

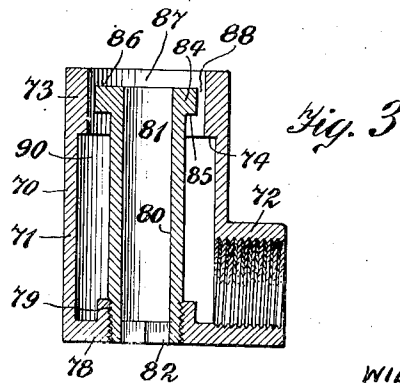
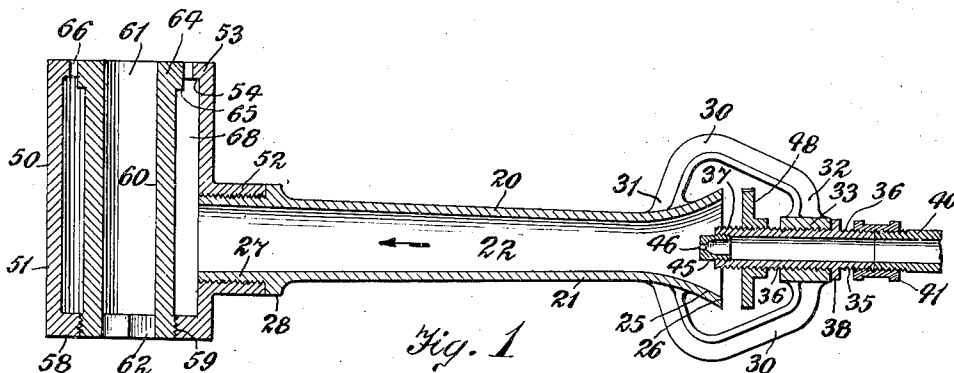
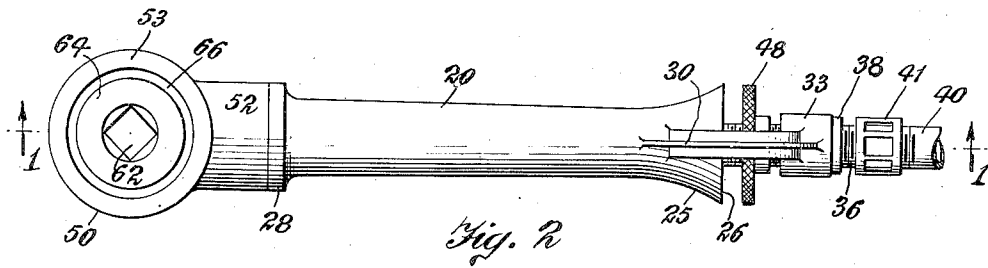
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NOZZLE GAS BURNER

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NOZZLE GAS BURNER

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3 Claims. (Cl. 158—110)

This invention relates to a nozzle gas burner.

The object of the invention is the production of a gas burner, with which a straight annular sharp flame can be obtained.

5 The second object of the invention is the production of a nozzle gas burner comprising parts that can be easily assembled or dismantled.

The third object of the invention is the production of a nozzle gas burner that is adapted for
10 either high or low pressure gas, and adapted for either commercial or domestic use.

In the accompanying drawing, Fig. 1 represents a longitudinal vertical section of an exemplification of the nozzle gas burner as on the line 1,
15 1 of Fig. 2; Fig. 2 shows a top view of the nozzle gas burner and Fig. 3 indicates a fragmentary portion of Fig. 1 with a modification.

In the drawing a Venturi mixing tube is indicated in its entirety by the numeral 20, and
20 comprises the conical shaped barrel 21 having the bore 22, which increases in diameter from its inlet and to its outlet end. The barrel 21 at its inlet end is shown with the flared inlet nozzle 25, having the flat outer face 26. At the outlet end
25 of the barrel 21 is indicated the sleeve 27, having an exterior thread and the annular flange 28. A pair of diametrically oppositely positioned arms are indicated at 30. The rear end 31 of each bracket is spaced to the rear of the outer face
30 26 of the inlet nozzle 25, and at the forward end 32 is indicated the threaded sleeve 33. A gas nipple 35 has the exterior thread 36, the interior thread 37 at one end and the flange 38. The
35 thread 36 is in engagement with the thread of the sleeve 33, and the flange 38 bears against the outer end of the sleeve 33. A pipe for the gas supply of the burner is shown at 40, which is connected to the gas nipple 35 by means of the
40 coupling 41. The outlet end of the nipple 35 extends into the inlet nozzle 25 and has in threaded engagement therewith the spud 45 having the orifice 46 for the passage of the gas supply. A disc shaped air shutter 48 is in threaded engagement with the thread 36 of the nipple 35.

45 The nozzle head of the burner is indicated in its entirety by the numeral 50. The said nozzle head comprises the outer shell 51 having extending laterally therefrom the threaded sleeve 52 which is in engagement with the threaded sleeve
50 27. At the top and outlet end of the shell 51 is indicated the interior annular flange 53 having the bottom face 54.

At the bottom and inlet end of the shell 50 is indicated the flange 58, with an opening having
55 the interior thread 59. An interior barrel is in-

indicated at 60 with its duct 61 and an exterior thread at its lower end, which latter is in engagement with the thread 59.

