Sept. 5, 1950 O. C. KUEHNE 2,521,584

MULTICHAMBERED GAS BURNER

Filed Dec. 17, 1945 2 Sheets-Sheet 1

FIG. 1

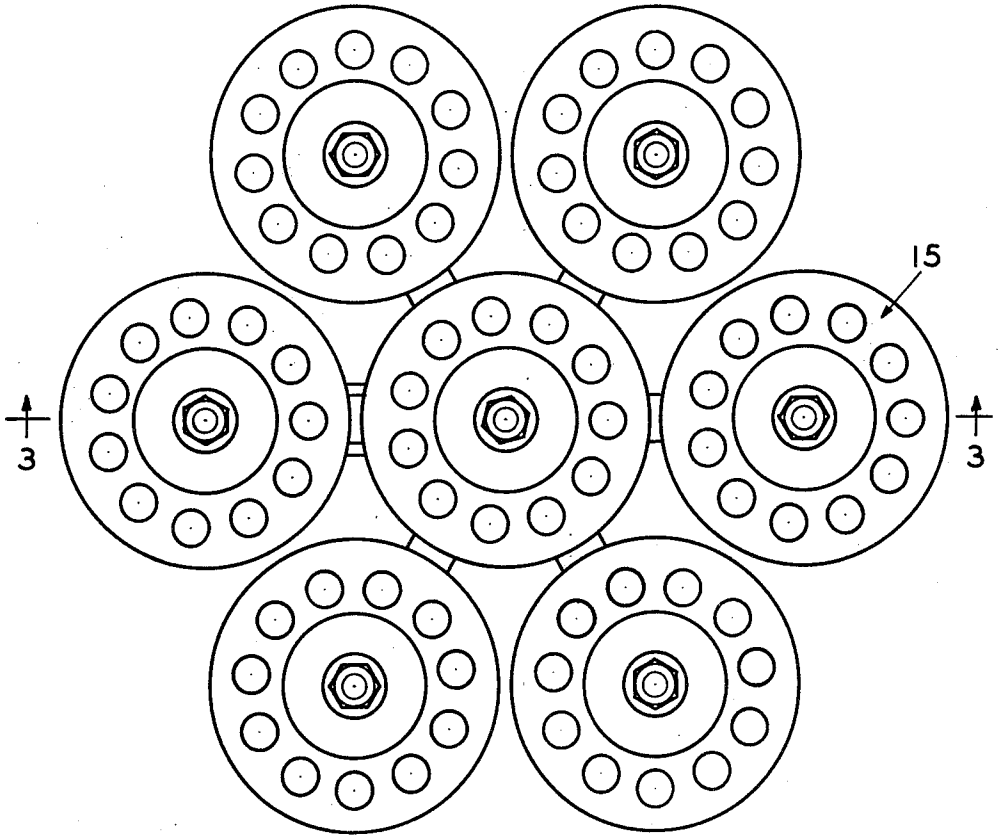
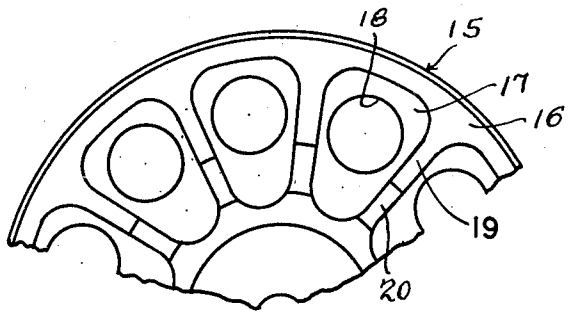


