Sept. 30, 1930. L. R. BARBER 1,776,827

ELECTRICAL HEATING UNIT

Original Filed Jan. 18, 1927

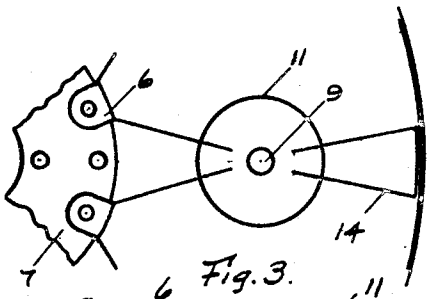



Fig. 3.

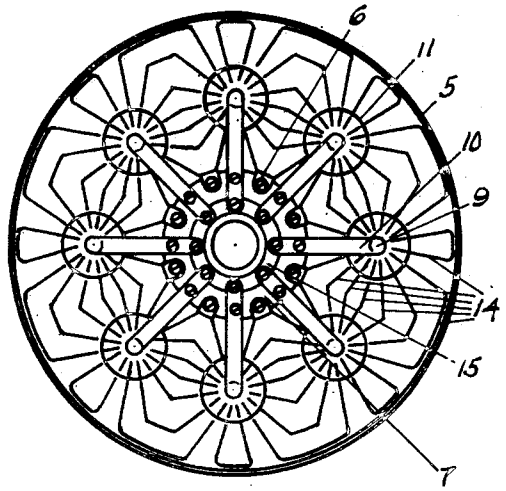



Fig. 2.

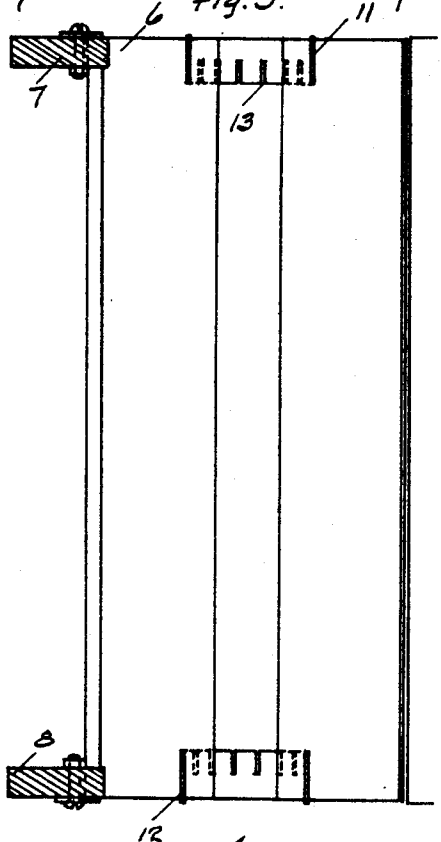



Fig. 4.

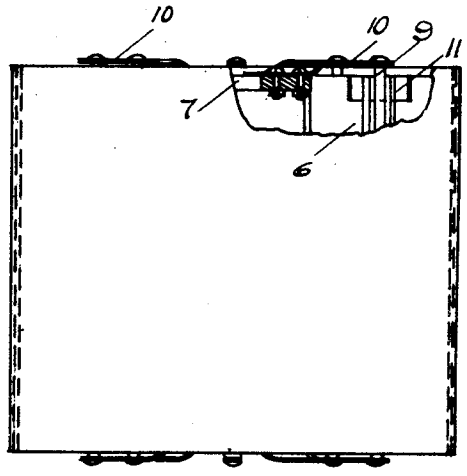



Fig. 1.

INVENTOR
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# UNITED STATES PATENT OFFICE

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## ELECTRICAL HEATING UNIT

Application filed January 18, 1927, Serial No. 161,835. Renewed October 30, 1928.

My invention relates primarily to a heating unit for heating dwellings and the like, and the primary object thereof is to provide a unit for use with an induced current of air, which will provide the maximum amount of radiation whereby the air passing therethrough will absorb the maximum amount of heat therefrom.

