J. C. PATTEN.

ELECTRIC HOT PLATE OR HEATING UNIT.

APPLICATION FILED NOV. 12, 1915.

1,238,808.

Patented Sept. 4, 1917.

2 SHEETS—SHEET 1.

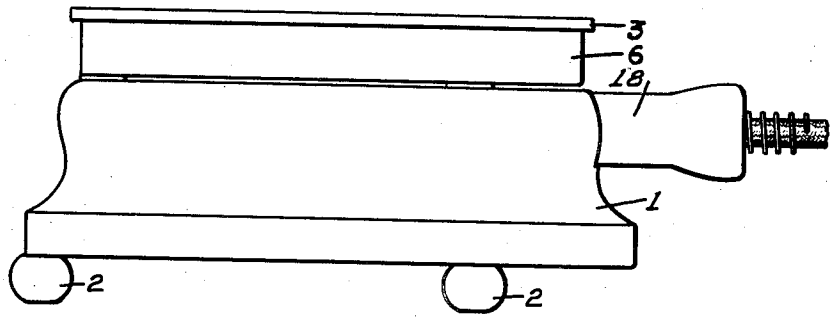


FIG. I.

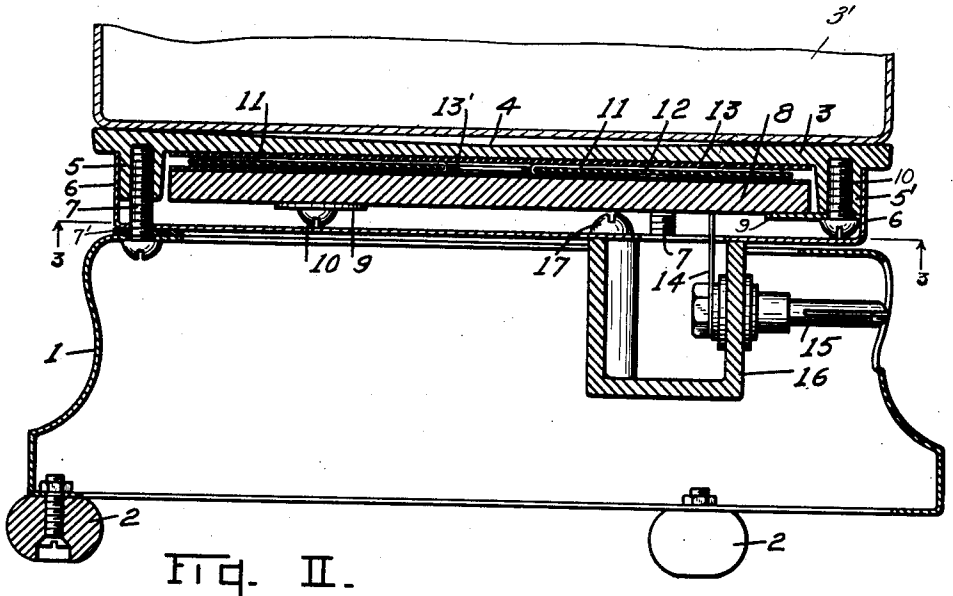


FIG. II.

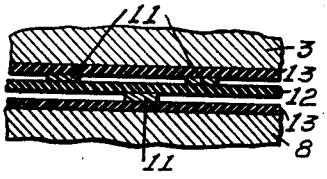


FIG. V.

WITNESSES:

P. M. Pomeroy

L. L. Blake.

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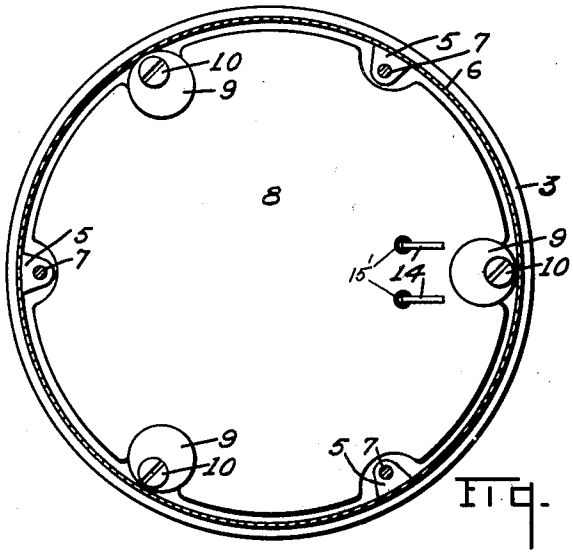


Fig. III.

