

Oct. 20, 1931.

W. W. HICKS

1,827,788

ELECTRIC HEATER

Filed Nov. 27, 1926 2 Sheets-Sheet 1

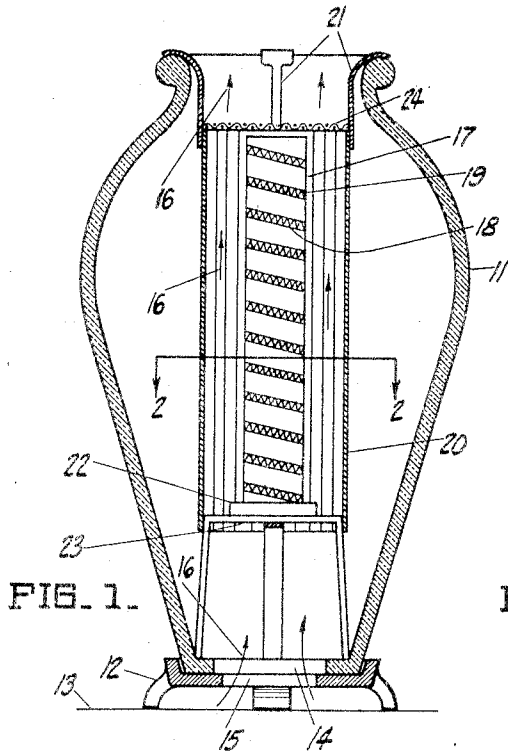


FIG. 1.

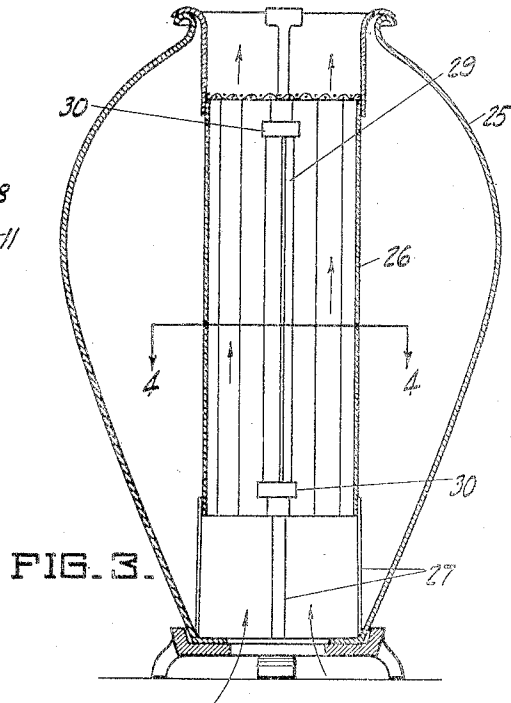


FIG. 3.

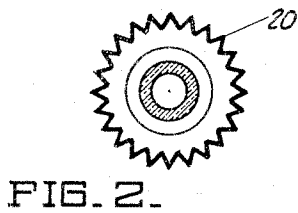


FIG. 2.

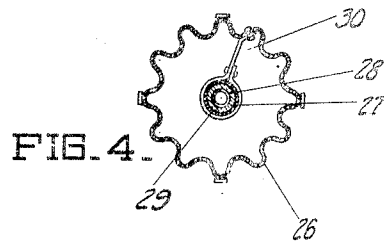


FIG. 4.

