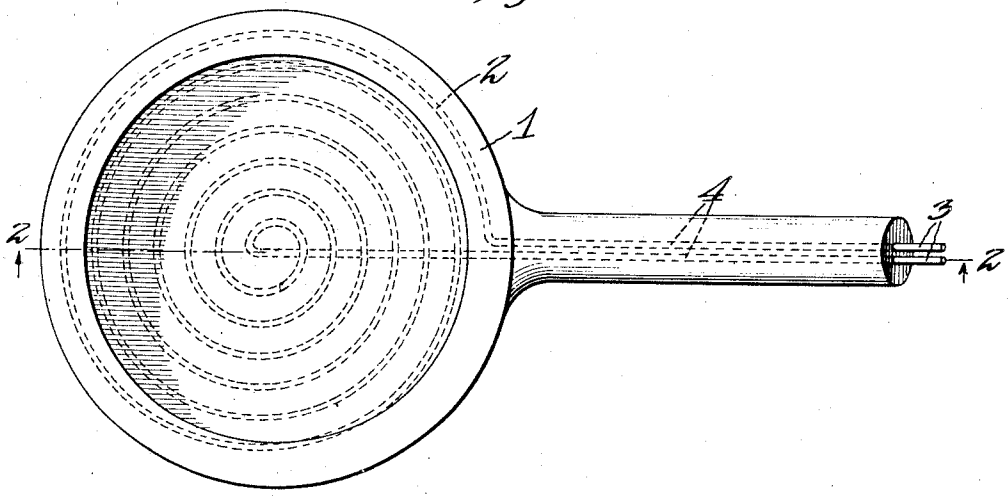
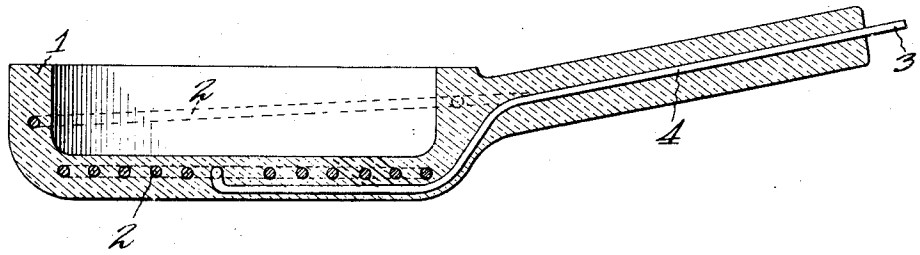


Fig. 2.



Witnesses:

Inventor

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By Attorney

UNITED STATES PATENT OFFICE.

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ELECTRIC HEATER.

1,257,599. Specification of Letters Patent. Patented Feb. 26, 1918.

Application filed September 5, 1911. Serial No. 647,690.

To all whom it may concern:

Be it known that I, WILLIAM S. HADAWAY, Jr., a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Electric Heaters, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to electric heaters.

It has heretofore been proposed to heat electrical devices by placing within the same a separate heating element. For instance, in electrical dental heaters the receptacle has been formed complete and within the same a heating element has been placed which conforms to the shape of the inside of the receptacle. In such constructions the receptacle has generally been made of a material which is quite fragile, so that it is readily broken. On the other hand, when the receptacle has been made of other material which is less fragile, the device has been unduly expensive.

My invention has among its objects to provide an improved electric heating device which has increased efficiency and in which the electric heating element is embedded in the device and serves to reinforce the same so that the device is well adapted to withstand rough usage. Other objects and advantages of my improved construction will hereinafter appear.

In accordance with a preferred form of my invention I embed within a device one or more electric heating conductors which serve the double function of heating the device and at the same time strengthening the same, so that it may not readily be broken.

In the accompanying drawings, I have illustrated one form which my invention may assume in practice. My invention is not, however, limited to this specific form.

In the views of these drawings:—

Figure 1 shows a top plan view of this form of my improved heating device.

Fig. 2 shows a central sectional view on line 2—2 of Fig. 1.

In these drawings I have illustrated a heating device in the form of a receptacle 1, having embedded within it an electrical conductor or resistor 2. This receptacle while illustrated in the form of a casserole for purposes of explanation, may assume various other forms. In a preferred form, this receptacle or heating device is formed of a plastic material which is molded into shape, with the resistor embedded therein at the time the device is formed. The heating conductor or resistor may be baked within the receptacle and any desired surface of the latter may be glazed so as to retain the heat within the same or to facilitate cleaning. I may use as the resistor such a material as a nickel-chromium or copper-nickel alloy, since these alloys have the property of withstanding high temperatures without scaling and have a high resistance. The conductor is wound into whatever form best adapts it to serve as a mechanical reinforcement for the walls of the receptacle, while at the same time insuring the conduction of heat to the inner surface thereof in an efficient manner. For instance, in Figs. 1 and 2, I have shown it wound into a spiral form with convolutions of the conductor passing up around the sides of the receptacle. It is obvious that other forms than this may be adopted, if desired. The ends of the conductor are preferably brought out at suitable terminals 3. In the construction shown, these terminals 3 are preferably located on or near the end of the handle of the receptacle so that the terminals may be conveniently connected to a suitable plug. If desired, the ends of the conductor may be welded to rods 4 extending through the handle whose ends serve as suitable terminals. By the use of these rods I am able to materially strengthen the handle of the device so that it is not liable to breakage.

By the use of my improved construction I am able to provide an electric heating device wherein the heat is properly distributed and is directly conducted to the contents of the receptacle, the heating element being so embedded within the device as to be out of contact with said contents and in such a position that it is impossible to ground the same. Further the said resistor is so arranged in the device as to provide not only a heating means for the same but also a means of reinforcing the same so that the possibility of breakage is decidedly reduced. On the other hand even should the device be broken by exceedingly rough usage it is of such a simple and inexpensive construc-

tion that it may be replaced at small expense.

While I have in this application described one specific form which my invention may assume in practice I have chosen this form as a means of illustrating my invention and do not wish to be limited to it, but wish rather to cover all of those forms of my invention which fall within the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is as follows:—

1. An electrically heated receptacle comprising a conductor wound to form a vessel frame and a handle thereon, and insulating material surrounding said frame and said handle to form the body and handle of the receptacle whereby said conductor forms the heating element for the receptacle and the frame of the vessel and is insulated by the material forming the body of the receptacle.

2. An electrically heated receptacle comprising a vessel formed of insulating material and provided with a bowl and handle, said vessel having an electric heating conductor embedded in said handle and said bowl and wound spirally within the bottom of said bowl and the sides of the same, the ends of said conductor being brought out together at the end of said handle to form terminal connections.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM S. HADAWAY, Jr.

Witnesses:

A. B. Hubbell,

Edwin N. Lightfoot.