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G. E. PICKUP

1,923,393

GAS BURNER

Filed Feb. 17, 1932

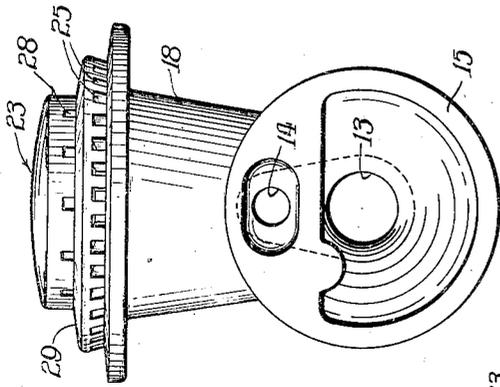


Fig. 2

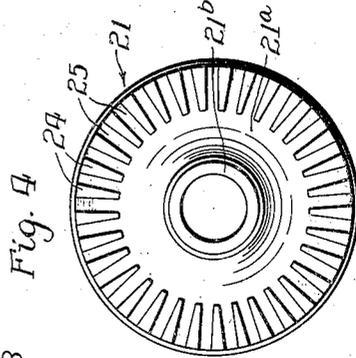


Fig. 4

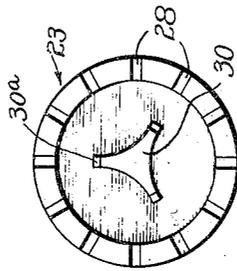


Fig. 5

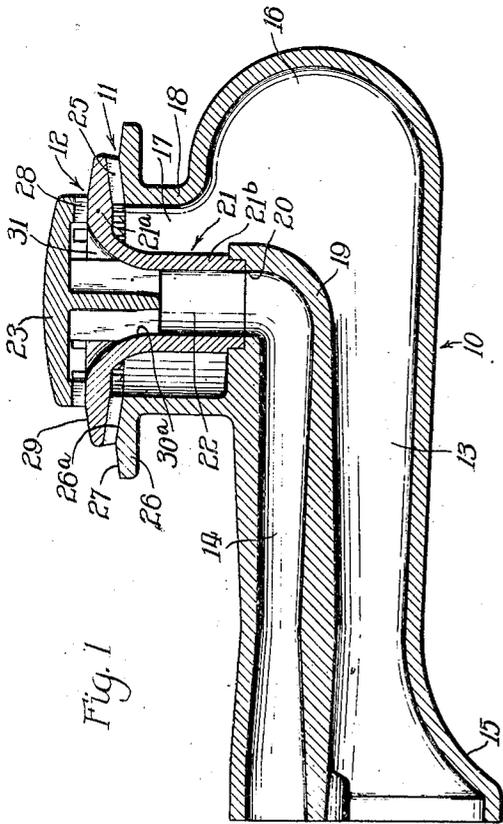


Fig. 1

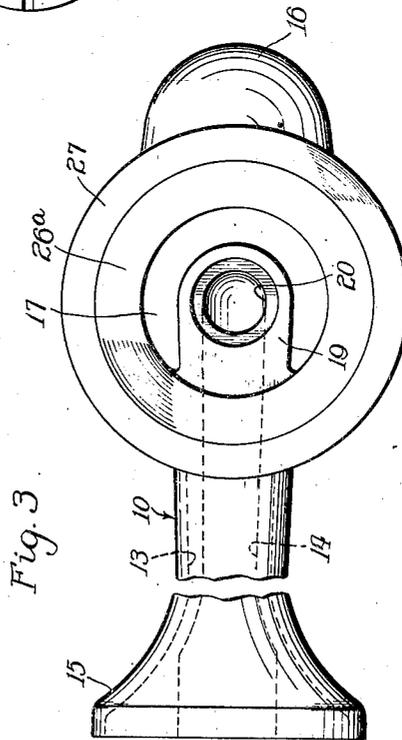


Fig. 3

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# UNITED STATES PATENT OFFICE

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## GAS BURNER

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1 Claim. (Cl. 158—116)

The invention relates generally to gas burners for cooking stoves and more particularly to a double burner construction adapted to be operated to produce selectively a large or a small flame.

The primary object of the invention is to produce a dual burner of this type which is compact in form and efficient in operation, and which is so formed that it may be easily cleaned and may be economically produced.

Other objects and advantages will become apparent from the following description taken in connection with the accompanying drawing which illustrates a preferred embodiment of the invention, and in which:

Figure 1 is a vertical section taken longitudinally through a burner structure embodying the features of the invention.

Fig. 2 is an end elevational view of the structure shown in Fig. 1.

Fig. 3 is a top plan view of the structure shown in Fig. 1 with the burner heads removed to show the interior construction.