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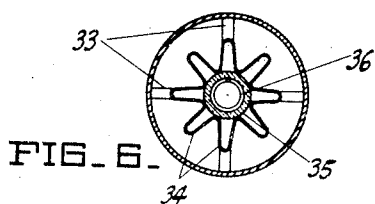
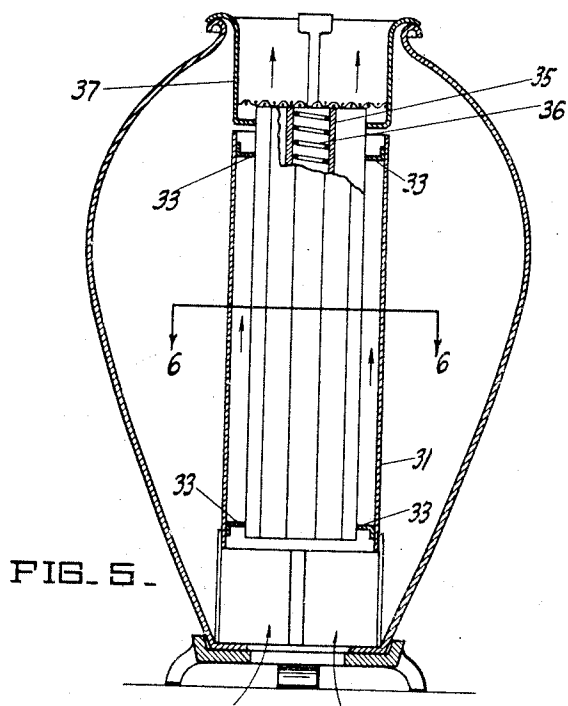
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ELECTRIC HEATER

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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ELECTRIC HEATER

Application filed November 27, 1926. Serial No. 151,206.

This invention relates to electric heaters, and particularly to room heaters used in dwellings.

Up to the present time, electric room heaters have taken several forms, such as the portable type, the wall or floor register type, and the fireplace type. With all such heaters, it is manifest that the artistic "feel" or character of the room where they are used, is noticeably disturbed; in other words, the heaters do not easily fit into the scheme of interior decoration; and this is most pronounced in homes where the most pains are taken to achieve harmony and beauty.

It is one of the objects of my invention to provide an electric heater that can readily be employed in the most carefully planned scheme of decoration without detracting therefrom. For this purpose, I provide a heater that outwardly resembles a vase or urn, but which has concealed within it, the heating element that provides the requisite movement of heated air.

In order to provide a practicable heater of this character, it is necessary to resort to certain novel features of construction, some of which are generally applicable to other forms of heaters. It is accordingly another object of my invention to provide in general an improved electric air heater.

My invention possesses many other advantages, and has other objects which may be made more easily apparent from a consideration of several embodiments of my invention. For this purpose I have shown a few forms in the drawings accompanying and forming part of the present specification. I shall now proceed to describe these forms in detail, which illustrate the general principles of my invention; but it is to be understood that this detailed description is not to be taken in a limiting sense, since the scope of my invention is best defined by the appended claims.

Referring to the drawings:

Figure 1 is a vertical section of a heater embodying my invention;

Fig. 2 is a horizontal section thereof, taken along plane 2—2 of Fig. 1;

Fig. 3 is a vertical section of a modified form of heater;

Fig. 4 is a horizontal section taken along plane 4—4 of Fig. 3;

Fig. 5 is a vertical section of a further modification; and

Fig. 6 is a horizontal sectional view taken along plane 6—6 of Fig. 5.

In Figs. 1 and 2, the form illustrated includes a vase or urn body 11, resting in this instance on a stand 12, of either wood or ceramic material. The vase is also shown as of ceramic material, but of course metal could as well be used. The stand 12 is provided to raise the bottom of vase 11 from the floor 13, and thus to permit cool air to enter through the aperture 14 in the vase. The base 12 has a corresponding aperture 15 so as to leave the flow of air unimpeded.

A convection current, flowing upward through vase 11 is secured by the aid of heating elements now to be described, which are located in the vase. Thus heated currents of air leave the vase at its mouth, as indicated by arrows 16. The heating element in this instance includes a hollow flue 17 of ceramic material, such as clay, having external grooves 18, in which is disposed a coiled heating wire 19. The flue or tube 17 is in a vertical position, and alined in the path of the air currents. The interior as well as the exterior of the tube 17 thus serves as a source of heat, transferring its heat to the moving stream of air around and through the tube. In this way, a very material movement of heated air can be secured for use in the room where the heater is located.

The direct radiation from heater tube 17 would make the vase undesirably hot. Furthermore, it is advisable to confine the movement of air adjacent the heater unit, so that a rapid heating current of air will result. Both these functions are performed by a tubular baffle 20 concentric with and surrounding tube 17, and deeply corrugated as shown in Fig. 2. In this instance the corrugations are V-shaped. The baffle itself can be made from thin copper or other metal.

