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F. E. WOLCOTT

ELECTRIC HEATER

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Fig. 1.

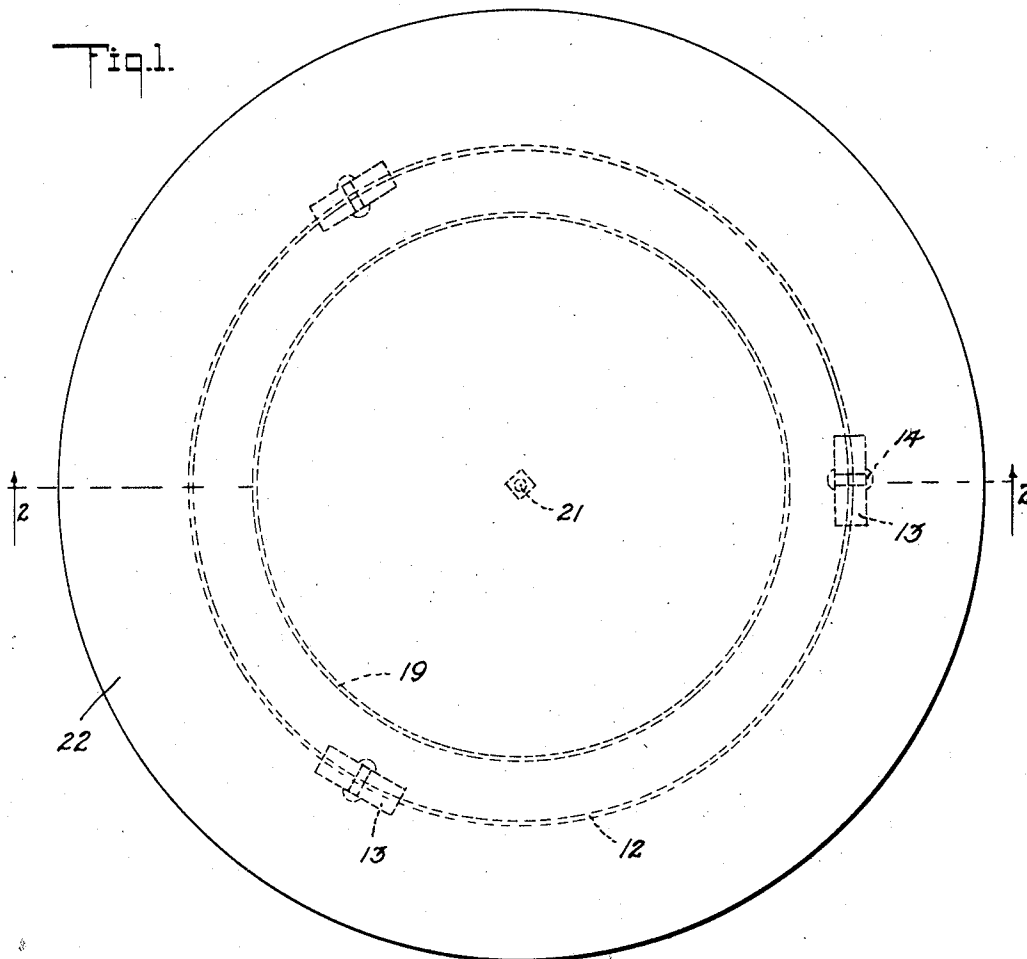
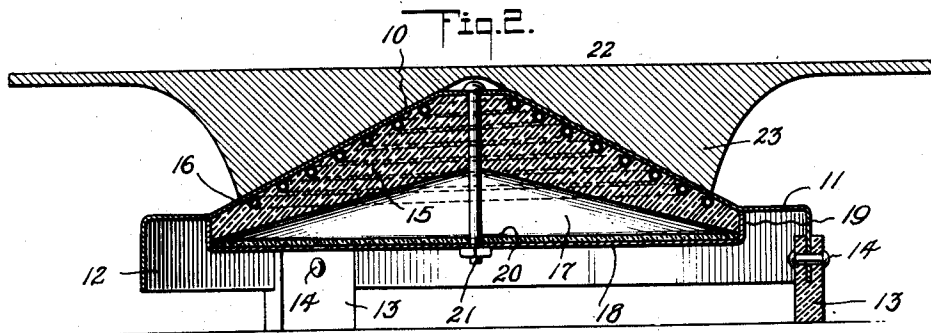


Fig. 2.



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ELECTRIC HEATER.

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To all whom it may concern:

Be it known that I, FRANK E. WOLCOTT, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Electric Heaters, of which the following is a specification.

This invention relates to electric heating devices and has particular reference to electric grids or the like.

Among the objects of the invention is to provide an electric heating device having a number of peculiarly advantageous features of construction and operation, among which may be suggested the following: (1) Simplicity of construction; (2) reliability and convenience of operation, as well as durability of service; (3) neatness of appearance and compactness of design, and many other advantages that will be apparent to those skilled in the art or who may have experience with the use of the improvement.

With the foregoing and other objects in view the invention consists in the arrangement and combination of parts hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed or suggested herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings, in which like reference characters designate the same parts in the several views, and in which—

Figure 1 is a plan view of one form of my improvement.

Fig. 2 is a vertical transverse section of the same on the line 2—2.

Referring now more specifically to the drawings, I show my improvement as comprising a heating unit of peculiar construction and design, and a suggestion of a grid interchangeably associated with the heating unit.

