Jan. 16, 1962 J. RABBITT 3,016,949

FUEL BURNER

Filed Aug. 24, 1956

Fig. 1

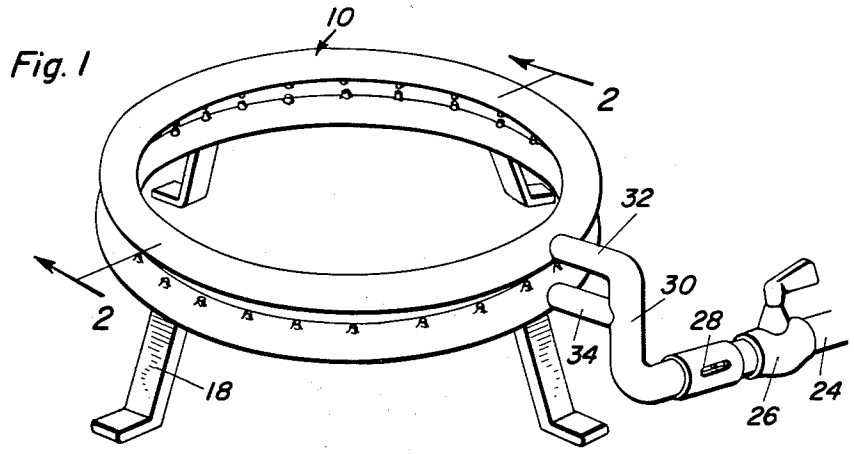


Fig. 2

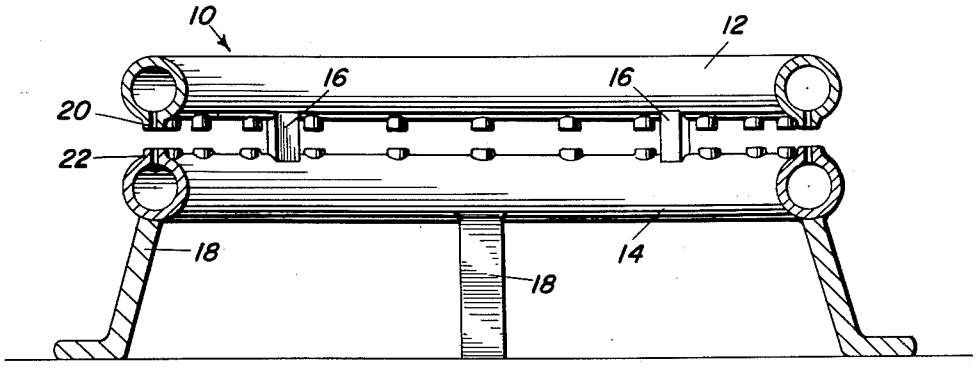
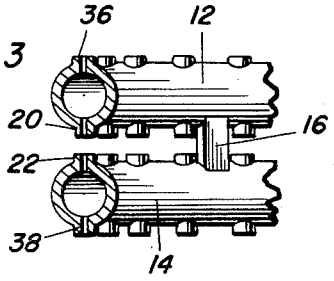


Fig. 3



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United States Patent Office 3,016,949 Patented Jan. 16, 1962

3,016,949

FUEL BURNER

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Filed Aug. 24, 1956, Ser. No. 606,071
2 Claims. (Cl. 158—104)

This invention comprises novel and useful heating device and more particularly relates to an apparatus for producing a multiplied heating effect from a plurality of burner units or heating elements.

The primary object of this invention is to provide a device for producing a more concentrated heating effect by an improved association of a plurality of burner or heater elements.

A further object of the invention is to provide a heating device in accordance with the foregoing object whereby a pair of burner or heater elements may be disposed in opposed relation to each other whereby to produce a reinforced or augmented heating effect.

