

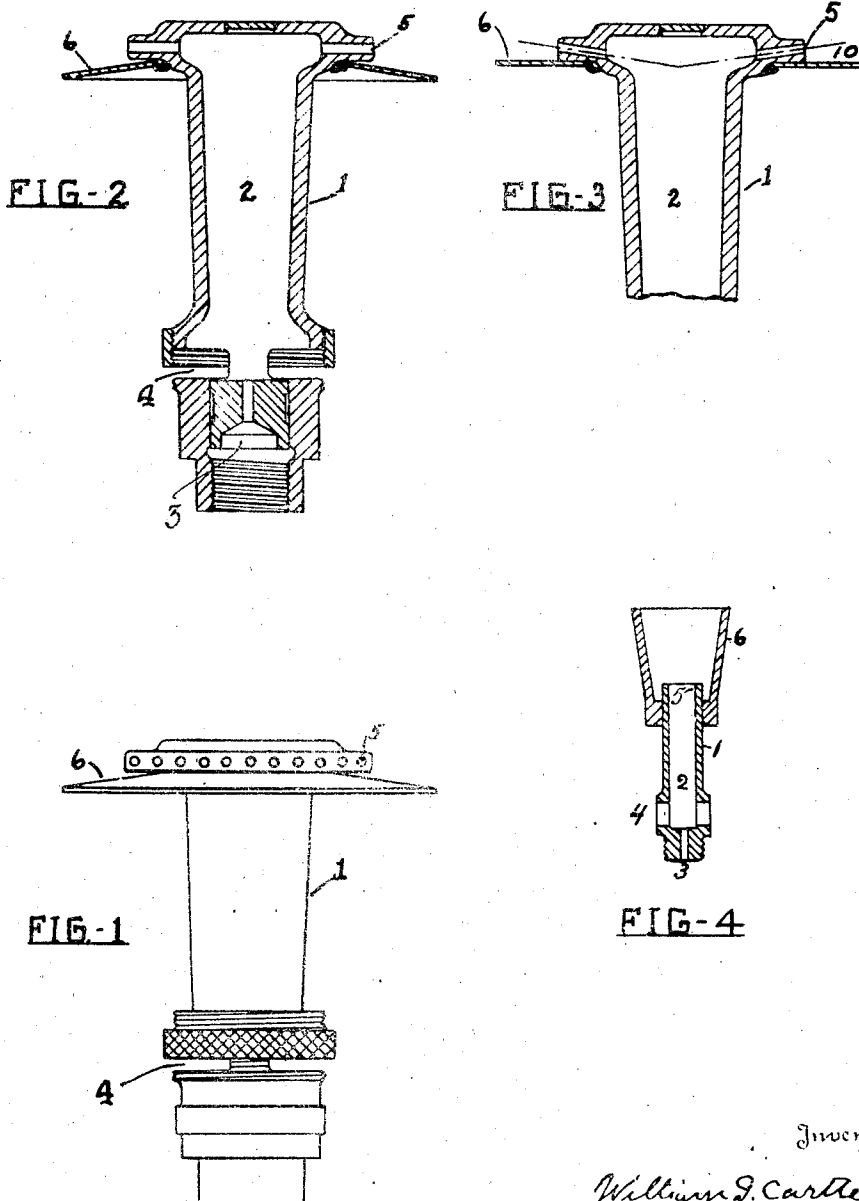
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BURNER FOR HYDROCARBON GASES

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BURNER FOR HYDROCARBON GASES

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3 Claims. (Cl. 158—116)

In the construction of burners for consuming a mixture of air and hydrocarbon gas, it has been found that these burners are apt to cause a disagreeable roaring sound. The purpose of my invention is to prevent this roaring sound and make a burner that will burn quietly, and at the same time with a hotter flame.

