

J. F. LAMB.
HEATING ELEMENT.
APPLICATION FILED APR. 12, 1912.

1,060,264.

Patented Apr. 29, 1913.

Fig. 1.

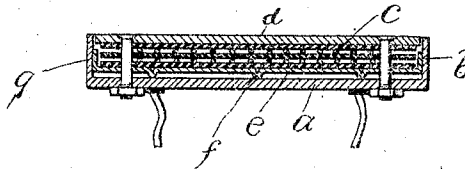


Fig. 2.

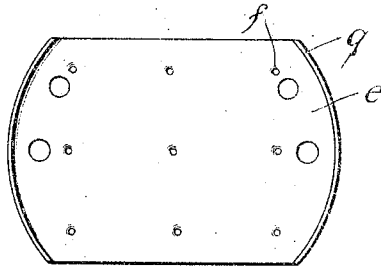


Fig. 3.

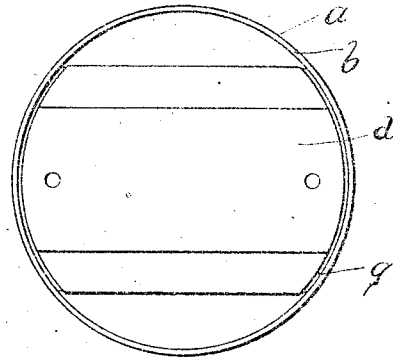
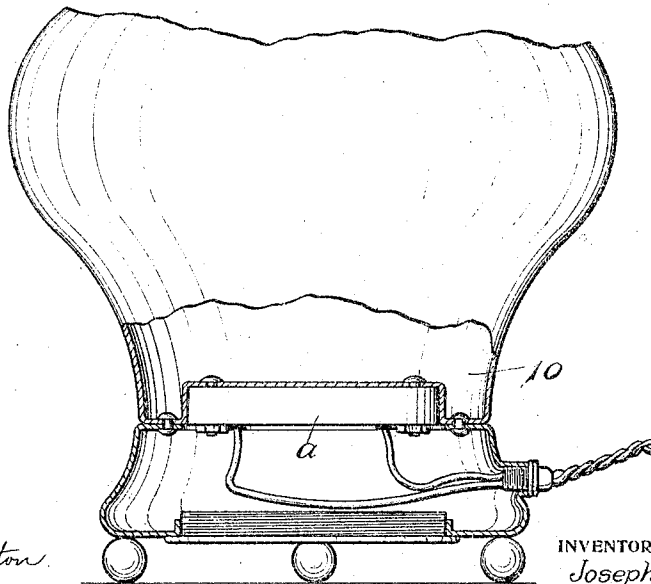


Fig. 4.



WITNESSES

E. L. Stoughton
Louis Lucia

INVENTOR

Joseph F. Lamb:

BY

M. E. Hall
ATTORNEY

UNITED STATES PATENT OFFICE.

JOSEPH F. LAMB, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO LANDERS, FRARY & CLARK, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

HEATING ELEMENT.

1,060,264.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed April 12, 1912. Serial No. 690,278.

To all whom it may concern:

Be it known that I, JOSEPH F. LAMB, a citizen of the United States, and a resident of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Heating Elements, of which the following is a specification.

The object of this invention is to provide a heating unit for use in utensils of various kinds.

It is the purpose of this invention to prevent loss of heat by preventing the transmission of heat to the exposed parts of either of the radiating members. This I accomplish by the use of a valve plate interposed between the resistance material or unit and that radiating member part of whose surface is exposed, that is to say, is not in direct heat conductive relation to the parts of the utensil which it is desired to heat, and by means of which the transmission of heat thereto can be controlled or wholly prevented; but I do provide the said valve-plate with surfaces which can be brought into heat conductive relation with other parts of said radiating member or utensil and from which heat is transmitted to the utensil. Thus I am enabled to control the heating of this radiating member to suit any condition of use. Obviously, if the parts of both radiating members were exposed, owing to some peculiar construction or special use, they could both be treated along the general lines of my invention as indicated above.

In the drawings—Figure 1 is a central vertical section of a heating unit made in accordance with my invention. Fig. 2 is a top view of the radiating member. Fig. 3 is a top view of the assembled unit. Fig. 4 is a side elevation partly in section showing the unit installed for use.