Fig. 4 is a bottom plan view of the main burner head.

Fig. 5 is a bottom plan view of the auxiliary burner head.

In the preferred form herein disclosed the invention is embodied in a burner structure having an elongated mixing tube 10 carrying at one end a main burner 11 and an auxiliary burner 12 of smaller diameter disposed in concentric superposed relation. The mixing tube 10 has separate passages 13 and 14 therein opening through the other end of the tube 10, which as shown in Figs. 1 and 2, is enlarged as at 15 to provide for aspiration of primary air into the passages by the gas in the conventional manner.

The lower passage 13 is utilized in the present case to supply fuel to the main burner 11, and at the end beneath the burners the mixing tube 10 is enlarged to form a reverse bend 16 or goose neck formed by an upwardly curving wall 16, the goose neck merging with a continuation of the passage 13 and a distributing chamber 17 for the main burner 11 formed by an upstanding annular wall 18.

The corresponding end of the passage 14 continues beneath the distributing chamber 17 and toward the wall 16 and then upwardly through the chamber 17 to the auxiliary burner 12 which is of smaller diameter than the main burner 11 and is located at a slightly higher level. The horizontal continuation of the pas-

sage 14 is provided by a tube-like extension 19 projecting into the chamber 17 and spaced from the side wall as shown in Fig. 3 to provide for upward passage of fuel from the passage 13 about the extension 19 and into the chamber 17. At its end, the extension 19 is counterbored to form a socket 20 adapted to slidably receive and to support a main burner head 21 which is relatively flat at its upper end as shown at 21<sup>a</sup> so as to constitute a closure for the chamber 17 of the main burner 11, and which is also of annular form at 21<sup>b</sup> whereby to provide a stem constituting an upward continuation of the passage 14 and a distributing chamber 22 for the auxiliary burner 12. The distributing chamber 22 is closed at its upper end by an auxiliary burner head 23.

Both burners are preferably arranged to discharge the fuel mixture substantially horizontally so that each will burn with a flame of circular form extending outwardly and upwardly in substantially an inverted frusto-conical form. The outwardly flared portion 21<sup>a</sup> of the main burner head 21 overlies the upper edge of the annular wall 18, and from the outer edge of the flared upper end, a flange 24 extends downwardly and has a plurality of spaced radial notches of uniform width cut therein to provide ports 25. The flange 24 rests upon the upper edge of the wall 18 whereby to define an annular series of radially directed fuel discharge ports 25.

If desired, the wall 18 may be provided with an outwardly projecting flange 26 having an inwardly and downwardly sloping surface 26<sup>a</sup> upon which the flange 24 rests, and an outwardly and downwardly sloping surface 27 beyond the ends of the ports 25. The portion of the ledge upon which the surface 27 is formed constitutes a ledge which aids in controlling the secondary air, and by reason of the slope of the surface 27, liquids are drained away from the ports.

The auxiliary head 23 similarly overlies the upper surface of the main head 21 and has similarly formed fuel discharge ports 28 arranged about its edge. The outer edge of the head 23 is spaced inwardly from the outer edge of the head 21, and the upper surface of the projecting portion of the head 21 is formed to slope outwardly and downwardly as at 29 so as to insure proper drainage of liquids away from the ports 28.

To maintain the auxiliary head in position, a stem 30 projects downwardly therefrom into contact with the annular sides of the main head 21. The stem 30 is of substantially triangular

cross section as shown in Fig. 5 so as to permit fuel to move upwardly from the passage 14 to the ports 28. Adjacent its upper end the stem 30 is spaced from the head 21, as at 31 (Fig. 1) whereby to permit proper flow of fuel in an annular direction to the ports 28. The stem 30 is reduced at its lower end as indicated at 30<sup>a</sup> to insure proper contact with the sides of the head 21, and it will be clear that the head 23 may be readily removed for cleaning. Similarly the main head 21 may be removed quite easily.

It will be apparent from the foregoing description that the parts of the present burner are of simple form whereby to simplify the manufacture thereof; and that their form and relation to each other is such as to facilitate cleaning of the burners.

I claim as my invention:

A double burner structure for gas stoves com-

prising an elongated mixing tube having two longitudinal passages arranged one above the other, an annular wall projecting upwardly from said tube adjacent to one end thereof, said end of the tube having a goose-neck formed thereon extending beyond said wall and constituting an enlarged continuation of the lower one of said passages communicating with the space defined by said annular wall, an extension forming a continuation of the upper one of said passages into said enlarged portion of the lower passage, a removable main burner head cooperating with said wall to form a main burner and connected with said extension to define an upward continuation of said upper passage, and a removable auxiliary burner head cooperating with said main burner head to form an auxiliary burner.

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