Yet another object of the invention is to provide a heating device incorporating therein a pair of gas burner elements disposed in spaced parallel relation and whereby burner nozzles on adjacent opposed faces of the elements may be disposed in vertical relation for producing a reinforcing effect upon the heat from each unit.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view showing a suitable form of apparatus incorporating therein the principles of this invention;

FIGURE 2 is a vertical transverse sectional detail view taken upon an enlarged scale substantially upon the plane indicated by section line 2—2 of FIGURE 1; and

FIGURE 3 is a fragmentary view similar to FIGURE 2 but showing a modified construction in accordance with the invention.

Referring first to FIGURES 1 and 2, it will be seen that the heating device therein consists of upper and lower wedge shaped heating elements 12 and 14 respectively which in the form illustrated are spaced vertically from each other, being rigidly connected together by means of suitable supports 16. Supporting legs 18 may be provided whereby the assembly shall be supported in any desired manner. Upon the adjacent faces of heating elements 12 and 14 there are provided burner nozzles 20 and 22 respectively which project toward each other. A combustible fluid medium such as gas, oil or any other medium is supplied to any suitable source of supply as by a pipe 24 under the control of a manual control valve 26, by means of an air affixing nozzle 28 to the conduit 30 which by branch conduits 32 and 34 discharges into the upper and lower rings 12 and 14.

In the arrangement illustrated the combustible fuel flowing through the upper and lower rings is discharged from the nozzles 20 and 22 in streams which are directed towards each other as will be apparent from FIGURE 2. Thus, the spray of combustible from the nozzles of the element 20 impinge upon the spray of combustible from the nozzles 22 of the element 14. These impinging sprays cause a resultant flow of combustible mixture, a part of which will flow into the space within the ring, while the remainder will flow outwardly to the space surrounding the ring.

The combustion of this mixture will produce a flame and develop heat in a ring-like conformation both within and outside of the vertically aligned rings thereby producing a more intense heating effect. In this particular instance, it is obvious that the arrangement of the two ring-like heater elements 12 and 14 with their opposed flow of combustible fluid will produce two concentric circles or rings of flame, thus giving a more wide spread area of flame and a more intense flame for a given over-all vertical height of the apparatus.

It will be readily understood that although the two heating elements have been shown and illustrated as being vertically spaced with respect to each other, they may be positioned in other than the horizontal plane, while still retaining the basic principle of opposing streams of combustible fluid which mingle with each other and divide to produce a pair of combustion rings.

Further, although the lower ring 14 has been shown supported by the legs 18, it is obvious that the device may be mounted in any desired manner as in a stove, oven or the like.

As illustrated in FIGURE 3, it is also possible to still further increase the output of heat from the device, by causing the upper and lower heating rings or elements 12 and 14 to be provided with upwardly and/or downwardly directed discharge nozzles 36 and 38 respectively. In this particular form, there will thus be provided four distinct heating zones. There will be as mentioned in connection with the above of FIGURES 1 and 2, an inner and outer ring of combustion generated by the nozzles 20 and 22. In addition, there will be an upwardly positioned additional ring of combustion from the nozzles 36 and/or a downwardly directed ring of combustion from the nozzles 38.

Further, a set of the nozzles 20, 22, 36 and 38 are disposed in vertical alignment with each other, and may be relatively staggered in any desired manner.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A gas heating device comprising vertically alined and spaced ring-shaped burners, means for rigidly supporting and connecting said burners in rigid relation and in horizontal planes, burner nozzles projecting from the opposed horizontal faces of said burners in vertical alinement with each other for producing vertical streams of a combustible mixture impinging upon each other between the upper and lower burners whereby to effect an annular zone of combustion gases between said burners and extending horizontally both within and without the burners, means supplying a combustible mixture to each of said burners.

2. The combination of claim 1 wherein said support means comprises members mounted upon the top surface of the lower burner and engaging and supporting the lower surface of the upper burner.

References Cited in the file of this patent

UNITED STATES PATENTS

587,313	Johnson	Aug. 3, 1897
1,223,308	Bone et al.	Apr. 17, 1917
1,238,011	Ellis	Aug. 21, 1917
1,613,611	Kerr	Jan. 11, 1927
2,455,839	Walton	Dec. 7, 1948
2,563,080	Stalego	Aug. 7, 1951