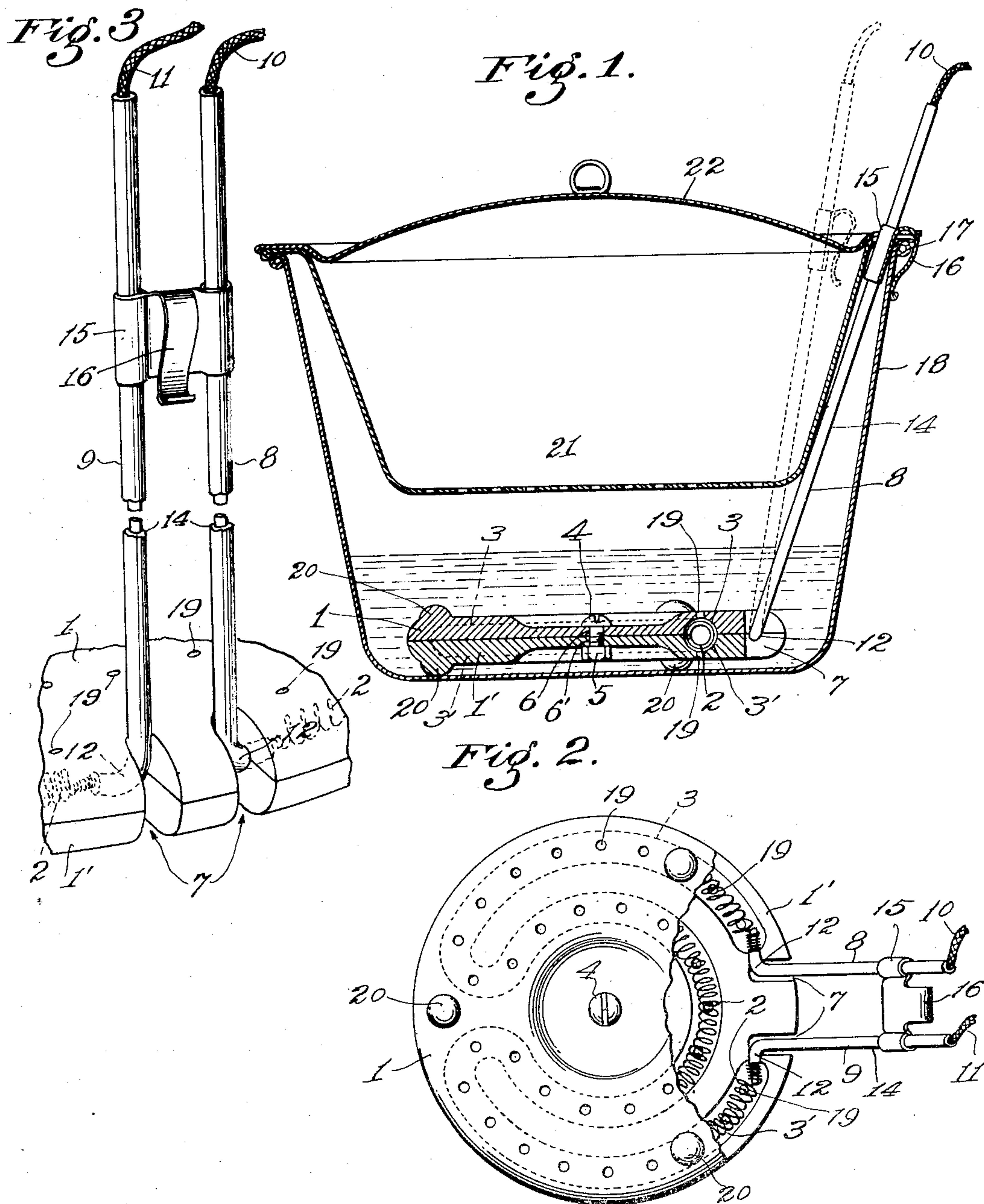


No. 887,923.

PATENTED MAY 19, 1908.

E. M. CRANDALL.
ELECTRIC HEATER AND COOKER.
APPLICATION FILED JUNE 28, 1907.



Witnesses
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UNITED STATES PATENT OFFICE.

ELLA M. CRANDALL, OF DOLGEVILLE, CALIFORNIA.

ELECTRIC HEATER AND COOKER.

No. 887,923.

Specification of Letters Patent.

Patented May 19, 1908.

Application filed June 28, 1907. Serial No. 381,351.

To all whom it may concern:

Be it known that I, ELLA M. CRANDALL, a citizen of the United States, residing at Dolgeville, in the county of Los Angeles and State of California, have invented a new and useful Electric Heater and Cooker, of which the following is a specification.

It is one of the objects of this invention to provide a device whereby electricity can be applied in a direct and convenient manner for heating liquids for the purpose of cooking or for any other purpose desired; to provide a device of this kind which can be manufactured at a minimum expense for maximum service, which is sanitary and can be readily cleaned; which can be applied in ordinary culinary vessels, as stew-pans, pots, kettles, bowls, jars, and the like, and which is adapted for ready and convenient renewal of the heating element in case of accident or other derangement.

Other objects and advantages may appear from the subjoined detail description.

The invention may be applied in various forms, and in the accompanying drawing I shall show that form which I at present deem most desirable.

I provide a heating element in the form of a resistance coil, and house the same in a case formed of two grooved detachable insulating plates, which may be made of porcelain or enameled sheet metal, or the like, and electrically connect said coil with two terminals that are provided with insulation so they may be handled and may be immersed in water or other liquid without short circuiting.

The accompanying drawing illustrates the invention.