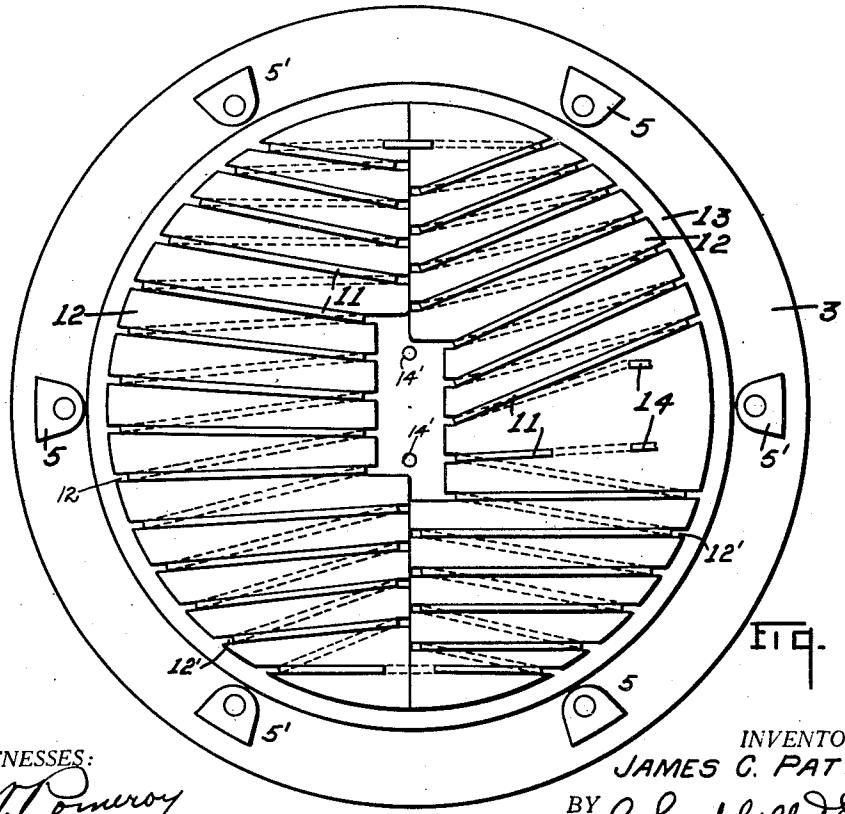


Fig. IV.

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UNITED STATES PATENT OFFICE.

JAMES C. PATTEN, OF KOKOMO, INDIANA, ASSIGNOR TO GLOBE STOVE & RANGE CO., OF KOKOMO, INDIANA.

ELECTRIC HOT-PLATE OR HEATING UNIT.

1,238,808. Specification of Letters Patent. Patented Sept. 4, 1917.

Application filed November 12, 1915. Serial No. 61,047.

To all whom it may concern:

Be it known that I, JAMES C. PATTEN, a citizen of the United States, residing at the city of Kokomo, county of Howard, State of Indiana, have invented certain new and useful Improvements in Electric Hot-Plates or Heating Units, of which the following is a specification.

This invention relates to improvements in electric hot plates or heating units.

The objects of this invention are:

First, to provide improved means of confining and delivering the heat developed by inclosed resistance coils or heating units to the vessel or cooking utensil placed thereon.

Second, to provide improved means for securing intimate contact of the metallic top plate with the bottom of a flat bottomed vessel or cooking utensil of this class.

Third, to provide improved means of retaining the heat within the hot plate and compelling its delivery to the vessel or cooking utensil disposed above.

Fourth, to provide improved means of providing for the avoidance of a disarrangement of parts due to the expansion of the metal top plate or other parts in close proximity to the resistance coils.

Further objects, and objects relating to details and economies of construction and operation will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing forming a part of this specification, in which:

Figure I is a side elevation of an improved electric hot plate or heat unit embodying the features of my invention.

