

July 9, 1929.

F. W. CUFFE

1,720,512

SURFACE UNIT TERMINAL

Filed July 19, 1928

Fig. 1.

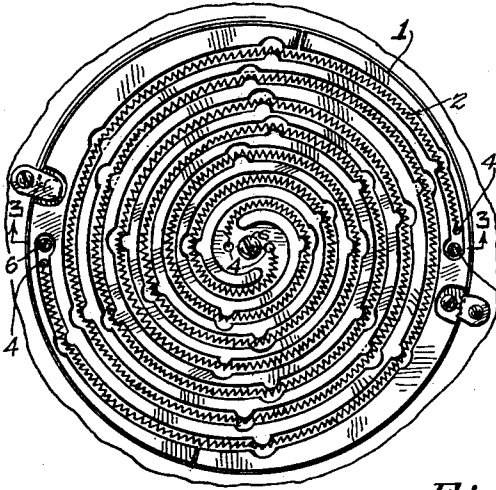


Fig. 2.

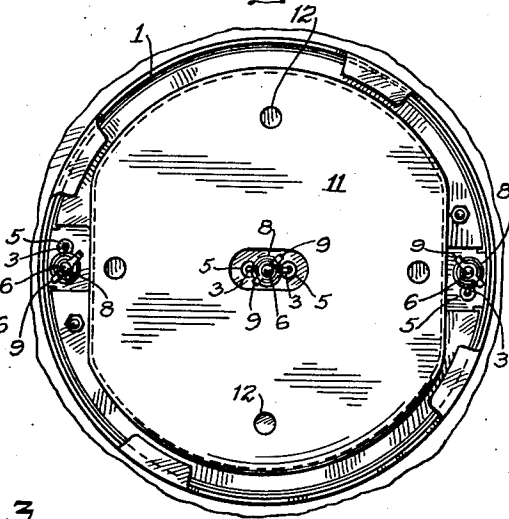


Fig. 3.

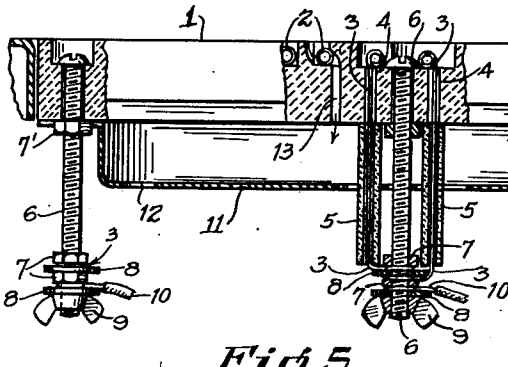


Fig. 4.

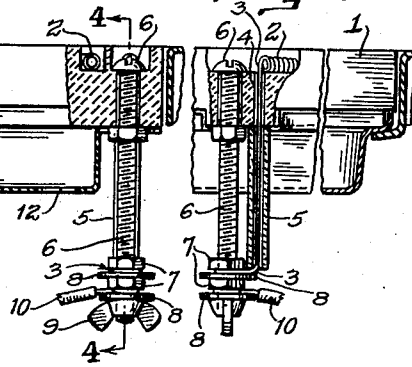
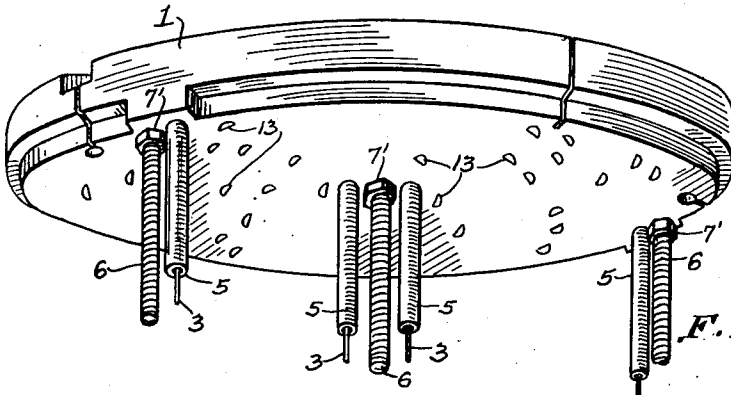


Fig. 5.



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SURFACE-UNIT TERMINAL.

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This invention relates to electric stove terminals and more particularly to terminals used in connection with flat surface units.

The principal object of this invention is to provide a terminal which will insure a cooling contact between the copper leads and resistance wire.

Another object is to prevent the annealing of the terminal and the contact wires which occurs so frequently at the present time in electric heating units.