Referring to the drawings, illustrating one embodiment of the invention, *a* denotes one radiating member which as shown has an upturned flange *b* within which the resistance *c*, here shown as in the form of a coil, and the radiating member *d* are located and assembled with the proper insulation. In the case illustrated, the upper radiating member is in heat-conductive relation with the wall of the utensil 10, and the flange *b* of the lower radiating member

a is also in similar arrangement. The bottom of the lower radiating member, however, is exposed, that is to say, it does not directly contact with the wall of the utensil and cannot well be arranged to. Consequently, the valve plate *e* is interposed between the resistance *c* and the bottom of the lower member *a* and spaced therefrom by the projections *f*, or if desired, by blocks of insulating material, in order to diminish the amount of, or totally prevent, the passage of heat thereto.

At the edges of the valve plate are flanges *g* which fit closely within, and have intimate surface contact with, the flange *b* on the lower radiating member *a* which in turn contacts with the wall of the utensil. These flanges are preferred since they give greater surface contact but either or both may be dispensed with if desired. It will further be noted that as illustrated, the edges of the upper radiating member do not contact with the flange of the lower radiating member, and it will be observed that when the heating unit is assembled the space between the valve plate and the lower radiating member becomes a dead air space and so acts as an effective heat insulator. The heat in the upper radiating member is transmitted directly to the wall of the utensil, and the heat in the valve plate passes not to the bottom or exposed portion of the lower radiating member but to the flange thereof which is in contact with the wall of the utensil, thus making it possible to utilize the full heating effect of the unit to heat the utensil, or its contents, as the case may be, and avoiding to the greatest possible degree loss of heat due to radiation from exposed surfaces of the radiating members. Obviously, my invention is not concerned with the shape of the unit, or its several parts, or to the method of installation in a utensil, nor is it concerned with the character of the radiating members, that is to say whether they be formed separately from, or as parts of the utensil.

I claim as my invention:

1. In a device of the character described a resistance unit having a part adapted to be arranged in heating relation with a utensil, a heat conducting member arranged against the exposed part of the unit, and a valve plate interposed between said unit and

said member, said member and valve plate being also arranged in heating relation with the utensil.

2. In an article of the character described, the combination with a resistance material, of heat-radiating members located at opposite sides thereof, and a valve-plate located between said resistance material and one of said heat-radiating members and arranged in heat-conductive relation with active parts of said radiating member and spaced from the inactive parts thereof.

3. In a device of the character described, the combination with heat-radiating members and an interposed resistance, of an upstanding flange formed at the edge of one of the radiating members, a valve plate located between said member and the resistance, and a flange on the valve plate arranged in heat conductive relation to the flange on the radiating member.

4. In an article of the character described, a resistance material, a radiating plate on each side thereof, one of which is provided with an edge flange, a valve plate located between the resistance and said flanged radiating member and spaced from the latter, and a flange on the valve plate arranged in heat-conductive relation with the flange on the radiating member.

5. The combination with an electrical heating element comprising radiating members, and an interposed resistance material, of a valve plate located between one side of said resistance and the adjacent radiating member and spaced from the latter.

6. In an electrical heating unit, the com-

bination with a resistance, radiating plates on opposite sides thereof, spaced from one another at all points, and insulation interposed between said resistance and radiating plates, of a valve plate located between one of said radiating plates and the insulation on the adjacent side of said resistance, and separated supports located between said valve plate and adjacent radiating plate.

7. In an electrical heating unit the combination with a resistance and radiating plates located on opposite sides thereof and spaced from one another at all points, of a valve plate located between one of said radiating plates and the adjacent side of said resistance, the mass of said valve plate being less than the mass of the other radiating plate.

8. In an electrical heating unit a radiating plate provided with an upstanding circumferential flange at its edge, a second radiating plate located in juxtaposition to the first but spaced therefrom at all points, and an interposed resistance, said resistance and second radiating plate being located within said upstanding flange.

9. The combination with an electrical heating unit comprising heat radiating members and an interposed resistance material, of a valve plate located against one side of said resistance material in heating relation therewith and spaced from the adjacent radiating member.

JOSEPH F. LAMB.

Witnesses:

I. M. BUSH,
HAROLD GRACE.