I attain these purposes by the means shown in the accompanying drawing in which Fig. 1 is an elevation of a burner of the above type embodying my invention. Fig. 2 is a vertical section of Fig. 1 along its axial line. Figs. 3 and 4 are details illustrating modifications of my device.

Referring to the drawing; 1 is the main portion of the burner, which may be of any approved type and is provided in the usual manner with a mixing tube 2; gas inlet 3, and air inlet 4. The top of the burner is closed and is provided with jet tube or tubes 5. All these are of any ordinary construction. As shown in the drawing, the jets 5, open in a horizontal direction, but this is not essential to my device. A flange 6, is attached or integrally formed, below the jets 5 and slightly separated therefrom, and extends outwardly beyond their extremities and at a slight angle therewith. While this angle may be varied to a considerable degree, I have found that the best results are obtained when it does not exceed ten degrees. The effect of this flange is to so control the supply of secondary air to the flame issuing from the jet as to bring the point of combustion back to the opening of the jet and thus prevent the roaring noise.

In the modification shown in Fig. 3, the flange is horizontal and the opening of the jets is at a slight angle upward, or the jets might angle downward and the flange also downward at a slightly greater angle. In that shown in Fig. 4, there is only a single jet tube which may extend in any direction and the flange takes the form of a funnel.

The operation of my device is as follows: The velocity of the escaping gas from the jets 5 creates an outflowing current of air which in turn produces an inflowing current of air along the side of the flange next to the jets, which serves to retard the outflowing current of air and also the velocity of the escaping jet of gas and carries an additional supply of secondary air to the exterior opening of the jet. By this compound action it brings the point of ignition of the escaping gas back to the exterior opening of the jet and thus enables the use of a high pressure of gas that without it would either blow out the flame entirely, or if it continued to burn would make an objectionable roaring sound.

I claim as my invention and desire to secure by Letters Patent:

1. In a burner for the consumption of hydro-

carbon gases, said burner being provided with a mixing tube, openings for the admission of gas and air to the mixing tube, and a plurality of approximately radially disposed discharge jets, a flange arranged below said jets and extending over an area common to all of the same, said flange being secured in immediate proximity to said jets near the mouths thereof and having a portion extending outwardly beyond the mouths of the jets and diverging therefrom throughout its full extent to the outer edge of the flange, said flange having a smooth continuous inner face and cooperating with said jets in causing a steady flow of incoming air along the inner side of the flange and a steady outwardly flowing current of air next to the flames of said jets whereby the outwardly flowing current of air and the jetted mixture are retarded and combustion at the mouths of the jets is effected.

2. A burner for the consumption of hydrocarbon gases comprising a mixing tube having openings for the admission of gas and air thereto and terminating in jetting means for the escape of the mixture from the mixing tube, a flange secured to said burner in immediate proximity to said means near the mouth thereof and having a portion extending outwardly beyond the mouth of said means and diverging therefrom throughout its full extent to the outer edge of the flange, the inner portion of the flange constituting an imperforate barrier adjoining the jetting means, and said flange cooperating with the jetting means in causing a steady flow of incoming air along the inner side of the flange and a steady outwardly flowing current of air next to the flame, whereby the outwardly flowing current of air and the jetted mixture are retarded and combustion at the mouth of the jetting means is effected.

3. A burner for the consumption of hydrocarbon gases comprising a mixing tube having openings for the admission of gas and air thereto and terminating in jetting means for the escape of the mixture from the mixing tube, a flange secured to said burner in immediate proximity to said means near the mouth thereof and having a portion extending outwardly beyond the mouth of said means and diverging therefrom throughout its full extent to the outer edge of the flange, said flange surrounding the jetting means and the inner portion of the flange constituting an imperforate barrier adjoining the same, and said flange cooperating with the jetting means in causing a steady flow of incoming air along the inner side of the flange and a steady outwardly flowing current of air next to the flame, whereby the outwardly flowing current of air and the jetted mixture are retarded and combustion at the mouth of the jetting means is effected.

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