

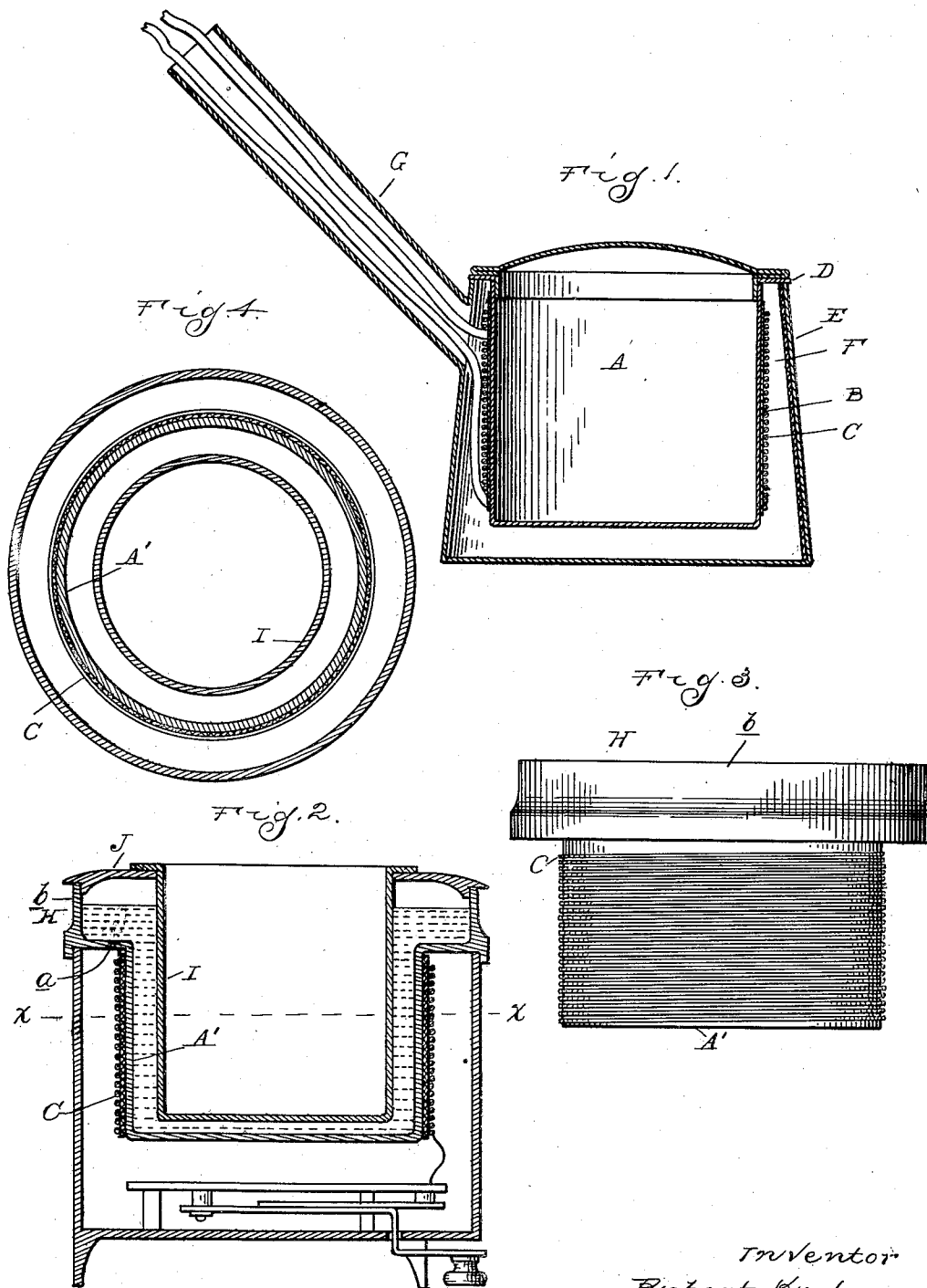
No. 756,242.

PATENTED APR. 5, 1904.

R. KUHN.
ELECTRIC HEATER.

APPLICATION FILED OCT. 7, 1902.

NO MODEL.



Witnesses
A. S. Robertson
[Signature]

Inventor
Robert Kuhn
By [Signature]
attys.

UNITED STATES PATENT OFFICE.

ROBERT KUHN, OF DETROIT, MICHIGAN, ASSIGNOR TO UNITED ELECTRIC HEATING CO., OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

ELECTRIC HEATER.