FIG. 2



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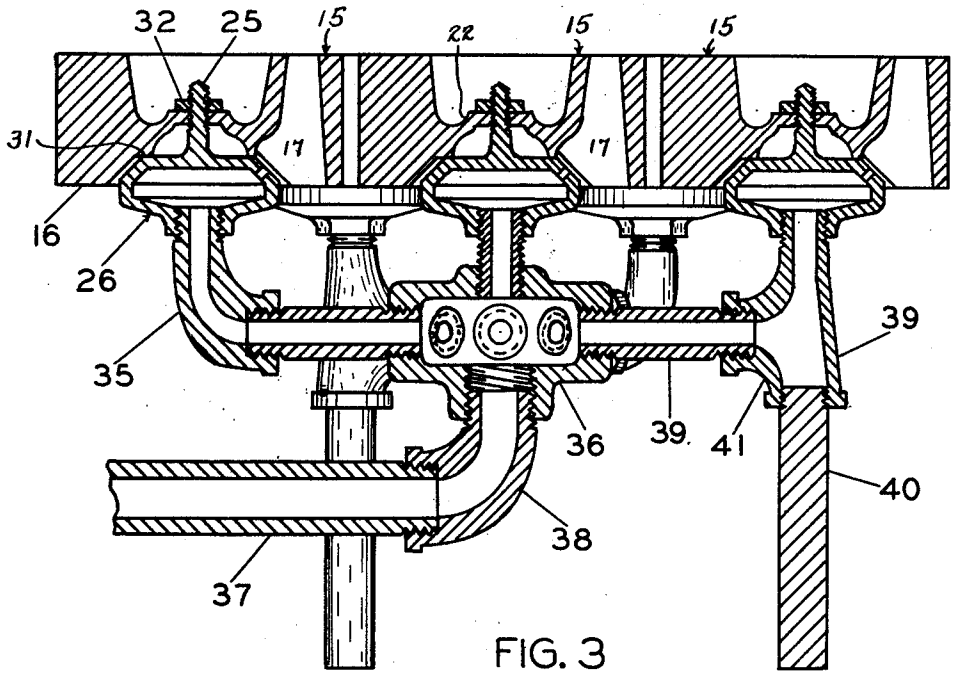


FIG. 3

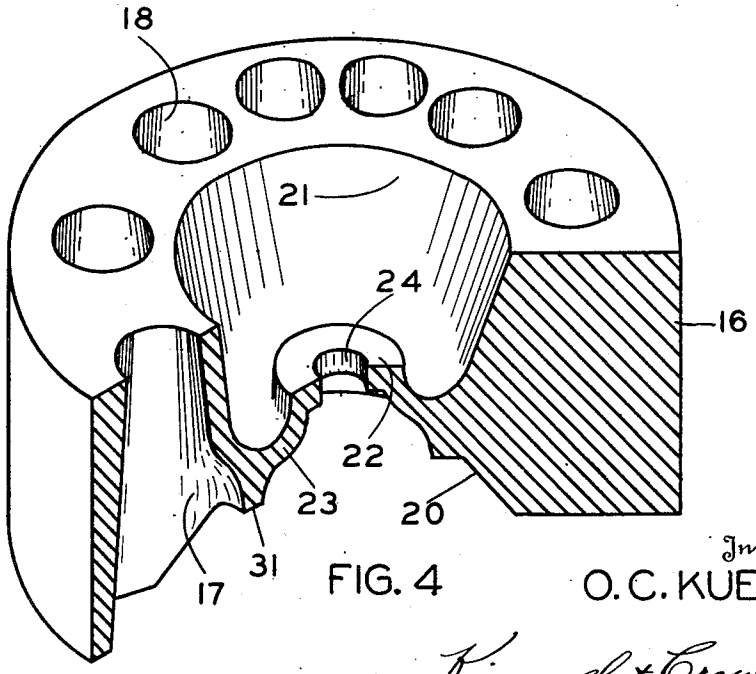


FIG. 4

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MULTICHAMBERED GAS BURNER

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Application December 17, 1945, Serial No. 635,540

1 Claim. (Cl. 158—106)

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This invention relates to fuel burners and more particularly to a fuel burner which is formed with a cast iron head having a plurality of mixing chambers therein within which the fuel is discharged from a plurality of jet openings in the multi-jet nozzle.

An object of this invention is to permit ease and flexibility of assembly of a plurality of connected burners in order to conform to various types or shapes of heating equipment.

A further object of this invention is to provide each burner head with an individual multi-jet nozzle, so designed as to permit individual jet openings for each mixing chamber, thereby resulting in uniform heat intensity.