Fig. II is an enlarged detail vertical sectional view of my hot plate showing the internal structure of the same.

Fig. III is a detail horizontal sectional view of my hot plate with the base removed and taken on a line corresponding to line 3—3 of Fig. II.

Fig. IV is an enlarged inverted plan view showing the arrangement and construction of the resistance coils and the top insulator plate, other parts being omitted.

Fig. V is an enlarged detail central vertical section through the resistance coils showing how the same are insulated from the metallic portions of the plate.

In the drawing, similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Considering the numbered parts of the drawing, 1 is a metallic base, preferably of spun metal, supported by the ball-shaped legs 2 preferably of fiber or rubber. The metal top plate 3 has a concavity 4 on its upper face, the flat bottomed vessel 3′ resting, when cold, upon the outer upper surface of the top plate. From its lower face depend a plurality of lugs 5. Top plate 3 is supported by a metal cup-like casing 6. The casing 6 is supported on base 1 and is held in place by screws 7 which screw into some of the lugs 5. The casing 6 is likewise held from contact with base 1 by heat insulating washers 7′. Between the top plate 3 and the casing 6 is disposed the bottom plate 8, held in place by clamp fingers 9 which are securely held against sufficient of the lugs 5 by screws 10 to retain the same. Alternate lugs 5′ serve to retain plate 8 as shown in Fig. III.

Between top plate 3 and bottom plate 8 is disposed the heating element 12. Each heating element is composed of a pair of semicircular disks made of a suitable insulator and heat resisting material, laminated mica being preferably used. The edges of these disks are notched at 12′. These two disks are made to abut with each other on their straight edges, while around each separate disk and held in place by said slots is wound the resistance coil 11 (Fig. IV). The heating element is insulated from plates 3 and 8 by mica sheets 13 and 13′ respectively. These sheets are preferably composed of laminations and held together by rivets 14′, the heating element 12 being cut away near said rivets, as shown in Fig. IV.

The ends 14 of the coils pass through insulator bushings in perforations 15′ in plate 8 and connect with the terminal posts 15, said posts being supported by and insulated from terminal box 16 which depends from casing 6 to which it is held by screws 17. Terminals 15 connect to the outside source of electricity by the connecting plug 18.

It is thus seen that the hot plate may be

so made as to hold the heating resistance coils securely between the top and bottom plates, but at the same time allows free expansion of the same when heated. The general contour of the upper face plate 3 being concave permits a flat bottom vessel or cooking utensil 3' to be placed thereon to contact at the periphery, thus effectively retaining any heat within by confining the same at these points. Most vessels having sheet metal bottoms are a little convexed and this depression causes them to come into close relation with the heated metal of the top plate. The central heating of the same has a still further tendency to convex the bottom downwardly and the concave formation of the plate thus insures the most effective contact of the sheet metal bottom of a kettle or cooking utensil, thereby enhancing the delivery of heat through the walls thereof to the contents of the same. This is of very considerable advantage, as it utilizes to the fullest extent the heat developed by the electric current in the resistance coils.

The concaved metal top plate can be effectively made use of in other relations and the other features would be quite effective with a flat top plate. The whole structure, however, is highly effective in the specific form in which it appears. The sheet metal casing 6 protects the same against injury. From what I have stated it is clear that the structure can be considerably modified without departing from the spirit of my invention. I, however, believe that the specific structure possesses a high degree of merit and I desire to claim the same in its specific form as well as broadly as indicated in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In an electric heat unit, the combination of a suitable electric heating means, an imperforate top shield plate concaved on its upper surface inclosing the same, a bottom plate for supporting the said electric heating means, and a flat bottomed sheet metal vessel supported on said top shield plate.

2. In an electric heat unit, the combination of a suitable electric heating means, an imperforate top shield plate concaved on its upper surface inclosing the same, and a flat bottomed sheet metal vessel supported on said top shield plate.

3. In an electric heat unit, the combination of a suitable electric heating means, an imperforate top shield plate concaved on its upper surface inclosing the same, a bottom plate for supporting the said electric heating means, and a flat bottomed vessel supported on said top shield plate.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

JAMES C. PATTEN. [L. S.]

Witnesses:
MAURICE E. LOUTH,
CHARLES R. CURLEE.