Still another object is to provide a rigid construction which is essential to prevent a shorting of the current and at the same time to prevent destruction of the terminal.

In order to successfully solve the problems stated, it is necessary to have the terminals remote from the source of heat, allow the terminals to be in free circulation of air, and radiate as far as possible any heat which may travel down to the terminals.

The structure by which I have solved the particular problems is described and shown in the accompanying specification and drawings.

In the drawing:

Figure 1 is a top plan of the surface unit;

Figure 2 is a bottom plan of the surface unit shown in Figure 1;

Figure 3 is a section taken on line 3—3 of Figure 1;

Figure 4 is a fragmentary section taken on line 4—4 of Figure 3; and

Figure 5 is a bottom perspective of the surface unit.

Referring to the drawing:

Numeral 1 designates a surface unit including the resistance wires 2 which extend at their free ends 3 through openings 4 in the surface unit 1 through refractory tubes 5 to a terminal 6 which extends parallel to the refractory tube or tubes 5. A threaded nut 7 is placed above and below the free end or ends 3 of the resistance wires 2 with a heat radiating fin in the form of a metal washer 8 placed between the threaded nuts 7. A threaded nut 7' holds the terminal 6 snug against the surface unit 1, through which the terminal passes. A wing nut 9 is threaded upon the terminal 6 and holds the whole in place. A lead wire 10 is connected to the terminal 6 below the free ends 3 of the resistance wire 2 but spaced from the same by nut 7. Below the surface unit 1, as shown in Figures 2 and 3, is a pan 11 with openings

12 to allow for the escape of any drippings which may seep through the opening 13 in the surface unit 1. The primary purpose of the pan 11 is to act as a reflecting surface, thus breaking the downward flow of heat from the resistance coil and consequently preventing as far as possible heating the terminals and points of contact by radiation. It is true that when the pan becomes heated it will in turn radiate heat, but the heat thus thrown off will be much less than if its radiation was not interrupted by the pan. Another advantage of the pan 11 is that it acts as a mechanical support for the surface unit 1, which is usually made of porcelain or other refractory material. By extending the pan, the whole diameter of the surface unit, there is much less danger of refractory material cracking or breaking.

By continuing the free ends 3 of the resistance wire 2 through refractory tubes 5 parallel to the terminal 6, the wire is given a chance to cool by means of radiation, and at the same time, the point of contact is spaced from the source of heat.

By extending the terminal 6 parallel to the refractory tubes 5, a rigid construction is obtained which is highly desirable. With this construction, the annealing of the wires and terminal is done away with and at the same time, a construction of the greatest simplicity and efficiency is presented to the user. The use of the flat metal washer as a heat radiating fin will assist in materially discharging any heat which may travel down the terminal.

Having described my invention, I do not limit myself to the exact construction shown and described herein, but claim any equivalent structure which may come within the breadth of my invention.

Having described my invention what I claim is:

1. A heating unit comprising a plate having openings therein, resistance coils mounted on said plate, the coils having free ends extending from said plate through said openings, a refractory tube surrounding each free end and extending substantially below said plate, a terminal extending from said plate parallel to said refractory tubes, and means for securing said free end of the resistance coil to said terminal.

2. A plate of refractory material having an electrical heating coil thereon, a refractory

tube extending substantially perpendicularly from said refractory plate, a metallic contact element extending substantially from said refractory plate and adjacent to said refractory tube, and means on said metallic contact element for clamping to said element the ends of said coil projecting from said tubes.

3. A plate of refractory material having an electrical heating coil thereon, a reflection plate secured to the bottom of said plate of refractory material, a refractory tube extending substantially perpendicularly from said refractory plate, a metallic contact element extending substantially from said refractory plate and adjacent to said refractory tube, and means on said metallic contact element for clamping to said element the ends of said coil projecting from said tubes.

4. A plate of refractory material having an electrical heating coil thereon, a refractory tube extending substantially perpendicularly

from said refractory plate, a metallic contact element extending from the upper side through said refractory plate substantially perpendicularly to said plate and adjacent to said refractory tube and means on said metallic contact element for clamping to said element the ends of said coil projecting from said tubes.

5. A plate of refractory material having an electrical heating coil thereon, a refractory tube extending substantially below said refractory plate, a metallic contact element extending substantially below said refractory plate and adjacent to said refractory tube, heat radiating fins extending from said metallic contact element and means on said metallic contact element below said heat radiating fins for clamping to said element ends of said coil projecting from said tubes.

In testimony whereof I affix my signature.

FREDERICK WILLIAM CUFFE.