The heating unit comprises a casing 10 of any suitable refractory material such as sheet metal, the main structural feature of which is indicated as a symmetrical cone, surrounding which is a substantially flat rim or base 11, from the periphery of which projects downward a skirt or flange 12 of circular form, as shown. This flange lends rigidity of strength to the device and constitutes a means for attaching any suitable form of feet or legs 13. These legs may be

of any suitable material or design, and I have successfully used for this purpose rectangular blocks of fiber each having a slit formed in its upper end to receive the flange 12. These parts may be fastened together either frictionally or by some positive means such as a rivet 14 passing radially there-through. The apex of the conical casing 10 is slightly flattened and is provided with a hole.

Fitted within the cone 10 and formed as a counterpart thereof is a heating unit body 15 made of any suitable insulating material such as porcelain or its equivalent, the same carrying embedded or otherwise secured therein or thereto a resistance member 16 such as a coil of wire extending spirally around or along practically all of the conical upper surface of the body. The formation of the body as shown affords great surface capacity for the resistance member in relation to the horizontal expanse thereof, and this great heating efficiency is afforded even though the device as a whole may occupy a relatively small amount of space. The bottom of the body 15 is cambered or upwardly recessed as shown at 17 forming a dead air space, and the axis of the body is formed with a hole registering with the hole in the apex of the casing.

Beneath the body is a canopy 18 comprising a main flat portion and an upstanding peripheral flange 19 which embraces the periphery of the body 15 and makes contact with the casing at about the line of connection between the conical and flat portions thereof. Supported within the canopy and beneath the dead air space 17 is a heat insulating member 20 indicated as in the form of a disk of asbestos or its equivalent. This heat insulating member is substantially co-extensive with the flat portion of the canopy. A fastening member such as a bolt passes axially downward through the apex of the casing, the body 15, and the centers of the disk and canopy, serving to lock or fasten all of these parts together as a unit. While the design of the device as thus far described provides for maximum heat efficiency at the top where it is needed, there is no loss of heat downward nor danger of fire therefrom by reason of the air space and protection beneath it.

The grid 22 as shown comprises a rigid member of any suitable size, design, or

terial, depending upon the purpose for which it is to be used. As indicated it has a flat circular top and a depending solid body 23 having a central recess or cavity 5 formed as a counterpart of the conical casing 10 with which it is adapted to directly co-operate in practice. By reason of this construction of the grid it may be placed readily upon the heating unit and so be self centering and hence self leveling, a matter 10 of special importance not only for heating purposes but also for the baking of cakes or the like from soft batter. Moreover, the design of these cooperating parts lends it- 15 self to the easy interchange of various types of grids or other receivers for use successively on the same heating unit. With the grid made with a heavy solid body, it not only is well adapted for holding and dis- 20 charging uniform heat but also is best adapted for holding itself in position upon the casing. While I have indicated the heat receiving member in the form of a grid it is to be understood that the spirit of the in- 25 vention contemplates the provision of any suitable number, construction, or design of devices or utensils adapted for cooking purposes or for containing or supporting other bodies to be heated, and irrespective of 30 whether the bottom portion thereof for interchangeable co-operation with the heating unit is made solid or hollow. For instance, the heating unit is directly adapted for use as a base or support for a percolator whose 35 body or bottom is hollow but provided with a cavity which as described is the counterpart of the heating unit, and when removed from the base or heating unit will stand on its own bottom the same as any other per- 40 colator.

I claim:

1. In a heating device, the combination with a heat receiving member having a flat radiating surface, of a heating unit co-oper- 45 ating therewith, said member and unit being provided one with a tapered cavity on the side remote from the flat surface and the other being correspondingly tapered to mate therewith to hold them automatically 50 by direct surface contact in predetermined position with said flat surface horizontal.

2. A device as set forth in claim 1 in which the heating unit is provided with a projec- 55 tion extending upward into a similarly formed cavity in the heat receiving member.

3. A device as set forth in claim 1 in which the heating unit comprises an up- 60 wardly projecting centering point having a smooth surrounding contact surface.

4. A device as set forth in claim 1 in which the heating unit includes an upwardly projecting symmetrical cone constituting the

counterpart of a recess formed in the bot- tom of the heat receiving member.

5. The herein described electric heating unit comprising a casing with an upward tapered projection, a body fitted within and beneath said casing projection, a resistance member carried by said body, and means 70 extending through the casing and body to retain these parts together.

6. A device as set forth in claim 5 in which the body is provided with a recess in its bottom forming a dead air space, and means is provided to close said space. 75

7. A device as set forth in claim 5 in which the body is of insulating material and provided in its bottom with a recess forming an air space, and there is provided means 80 to close said air space including heat insulating material.

8. The herein described electric heating unit comprising a casing having an upward conical projection and a heating body there- 85 in for the delivery of heat and for cooperation with a similarly formed heat receiving member, said projection serving by direct surface contact to automatically center and retain said member.

9. In a device of the character set forth, a heat receiving member having a support- 90 ing body provided with a flat disk shaped top surface and an upwardly directed cavity in its bottom surface so as to be self centering and self leveling in co-operation with 95 a heat originating device having direct surface contact with the body.

10. A device as set forth in claim 9 in which the heat receiving member comprises a grid having a flat top with a downwardly 100 projecting body having a central upwardly projecting cavity therein.

11. The herein described electric heating unit comprising a conical casing of sheet material, a body of insulation of similar 105 form fitted within the casing, a canopy of sheet material embracing the body, and means to lock the casing and canopy in fixed relation to each other.

12. A device as set forth in claim 11 in which the body and canopy are so formed 110 as to provide a dead air space between them.

13. A device as set forth in claim 11 in which the body is provided with an up- 115 wardly projecting conical cavity forming a dead air space.

14. A device as set forth in claim 11 in which the canopy has a flat central body portion and an upstanding peripheral flange 120 making contact with the casing.

In testimony whereof I affix my signature.

FRANK E. WOLCOTT.