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RADIANT GAS BURNER APPARATUS

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2 Claims. (Cl. 158—113)

This invention relates to improvements in gas burner apparatus.

The principal object of the invention is the provision of gas burner apparatus which is constructed and arranged for installation in the fire box or heating section of a range such as a gas range.

Domestic gas ranges are usually provided with fire boxes or heating sections or compartments which are separate from baking and other compartments. Burners are installed in the fire boxes, an outer side or sides of which are provided with openings or grills and thereby the gas range functions for general room heating in addition to its function for cooking, baking and the like.

The burner construction of the invention is adapted for use with various types of gas and by reason of its novel construction and arrangement is efficient in operation.

All of the above objects I accomplish by means of such structure and relative arrangements of parts thereof, as will fully appear by a perusal of the description below and by various specific features which will be hereinafter set forth.

To the above cited and other ends and with the foregoing and various other novel features and advantages and other objects of my invention as will become more readily apparent as the description proceeds, my invention consists in certain novel features of construction and in the combination and arrangement of parts as will be hereinafter more particularly pointed out in the claims hereunto annexed and more fully described and referred to in connection with the accompanying drawings wherein:

Fig. 1 is a side elevational view of gas burner apparatus embodying the novel features of the invention;

Fig. 2 is a plan view of the burner apparatus shown in Fig. 1 but with the radiating shell removed;

Fig. 3 is an end elevational view of the burner apparatus shown in Figs. 1 and 2; and

Fig. 4 is a perspective view of a portion of one of the shelf members of the apparatus.

Referring now to the drawings more in detail, the invention will be fully described.

A platform or base plate is represented by 2 and is formed from sheet metal. Said platform will be of such dimensions as to fit between the opposite and adjacent side and end walls of a fire box in its horizontal position therein.

A burner 4 is provided which is hollow and formed to have outer and intermediate longitudinal runs 6 and 8 which are connected by transverse end portions 10 and 12.

The plate 2 is provided with an opening 3 in which the burner 4 is located and ears 14 of the burner support the plate 2 and are secured thereto by screws 16.

The sides and ends 18 and 20 of the opening of the plate 2 are spaced outwardly of the sides and ends of the burner 4 to provide spaces for the upward flow of secondary air indicated by arrows *a* in Fig. 3.

The portions 6 and 8 of the burner provide spaces indicated by 7 in Fig. 2 for the upward flow of secondary air indicated by arrows *b* in Fig. 3.

A stem 24 depends from the lower side of the burner 4 and is slidably adjustable in a tubular part 26 of a support 28. The burner will be supported from the lower wall of the fire box of a range and the stem 24 is held in various positions by a binding screw 30 of the part 26.

An inlet 32 is provided at one end of the burner 4 which may be connected to a suitable supply of gas.

The burner 4 is provided on its upper side with a multiplicity of gas emitting ports 34. These may be arranged in various ways but will function as desired when they extend in double rows throughout the length of the runs of the burner.

Elongated shelf members 40 have lower flanges 42 secured in transversely spaced relation to the plate 2 by any suitable means such as rivets 44. Said members 40 incline inwardly or converge relatively as they extend upwardly from the plate 2 and on upper portions are provided with elongated horizontal shelves 46 and side and end vertically extending flanges 48 and 50, see Fig. 4.

An elongated radiating element 60 is provided which is formed from ceramic material and curves upwardly from opposite longitudinal side edges. Said element transversely is in the form of a half tube. Opposite longitudinal side edges of the element 60 rest on the shelves 46. The element 60 is provided with relatively spaced slots 62 and holes 62' and 64 therethrough.

With the burner apparatus in operation in the compartment of a range, gas is emitted from the ports of the burner 4. Secondary air flows upwardly between the sides and ends of the burner and the sides of the opening of plate 2 in which the burner is located and upwardly through the spaces 7 of the burner. Said air mixes with the gas from the burner port so that combustion takes place within the elongated chamber formed by the members 40 and element 60. Products of combustion flow through the slots and openings of the element as indicated by arrow *c*.

The construction of the apparatus is such as to take advantage of the superior heating of blue flame operation and obviates the disadvantages of yellow flame operation such as sooting and the like. Blue flame operation is more efficient and economical but such a flame does not radiate heat to the extent of a yellow flame. The apparatus is constructed and arranged in such a manner that the blue flame heats the element 60 to the point where it glows and becomes red hot whereby said element functions to radiate heat to the walls of the compartment in which the apparatus is located.

The invention may be embodied in other specific forms without departing from the essential characteristics thereof. Hence, the present embodiments are therefore to be considered in all respects merely as being illustrative and not as being restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all modifications and variations as fall within the meaning and purview and range of equivalency of the appended claims are therefore intended to be embraced therein.

What it is desired to claim and secure by Letters Patent of the United States is:

1. Gas burner apparatus comprising in combination, an elongated horizontal base plate provided with an elongated opening having opposite and adjacent sides and ends, a burner secured to said base plate having sides and ends spaced inwardly from the sides and ends respectively of said opening, elongated shelf members having lower portions secured to said base plate along opposite sides of the opening therein and extending upwardly from said base plate, elongated supporting shelves on

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upper portions of said shelf members disposed above the plane of the upper side of said burner and base plate, and an elongated dome member formed from ceramic material to have a transversely convexed wall between and above said shelf members and provided with opposite transversely spaced longitudinal lower edges disposed on said supporting shelves, said wall of the dome, shelf members and upper side of the burner cooperating to form an elongated open ended horizontally disposed combustion chamber therebetween, said wall of the dome provided with transversely spaced rows of longitudinally spaced openings and the upper side of said burner provided with upwardly directed gas ports.

2. Gas burner apparatus set forth in claim 1 wherein

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said shelf members relatively converge upwardly from said base plate.

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