Figure 1 is a view partly in section, of the appliance in use in a stew-pan which is shown in vertical mid-section. Fig. 2 is a plan view of the device partly in section, in one of the forms in which I at present contemplate embodying the invention. Fig. 3 is a perspective detail of the terminals in place. Fragments of the plates are shown.

1 and 1' designate two plates, each grooved on one side to chamber the heating element in the form of a resistance coil 2 which is chambered in grooves 3, 3', in said plates 1, 1', respectively. Said plates may be duplicates as the grooves are arranged in such manner that when the plates are placed together, the grooves of one will correspond with those of the other. The plates are com-

plementary to each other so that when the plates are placed together with their grooved faces against each other, the grooves will coincide to receive the resistance-coils 2.

4, 5, designate a screw and nut, the screw passing through central perforations 6, 6', in the plates to secure the two plates together. 7 designates parallel slots in the periphery of the plates to receive terminals 8, 9, to which the conductors 10 and 11 are connected respectively. Said terminals have angularly-bent ends 12 to seat in the juxtaposed ends of the grooves 3, 3', so that when the terminals are in place in said plates they may be swung up and down as indicated in dotted lines in Fig. 1 to conform to the walls of different characters of vessels. The slots 7 accommodate the terminals so that they may be swung from one to the other side, of the disk-like body or housing formed by the plates, thus adapting the appliance to be used with either plate uppermost. The two terminals are incased in insulating material 14. This may be readily accomplished by enameling the terminals, except where connected with the conductors and with the resistance.

15 designates a sliding tie and clamp for holding the terminals 8 and 9 in position relative to each other. The same is provided with a spring tongue 16 which may be sprung over the edge 17 of the vessel 18, thus to hold the terminals in position relative to the vessel while the device is in use.

The plates 1 and 1' are provided with perforations 19 leading into the resistance-containing-channels or grooves 3, 3', to allow percolation of liquid therethrough, so that the liquid may come into contact with the heating element.

20 designates bosses forming legs on which the undermost plate may rest so as to provide for free circulation of liquid underneath the plates.

In practical use the device will be placed in the bottom of the vessel in which it is to be used and will be covered with the liquid to be heated. In case it is desired to use a steamer in connection with this, the same may be applied in the vessel containing the water. 21 designates a vessel for this purpose, and 22 a cover for the same.

The plates 1 and 1' may be made of any appropriate insulating material, as porcelain, or enameled plates of metal, or the like, the purpose being to provide a simple and non-

absorbent holder for maintaining the resistance in a flat form at the bottom of the vessel in which the liquid is to be heated.

The clamp may be made of suitable insulating material as enameled sheet metal for double protection against short circuiting.

What I claim is:—

1. An electrical heater comprising a heating element, insulated terminals connected therewith, and a flat perforated separable insulated housing for said element.

2. Two perforated recessed insulating plates, means for detachably connecting the two together, an electrical heating element contained in the recesses between said plates, and insulated terminals connected with said heating element and fastened to said plates.

3. A perforated disk-like insulating body, an electrical heating element inside said body, and insulated terminals fastened to said body and connected with said element.

4. A disk-like insulating body, an electrical heating element inside said body, and insulated terminals pivotally fastened to said body and connected with said element.

5. Two complementary insulating plates each recessed on one side to receive a heating element and each provided with parallel slots in the peripheries of the plates and communicating with the ends of the grooves, insulated terminals in said slots having angularly-bent ends in said grooves, a heating element in the recesses of said plates, and means for fastening the plates together.

6. Two complementary insulating plates each provided with two peripheral slots, grooves communicating with said slots and forming in each plate a sinuous recess communicating at its ends with said coaxial slots, means to hold the plates together, an electrical heating element between the plates housed within said recess, and terminals pivotally mounted in said slots and grooves.

7. Two perforated complementary insulating plates each provided on one face with a sinuous recess and also provided with openings communicating with opposite ends of said recess, means for fastening the plates together, an electrical heating element in said recess, and insulated terminals connected with the ends of said heating element and mounted in said openings.

8. A disk-like insulating body, an elec-

trical heating element inside said body, insulated terminals pivotally fastened to said body and connected with said heating element, and a clamp adjustably mounted on said terminals.

9. A disk-like insulating body provided with a recess and with perforations opening from said recess, an electrical heating element in said recess, and insulated terminals connected with each other to form a handle, pivoted to said body and electrically connected with said heating element.

10. Two perforated insulating plates provided with recesses and adapted to form a housing for a heating element, a heating coil in said housing and rigid electrical conductors pivotally connected therewith.

11. Two perforated insulating disks fastened together and provided with complementary recesses, a heating coil in said recesses, and electrical conductors connected with the coil and adapted to form a handle for said disks.

12. Two insulating disks fastened together and provided with complementary recesses, a heating coil in said recesses and insulated electrical conductors connected with the coil, and adapted to form a handle for said disks.

13. Two insulating disks fastened together and provided with complementary recesses, said disks being perforated along said recesses, a heating coil in said recesses, and electrical conductors connected with the coil.

14. Two insulating disks fastened together and provided with complementary recesses, said disks being perforated along said recesses, a heating coil in said recesses, and insulated electrical conductors connected with the coil, and adapted to form a handle for said disks.

15. Two perforated insulating plates fastened together to form a housing for an electrical heating element, an electrical heating element in said housing, insulated terminals pivotally secured to said plates and connected with said heating element.

In testimony whereof, I have hereunto set my hand at Los Angeles California this 15th day of June 1907.

ELLA M. CRANDALL.

In presence of—

JAMES R. TOWNSEND,
M. BEULAH TOWNSEND.