C. A. MUIR.

COMBINATION ELECTRIC AND GAS HEATER.

APPLICATION FILED JAN. 30, 1922.

1,418,667. Patented June 6, 1922.

FIG. 1.

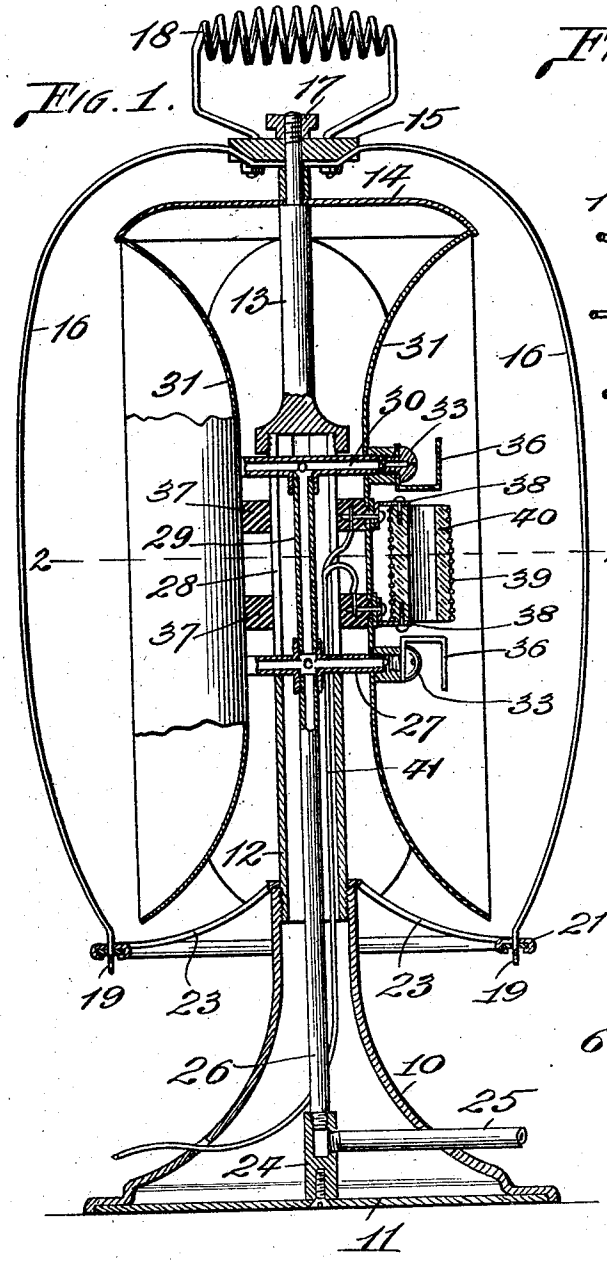


FIG. 2.

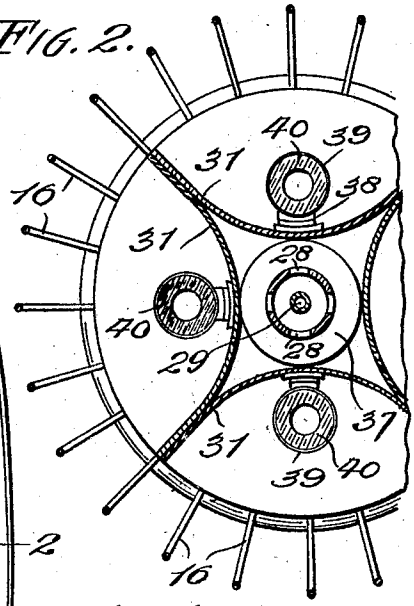


FIG. 3.

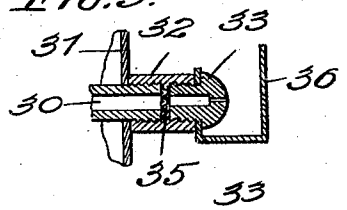


FIG. 4.

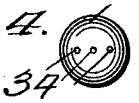


FIG. 5.

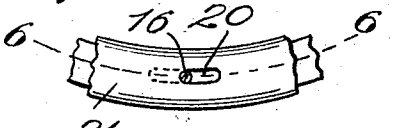
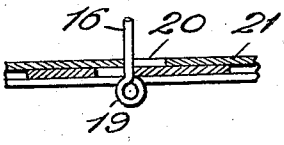


FIG. 6.



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COMBINATION ELECTRIC AND GAS HEATER.

1,418,667. Specification of Letters Patent. Patented June 6, 1922.

Application filed January 30, 1922. Serial No. 532,654.

To all whom it may concern:

Be it known that I, CARRIE A. MUIR, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Combination Electric and Gas Heaters, of which the following is a specification.