A square opening 62 is indicated at the lower end of the barrel 60. At the upper and outlet
60 end of the barrel 60 is indicated the outwardly extending flange 64 having the bottom face 65. The bottom face 65 of the outwardly extending flange 64 is parallel to and in a plane below the bottom face 54 of the interior flange 53. The
65 annular outlet for the nozzle head 50 is indicated at 66.

An annular chamber 68 is formed between the barrel 60 and the shell 51.

To operate the nozzle gas burner, the gas supply enters the same from the pipe 40 and flows
70 through the orifice 46 of the spud 45 into the tube 20. Air is drawn into the tube 20 through the flared inlet nozzle 25, and the amount of air flowing through the inlet nozzle 25 can be
75 varied by the position of the air shutter 48. The latter can be turned to be spaced the required distance from the outer face 26 of the said nozzle 25. The spacing of the rear ends 31 of the
80 brackets 30 from the said face 26 prevents the formation of eddies in the air flowing into the nozzle 25. The mixture of air and gas flows from the barrel 21 into the annular chamber 68 and escapes therefrom through the annular outlet
85 66 in a straight annular zone. The position of the bottom face 65 of the flange 64 relatively to the bottom face 54 of the flange 53 provides means for the mixture of gas and air to be discharged in a stream which is annular and
90 straight.

A further supply of air for the flame of gas and air flows through the square opening 62 of the barrel 60. The square opening 62 provides
95 means to easily screw the barrel 60 in place or disconnect the same from the flange 58. The mixture of air and gas is lit as it escapes from the annular outlet 66.

Referring to Fig. 3 the nozzle head of the barrel is indicated in its entirety by the numeral
100 70. The said head 70 comprises the outer shell 71 having extending laterally therefrom the threaded sleeve 72 similar to 52.

At the top and outlet end of the shell 71 is indicated the interior flange 73 having the bottom
105 face 74. At the bottom end of the shell 71 is indicated the flange 78 with the interiorly threaded sleeve 79. An interior barrel is indicated at 80 with the duct 81 having the square opening 82 at its lower end.

At the upper end of the barrel 80 is indicated 110

the outwardly extending flange 84 having the bottom face 85, and the upper face 86. The latter is below the top face of the flange 73 and forms the circular chamber 87. It will be noted that the bottom face 74 of the interior flange 73 is parallel to and below the bottom face 85 of the outwardly extending flange 84.

The annular outlet for the nozzle head 70 is indicated at 88. The sleeve 27 of the mixing tube 20, as already described, engages the threaded sleeve 72.

Between the barrel 80 and the shell 71 is formed the annular chamber 90. By means of the disposition of the bottom face 74 of the flange 73 below the bottom face 85 of the flange 84 and the circular chamber 87, a quiet straight and annular flow from the burner is obtained for its flame.

Various modifications may be made in the invention and the present exemplification is to be taken as illustrative and not limitative thereof.

Having described my invention what I desire to secure by Letters Patent and claim is:

1. In a gas burner of the character described the combination of a nozzle head, said head comprising an outer shell, an interior flange at the top and outlet end of said shell, said flange having a bottom face, a flange at the bottom and inlet of the shell forming an opening, a barrel within the shell to supply air to the center of the flame of the burner, the lower end of the barrel positioned in the opening at the bottom end of the shell and fastened to the flange of the bottom end of the shell, said barrel and shell forming an annular chamber between them, an outwardly extending flange at the upper end of said barrel, the latter flange having a bottom face, the latter bottom face parallel to and below the bottom face of the flange at the top end of said shell, the flanges at the top end of the shell and barrel forming an annular outlet for the nozzle head and means to supply a fuel gas to said annular chamber.

2. In a burner of the character described the combination of a nozzle head, said head comprising an outer shell, a threaded sleeve extending

from the shell, a flange at the bottom end of said shell, an interior threaded sleeve integral with said flange, an interior flange having a bottom face at the top end of the shell, a barrel in said shell to supply air to the center of the flame of the burner, the bottom end of the barrel in threaded engagement with the flange at the bottom end of said shell, an outwardly extending flange at the top end of the barrel having a bottom face above the bottom face of the flange at the top end of the shell and having a top face below the top face of the flange at the top end of the shell, the top face of the barrel forming with the flange at the top end of the shell a circular chamber, the flange at the top end of the barrel and the flange at the top end of the shell forming an annular outlet in the radial space between the two latter flanges for the nozzle head, the said shell and barrel forming an annular chamber between them and means connected to the threaded sleeve of said shell for the inflow of a fuel gas into the chamber between said shell and barrel.

3. In a gas burner of the character described the combination of a nozzle head, said head comprising an outer shell, an interior flange at the top and outlet end of said shell, said flange having a bottom face, a flange at the bottom and inlet end of the shell forming an opening, a barrel within the shell to supply air to the center of the flame of the burner, the lower end of the barrel positioned in the opening at the lower end of the shell and fastened to the flange at the lower end of the shell, said barrel and shell forming an annular chamber between them, an outwardly extending flange at the upper end of said barrel, the latter flange having a bottom face, the latter bottom face parallel to and spaced from the bottom face of the flange, at the top end of said shell, the flanges at the top end of the shell and top end of the barrel forming an annular outlet by the radial space between the flanges, for the nozzle head, and means to supply a fuel gas to said annular chamber between said shell and barrel.

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