SPECIFICATION forming part of Letters Patent No. 756,242, dated April 5, 1904.

Application filed October 7, 1902. Serial No. 126,353. (No model.)

To all whom it may concern:

Be it known that I, ROBERT KUHN, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Electric Heaters, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to electric heaters, and more particularly to a construction adapted for use in cooking food, heating glue, &c.

It is the object of the invention to obtain a simple construction which is inexpensive to build and which is economical in the consumption of current.

It is a further object to provide a construction especially adapted for use in place of the ordinary double boilers.

The invention therefore consists in the construction as hereinafter described and claimed.

In the drawings, Figure 1 is a vertical central section through the heater. Fig. 2 is a similar view through a modified construction, and Fig. 3 is an elevation view of the receptacle with the heating-coil wound thereon. Fig. 4 is a section on line *xx*, Fig. 2.

It is one of the objects of the invention to apply the heat generated by the electric current as directly as possible. I have therefore devised a construction in which the heating-coil is wound around the receptacle containing the material to be heated.

As shown in Fig. 1, A is a receptacle of cylindrical form. B is a wrapping of insulating material, which is preferably a thin sheet of mica. Around this wrapping is wound the heating-coil C, which may be of any suitable material, and in winding the convolutions are slightly spaced from each other, so as to compel the current to pass through the entire wire. The receptacle A is provided at its upper end with a laterally-extending flange D, which is supported upon an outer casing E. The flange D and the outer casing E are preferably secured to each other, so as to form a practically air-tight chamber F, in which the coil C is located and which forms a jacket for preventing loss of heat. The outer casing is provided with a handle G, preferably in the

form of a tube, and the terminals of the coil C pass outward through this handle.

In Fig. 2 I show a modified construction designed especially for a double boiler, which may be used either for cooking or for heating glue or other similar uses. In this construction the coil C is wound around a cylindrical portion A' of a receptacle which at its upper end is provided with a portion H of greater diameter. This portion H is preferably formed by a laterally-extending annular flange *a* at the upper end of the portion A' and an upwardly-extending cylindrical flange *b*. The whole constitutes a water-jacket which surrounds an inner receptacle I, supported by a flange or ring J, resting upon the flange *b*. The inner receptacle I is of but slightly lesser diameter than the cylindrical portion A' of the jacket. Thus when water is placed in the space between the receptacle and jacket it will form but a thin partition between the outer casing having the heating-coil attached thereto and the inner receptacle. As a consequence whenever the heater is used it will take but a short time to heat this water partition and to communicate the heat to the material within the inner receptacle. If the jacket A' were of uniform diameter from top to bottom, only a small volume of water could be placed therein, and in use this would soon boil away, thereby endangering the overheating of the material within the inner receptacle. To avoid this difficulty, I have provided the jacket with the enlargement H, which is adapted to receive a sufficient volume of water to maintain a practically constant level. It is to be noticed that the coil surrounds only the lower part of the jacket and not the portion H. Thus the water will be heated only in the narrow space between the cylindrical portion A' and the inner receptacle, while the water in the portion H receives its heat only indirectly from the water lower down. As a consequence most of the heat imparted by the coil to the water in the lower part of the jacket will be absorbed by the material within the receptacle before it can be communicated to the water in the upper portion H. This will tend to prevent the loss of water through steaming away,

as the water in the upper portion will scarcely reach the boiling-point. The jacket A' is preferably inclosed in an outer casing J, similar to the casing E of the other construction.

5 What I claim as my invention is—

1. In an electric heater the combination with a receptacle for the material to be heated, of a heating-coil wrapped around the receptacle, and an outer closed casing surrounding but
10 spaced from the coil.

2. In an electric heater, the combination with a cylindrical receptacle for the material to be heated, an insulated wrapping for said receptacle, a heating-coil of naked wire wound
15 upon said wrapping and a surrounding airtight casing inclosing said coil.

3. In an electric heater, the combination with a receptacle, a surrounding water-jacket therefor having a body portion of but slightly

greater diameter than said receptacle, an upper portion of greater diameter forming a storage-receptacle, and a heating-coil wound around said lower portion.

4. In an electric heater, the combination with a receptacle, a surrounding water-jacket having a lower heating portion of but slightly greater diameter than said receptacle and an upper portion of increased diameter, a heating-coil wound around said lower portion and a casing surrounding said lower coil and forming a support upon which the upper part of said receptacle rests.

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

ROBERT KUHN.

Witnesses:

M. B. O'DOHERTY,

H. C. SMITH.