My invention relates to a portable heater for household use, the principal objects of my invention being to provide a relatively simple, practical and efficient device that is equipped with heating coils and burners, thereby enabling the heater to be used wherever electric current or gas are available and further to provide a combination electric and gas heater that may be very easily and cheaply produced and which will be very effective in performing its intended functions.

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

In the drawings:

Fig. 1 is a vertical section taken lengthwise through the center of a heater of my improved construction.

Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1.

Fig. 3 is a detail section of one of the gas burners of the heater.

Fig. 4 is a front elevational view of one of the gas burner tips.

Fig. 5 is a detail plan view of a portion of a ring that is utilized for supporting the lower ends of the guard wires that surround the body of the heater.

Fig. 6 is a cross section on the line 6—6 of Fig. 5.

Referring by numerals to the accompanying drawings 10 designates a hollow bell shaped base in the lower portion of which is arranged a plate 11. Screw seated in the upper end of the base 10 is the lower end of a tube 12, and screw seated on the upper end of said tube is the lower end of a post 13.

The upper portion of this post supports a disc 14 of sheet metal and arranged above said disc on the post is a small disc 15 that serves as a support for the upper portions of outwardly bowed guard wires 16.

Disc 15 is retained on the post 13 by a nut 17 that is screwed onto the upper ends of said post and connected to loops that project upwardly from said disc are the ends of a handle 18, preferably of coiled wire and by means of which the heater may be lifted and carried.

The lower ends of the guard wires are provided with loops 19 that pass through coinciding slots 20, that are formed in rings 21 and 22, the former being carried by arms 23 that are supported from the top of base 10 and ring 22, being arranged for rotation beneath said ring 21.

Secured to the center of plate 11 is a block 24 to which leads a gas supply pipe 25 that passes through base 10 and seated in the top of said block 24 is the lower end of a tube 26 that extends upwardly through tube 12.

The upper end of tube 26 is seated in the center of a four way connection 27, the arms of which extend outwardly through slots 28 in the upper portion of tube 12. Seated in and projecting upwardly from the center of connection 27 is a tube 29, to the upper end of which is connected a four way connection 30, the arms of which project through the slots 28 in tube 12.

The outer portions of the arms of connections 27 and 30 project through the central portions of vertically disposed concave heat reflecting members 31, preferably constructed from sheet metal, said members being radially arranged about the tube 12 and their upper ends being connected to disc 14 adjacent to the edge thereof.

Secured to the outer ends of the arms of connections 27 and 30 by nipples 32 are burner tips 33, each having a plurality of jet apertures 34 and arranged within each nipple and between the end of the arm and tip is a section of wire gauze 35 that serves as a strainer.

Secured to each burner tip is the inner portion of a jet deflector 36.

The deflectors on the upper series of nipples are arranged so as to deflect the burning jets of gas upwardly from said nipples and the deflectors on the lower series of nipples being reversely arranged so as to deflect the burning jets of gas downwardly.

Encircling the tube 12 between the members 27 and 30 are rings 37 of insulating material, portions of which extend through openings in the members 31 and secured to rings and positioned between the nipples 32 are brackets 38 that are connected to the

exposed heating coils 39 on tubular cores 40 of porcelain or like material.

The brackets 38 are insulated from the members 31 and electrically connected to said brackets 38 are conductors 41 that lead downwardly through tube 12 and out through an opening in base 10, and which conductors are adapted to be connected to a suitable source of current supply.

As current is turned on through the conductors 41 the coils 39 will become highly heated and the heat will be radiated and thrown outwardly by the concave members 31.

Likewise when gas is permitted to flow through pipes 25 and 26 said gas will burn at the tips 33 and the heat of said burning gas will be radiated outwardly in all directions by the members 31.

A combination heater of my improved construction is comparatively simple, may be easily and cheaply produced and provides a very efficient and convenient heating device that is applicable for use wherever gas and electric current are available.

I claim as my invention:

1. In a heating device, a standard, a series of concave heat reflecting members disposed about said standard, and an electric heating coil and a gas burner arranged within each reflecting member.

2. In a heating device, a hollow standard, a series of heat reflecting members disposed about said standard, an electric heating coil and a gas burner disposed within each heat reflecting member, a gas supply tube leading through the hollow standard to said gas burners and electric conductors leading through said hollow standard to said electric heating coils.

3. In a portable heater, a standard, a disc supported by the upper portion of said standard, a series of heat reflecting members arranged beneath said disc and disposed about said standard and an electric heating coil and a gas burner arranged within each heat reflecting member.

4. In a combined electric and gas heater, a standard, a series of concave heat reflecting members disposed about said standard, an electric heating coil arranged adjacent to the center of each reflecting member and gas burners arranged within each reflecting member above and below the electric heating coil therein.

CARRIE A. MUIR.