A further object of this invention is to provide a burner of this type wherein the multi-jet nozzle is so designed to cause fuel to enter mixing chamber at the proper angle and location with the correct velocity to insure maximum combustion, and requiring no adjustment.

A further object of this invention is to provide a burner of this type wherein the burner head and multi-jet nozzle are so designed and assembled as to permit a straight line flow of air augmented by the fact that the force of the fuel entering the mixing chambers will serve to draw in the air from the bottom of the burner through the mixing chamber.

A further object of this invention is to provide a burner of this type having a multi-jet nozzle of non-corrosive material with jet openings in a protected position unaffected by settling foreign matter and corrosive action of flame thereby insuring maximum efficiency over a longer period of operation.

A further object of this invention is to provide a burner of this kind which may be used for gas, such as natural gas, or the like, and which will provide a maximum of heat generating means.

With the foregoing objects in view, and others which may hereinafter appear, I have invented the device shown in the accompanying illustrations wherein are shown embodiments of this invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is a plan view of a burner assembly constructed according to an embodiment of this invention.

Figure 2 is a fragmentary bottom plan view of one of the burner heads.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a perspective view, partly broken away and in section, of one of the burner heads.

Referring to the drawings, the numeral 15 designates generally a burner and, as shown in Figure 1, there are a plurality of burners connected together for positioning in the lower portion of a boiler or heating equipment.

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Each burner 15 comprises a burner head 16 which is formed with a plurality of circumferentially and equally spaced apart mixing chambers 17 which taper upwardly with the larger end thereof lowermost. The mixing chambers 17, at the lower ends are of substantially triangular configurations as shown in Figure 2, and taper upwardly and terminate in a round discharge opening 18.

The several mixing chambers 17 are separated from each other by means of ribs 19 which, at their inner ends, are bevelled or tapered, as indicated at 20.

The central portion of the body 16 is formed with a depression or recess 21 and an upwardly extending boss 22 is formed integral with the bottom wall 23 of the recess 21. The boss 22 is formed with a central opening 24 through which the threaded stud 25 of a multi-jet nozzle, generally designated as 26, is adapted to engage. The nozzle 26 includes a cylindrical side wall 27 having extending upwardly therefrom a frusto-conical wall 28 provided with a plurality of jet openings 29.

The nozzle 26 includes a flat top wall 30 which is engageable on a seat 31 formed at the inner end portions of the ribs 19. The threaded stud 25 extends upwardly from the center of the top wall 30, and is adapted to be secured in the opening 24 by means of a nut 32. The openings 29 are upwardly directed for discharging fuel, such as gas or the like into the large lower end portion of each mixing chamber 17 so that the air entering the bottom of the burner head 16 will be forced upwardly for mixture as it moves upwardly through the chamber 17 with the fuel from the jet openings 29. The nozzle 26 also includes a bottom wall 33 formed with a threaded boss 34 with which an L 35 is adapted to be connected

The several burner heads receive their fuel from a multi-port connector 36 which is connected to a fuel supply pipe 37 by means of an L 38.

As shown in Figure 3, certain ones of the pipe fittings connecting the nipples 39 with the nozzles 26, are T-shaped, as indicated by the numeral 39, and supporting legs 40 are threaded into the lower branch 41 of the T 39.

The burner heads may be formed from cast material and the same is true of the nozzles and as the fuel is burned at a point spaced from the ejection of the fuel from the jet openings these openings or jets will not readily become corroded.

I claim:

A burner comprising an annular burner head having a centrally disposed recess on the under side thereof, said recess being provided with a downwardly diverging wall, a shoulder forming

an annular seat about said recess intermediate the top and bottom thereof, a fuel nozzle having an upwardly converging side wall provided with spaced fuel outlets and a top wall upon which said shoulder is adapted to seat whereby the lower portion of the diverging side wall of said recess is juxtaposed with the converging side wall of said nozzle, said head being provided with a plurality of circumferentially spaced, upwardly tapered, axially disposed bores extending therethrough, each bore having an outwardly flared lower portion communicating with said recess adjacent one of said fuel outlets whereby fuel is emitted from each of said outlets into one of said bores, the latter forming a mixing chamber.

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