In order to support the baffle 20 and tube 17 inside of vase 11, three or four hooks 21

can be provided which project over the edge of the mouth of the vase, and extend into it. They are fastened to the baffle 20, whereby the baffle is suspended from the mouth of the vase. The tube 17 is fastened, as by the aid of its flange 22, to a support 23 formed of strips of metal, the bottoms of which engage with the vase interior to keep the unit aligned. Alternatively, the hooks 21 could be omitted, the structure 23 then serving as a baselike support within the vase. The bottom of baffle 20 is fastened, as by soldering, to this support. Of course the baffle 20 and support 23 must be so constructed as to permit their insertion in vase 11. The overall diameter of baffle 20 is therefore less than that of the mouth of vase 11; while the legs of support 23 can be resiliently brought together while passing through the mouth. A wire screen 24 of coarse mesh can be placed over baffle 20 as a protection for the heater unit, and can be held in place in any appropriate manner. The hook portions of members 21 can be flattened and painted to be inconspicuous in vase 11. The corrugations in baffle 20 increase its internal surface for reflection of the heat received from the tube 17.

It is to be noted that the heater as shown can be used in the most carefully planned home, for the vase form thereof blends harmoniously with the other usual apurtenances. The source of heat, while entirely effective, has no objectionable appearance.

The particular details of the heater can be varied while retaining these advantages. Thus in Fig. 3 a metal vase 25 is shown in lieu of the ceramic one of Fig. 1. Substantially the same type of baffle 26 is shown, having however, rounded vertical corrugations; and rods 27 are fastened to its lower end to keep the baffle 26 in proper position with respect to the vase interior. The heating element itself in this instance includes a ceramic tube 27 in which a coil 28 of bare wire is inserted. A metal sheath 29 extends around the tube 27 and clamps it frictionally by resilient force, said sheath extending only partly around the tube. In order to support the element, a pair of metal bracket straps 30 is provided, adjacent the top and bottom of sheath 29, for suspending it from the interior of baffle 26. Of course other means for holding the unit could be used.

The operation of the form of heater shown in Figs. 3 and 4 is substantially the same as of that first described. Convection currents of heated air are produced around sheath and proceed from out of the mouth of vase 25.

In Figs. 5 and 6, still another form is illustrated. The baffle 31 is cylindrical, and is supported on the heating unit 32 by a series of brackets 33. The unit itself includes a series of vertical radiating fins 34 formed of a continuous piece of sheet metal. The inner portions of the fins frictionally engage

the ceramic tube 35 in which the heating coil 36 is disposed. The hooks 37 in this instance connect directly to the fins 34. These fins are purposely left open so as to permit air to pass through them, thus serving as individual flues.

The advantages of all three forms are substantially similar. They permit the use of electric heating in esthetic surroundings, without providing any jarring feature, such as is so common with the usual forms. The units themselves are of course of considerable size, so that rapid heating can be secured, with a large volume of heated air.

I claim:

1. In an electric air heater, a vessel having a vase contour but with an open large aperture in its bottom, the openings at the top and bottom being unobstructed at all times, a base for supporting said vessel above the floor and also having an aperture to permit free entrance of air into the vessel through said apertures, a tubular heating unit arranged vertically in the vessel and in line with the vertical passageway through said vessel, a metallic baffle having vertical deep corrugations, surrounding said heating unit, and means for positioning said baffle and heating unit within the vessel, comprising a plurality of hooks engaging the mouth of the vessel, said hooks depending into the vessel and having a connection with the baffle.

2. In an electric air heater, a hollow body having a bulging portion and open only near the top and bottom, an electric heating element arranged substantially in line with the vertical axis of the body, and a baffle surrounding the element and spaced intermediate the walls of the body and the element having a continuous uninterrupted face opposite to the interior of the body.

In testimony whereof I have hereunto set my hand.

WILLIAM WESLEY HICKS.