Jan. 3, 1928. 1,654,860

J. H. CARMEAN

ELECTRIC HEATER

Filed Feb. 5, 1926

Fig. 1.

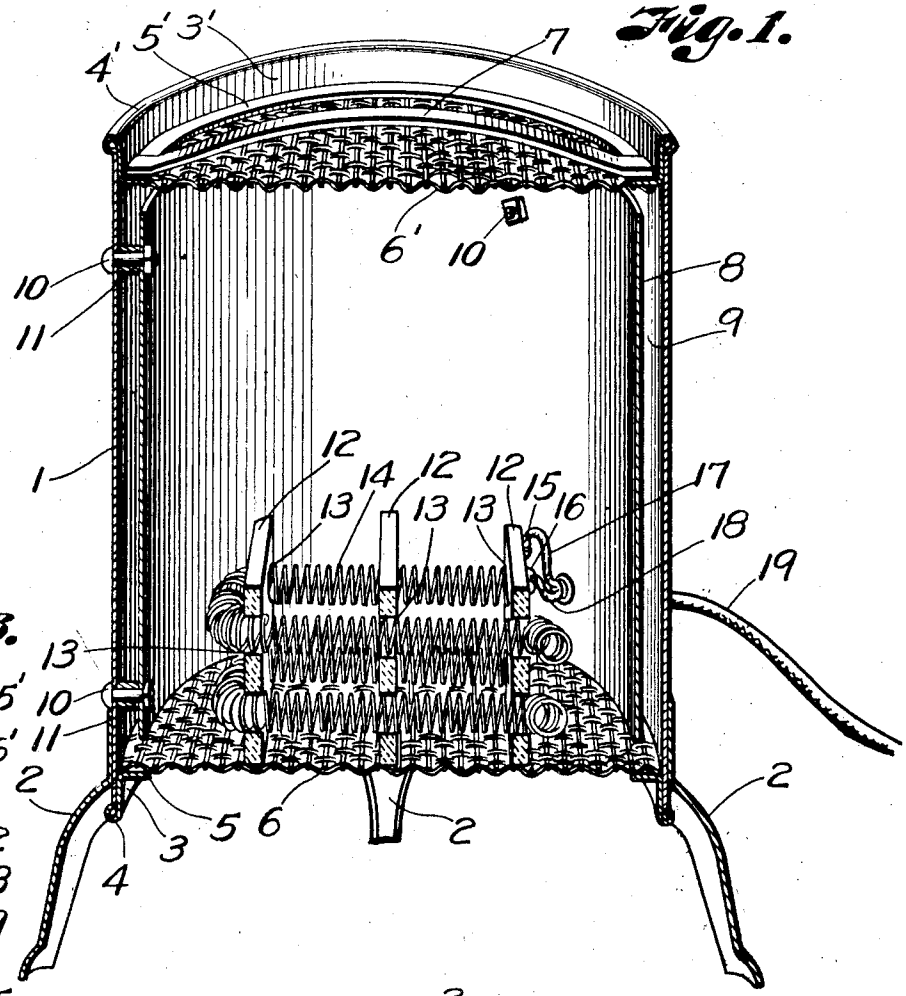


Fig. 3.

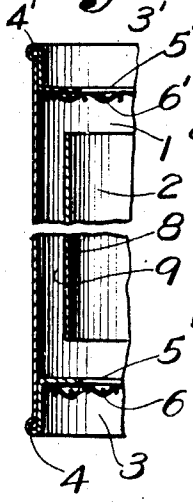
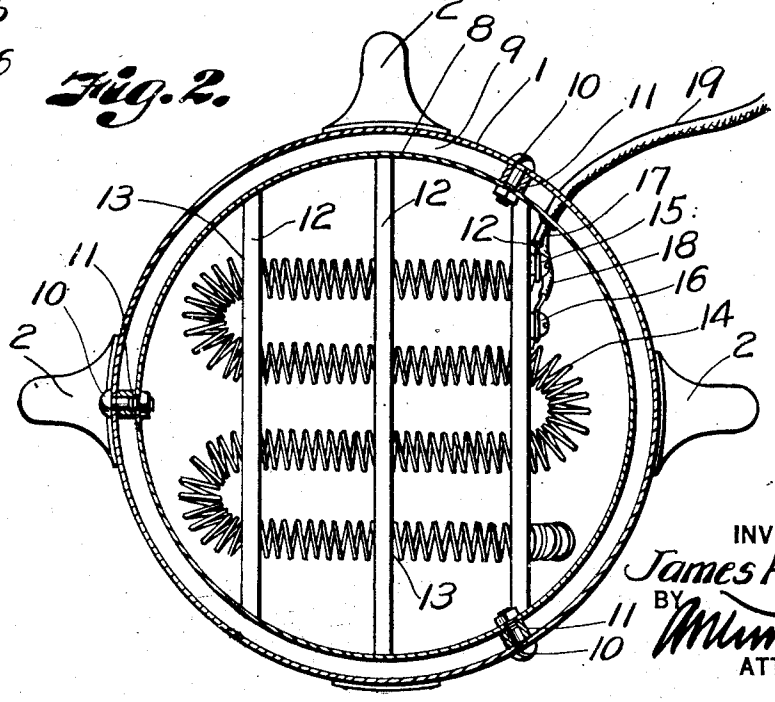


Fig. 2.



INVENTOR
James H. Carmean
BY
Munn & Brown
ATTORNEY

Patented Jan. 3, 1928. 1,654,860

UNITED STATES PATENT OFFICE.