A further object is to provide in a device of this character means whereby the heat distribution may be adjusted to suit varying conditions.

A still further object is to provide a heater of the above character which will be simple in construction and operation, light in weight, and which may be easily and quickly transported from place to place, or which may be mounted permanently as desired.

Other objects and advantages will appear hereinafter and, while I have shown and will describe the preferred form of my invention, it will be understood that I do not limit myself to such preferred form but that various changes and adaptations may be made therein without departing from the spirit of my invention.

In the drawings accompanying and forming a part hereof

Fig. 1 is a top plan of one of my units, partly broken away, for clearness of illustration.

Fig. 2 is an end elevation of Fig. 1.

Fig. 3 is a greatly enlarged end elevation of a fragment of my heater showing a detail of construction.

Fig. 4 is a central longitudinal section through the parts shown in Fig. 3.

Referring to the drawings, my device comprises an outer cylindrical casing 5 which comprises the housing. Extending longitudinally of casing 5, centrally thereof and concentric therewith are a plurality of metallic plates 6 which are secured at each end to rings 7 and 8 of insulating material. Mounted within casing 5, between the inner walls thereof and the outer periphery of rings 7 and 8 are a plurality of heating elements 9 which are equally spaced around casing 5 and are supported at each end by bars 10, one end of said bars being secured to the ends of the heating elements and the other ends to ring 7. Surrounding each end of the elements 9, concentric therewith but spaced therefrom, are metallic collars 11 and 12, provided on their inner edges with a plurality of lengthwise slits 13 and rigidly mounted at their ends in these slits, to extend lengthwise of casing 5 are a plurality of radiating vanes or fins 14, these fins being arranged radially and being joined together at the limits of their radiating ends to form a continuous network of radiating passages throughout the length of casing 5. The heating elements have their poles connected by means of conductor bars 15 mounted upon the insulated rings 7 and 8 and to these bars 15 are connected the lead wires (not shown) of the supply circuit. I also contemplate an arrangement of terminals to be mounted upon rings 7 and 8 to permit the use of 110 volt elements in series on 220 volt circuit and also an arrangement of terminals whereby any number of the elements may be used independent of the others.

My heater is adapted for use either by mounting the same within a portable casing using a blower (not shown) to force air through the air passages, or it may be mounted within a permanent casing beneath the floor or in the walls of the building and provided with a remote control or it may be mounted within a casing in the basement of the building in multiples and a single blower used and controlled from any desired location.

Having described my invention what I claim is:

1. An electric air heating unit comprising an outer tubular housing; a plurality of heating elements mounted within said housing in spaced relation to extend lengthwise thereof; a concentric ring surrounding each end of each of said heating elements, and supporting thereby a plurality of radiating fins surrounding each of said heating elements and being so interconnected and arranged as to form a plurality of longitudinal air passages entirely surrounding each of said heat elements; supporting means for said elements;

and means to supply electric energy to said elements.

2. An electric air heating unit comprising a pair of insulating rings mounted in alinement but spaced apart; a plurality of terminals extending radially from each of said insulating rings, the terminals of said rings being in register with each other; connectors for the inner ends of said terminals; heating elements extending between the free ends of opposite terminals and being supported thereby; a ring surrounding each end of each of said heating elements concentric therewith but spaced therefrom; a plurality of heat dissipator plates connecting said rings whereby a continuous network of air passages are formed between said plates and around said heating elements to provide a maximum radiating surface.

3. An electric heating unit comprising a pair of insulating members mounted in alignment and spaced apart, a plurality of terminals extending radially from each of said insulating members; heating elements extending between companion terminals and connecting the same; a series of fins arranged longitudinally around said heating elements with their edges in proximity thereto and forming air passages therebetween.

In witness that I claim the foregoing I have hereunto set my hand this 12th day of January, 1927.

LEWIS R. BARBER.