JAMES H. CARMEAN, OF KANSAS CITY, MISSOURI.

ELECTRIC HEATER.

Application filed February 5, 1926. Serial No. 86,189.

My invention relates to electric heaters and more particularly to a portable heater of a type commonly used for supplementing the heating plant of a residence, in that it may be moved to whatever room of the residence an occupant may desire to furnish additional local heat in extremely cold weather or primarily heat the room in mild mild weather; the principal object of the invention being to increase the effectiveness of the heater by facilitating distribution of air heated by passage through the device.

A further object of the invention is to localize effect of the heating unit at the interior of the burner to avoid injury to persons or articles coming in contact with the outer wall.

In accomplishing these and other objects of the invention I have provided improved details of structure, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a vertical, sectional perspective view of a heater embodying my improvements.

Fig. 2 is a horizontal section of the heater.

Fig. 3 is a broken, vertical section of a portion of the heater, particularly illustrating relation of the flue drum to the housing wall and to the top and bottom screens.

Referring more in detail to the drawings:

1 designates a housing wall, preferably constructed of sheet metal, circular in cross section and having legs 2 welded or otherwise permanently secured to its outer face at one end, whereby the heater may be supported a sufficient distance above a floor or other base to permit air to circulate freely to and through the interior of the housing from beneath.

Fitted into the lower end of the housing wall and held snugly thereto by frictional contact is a ring 3 having a bead 4 at its outer edge overlying the edge of the housing and constituting a handle whereby the ring may be inserted into and removed from the housing, and having an inturned flange 5 at its inner edge, forming a shelf for supporting a screen 6. The screen is welded or otherwise attached to the shelf flange 5 and, when the ring is in place, forms a floor for completely closing the bottom of the housing, but through which air may pass to constitute a circulating heating medium.

At the top of the housing is a ring 3′, having a bead 4′, a flange 5′ and a screen 6′, corresponding to like parts heretofore described as located at the bottom of the housing; the upper ring, however, being provided with an arched cross strip 7, constituting a handle whereby the heater may be carried from place to place, the ring fitting the housing sufficiently close to support the weight of the heater, although being capable of removal therefrom when desired.

Located within the housing wall is a cylindrical flue drum 8, of sufficiently less diameter than the housing to provide an annular air space 9, and supported in place by bolts 10 which pass through the housing, through the drum and through spacers 11 which center the drum relative to the housing wall and tend to maintain the air space at uniform width throughout its circumference and height. There may be any suitable number of such bolts, arranged in any effective relation or series, but serving to retain the flue drum spaced from the bottom and top rings so that cool air entering beneath the housing may pass through the bottom screen, over the bottom ring flange, into and through the annular air space to exit between the top of the flue and upper ring flange and out through the upper screen, absorbing and carrying off heat radiated from the flue drum and preventing heating of the housing wall. Other air entering the interior of the flue drum passes over a heating unit contained within the drum, to be delivered through the upper screen at a temperature sufficient to raise that of the room within which the heater is contained.

The heating unit which I prefer to employ consists of a skeleton frame of spaced, parallel plates 12 of porcelain or other non-conductive material, shaped and dimensioned to fit snugly within the flue drum and be held thereto by frictional contact of their ends with the inner face of the drum; the plates having registering apertures 13 through which a resistance wire 14 is passed in hairpin coils and in vertical tiers. Opposite ends of the coil wire are provided with binding posts 15 and 16 for connection with the line wires 17 and 18 that are conducted through the drum and housing in a cord 19 for connection with a fixture or wall socket by a switch plug (not shown).

Operation of a heater constructed and assembled as described is obvious. When located in a room and connected with a source

of current, the coil is heated, causing a thermo-siphonic circulation through the drum and jacket, to heat the inner volume of air and prevent heating of the housing wall.

By removably mounting the top and bottom screens, cleaning, replacements and repairs may be easily effected.

Economy and ease of construction, operation and assembly of a heater constructed as described is also obvious from the foregoing disclosures read in connection with the accompanying drawings.

What I claim and desire to secure by Letters Patent is:—

1. A heater of the character described, comprising a housing wall, a ring fitting within said wall, having an inturned shelf flange, a screen on said shelf flange, closing the end of the housing wall, a flue drum within the housing wall, spaced from the wall and from the screen, and a heating unit within the flue drum.

2. A heater of the character described, comprising a housing wall, a ring fitting within said wall, having an exposed bead overlying the edge of the housing wall, and having an inturned shelf flange, a screen on said shelf flange, closing the end of the housing wall, a flue drum within the housing wall, spaced from the wall and from the screen, and a heating unit within the flue drum.

3. A heater of the character described, comprising a housing wall, top and bottom rings in said wall, each having an inturned shelf flange and a screen attached to said flange, and an arched strip attached to the upper ring and constituting a handle.

4. A heater of the character described, comprising a housing wall, a ring fitting within said wall, having an inturned shelf flange, a screen on said shelf flange, closing the end of the housing wall, a flue drum within the housing wall, spaced from the wall and from the screen, and a heating unit within the flue drum comprising non-conductive, spaced plates and a resistance coil carried by said plates.

5. A heater of the character described, comprising a housing wall, a ring fitting within said wall, having an inturned shelf flange, a screen on said shelf flange, closing the end of the housing wall, a flue drum within the housing wall, spaced from the wall and from the screen, and a heating unit within the flue drum comprising non-conductive, spaced plates and a resistance coil carried by said plates and feed wires for the coil extending through the flue drum and housing wall.

In testimony whereof I affix my signature.

JAMES H. CARMEAN.