

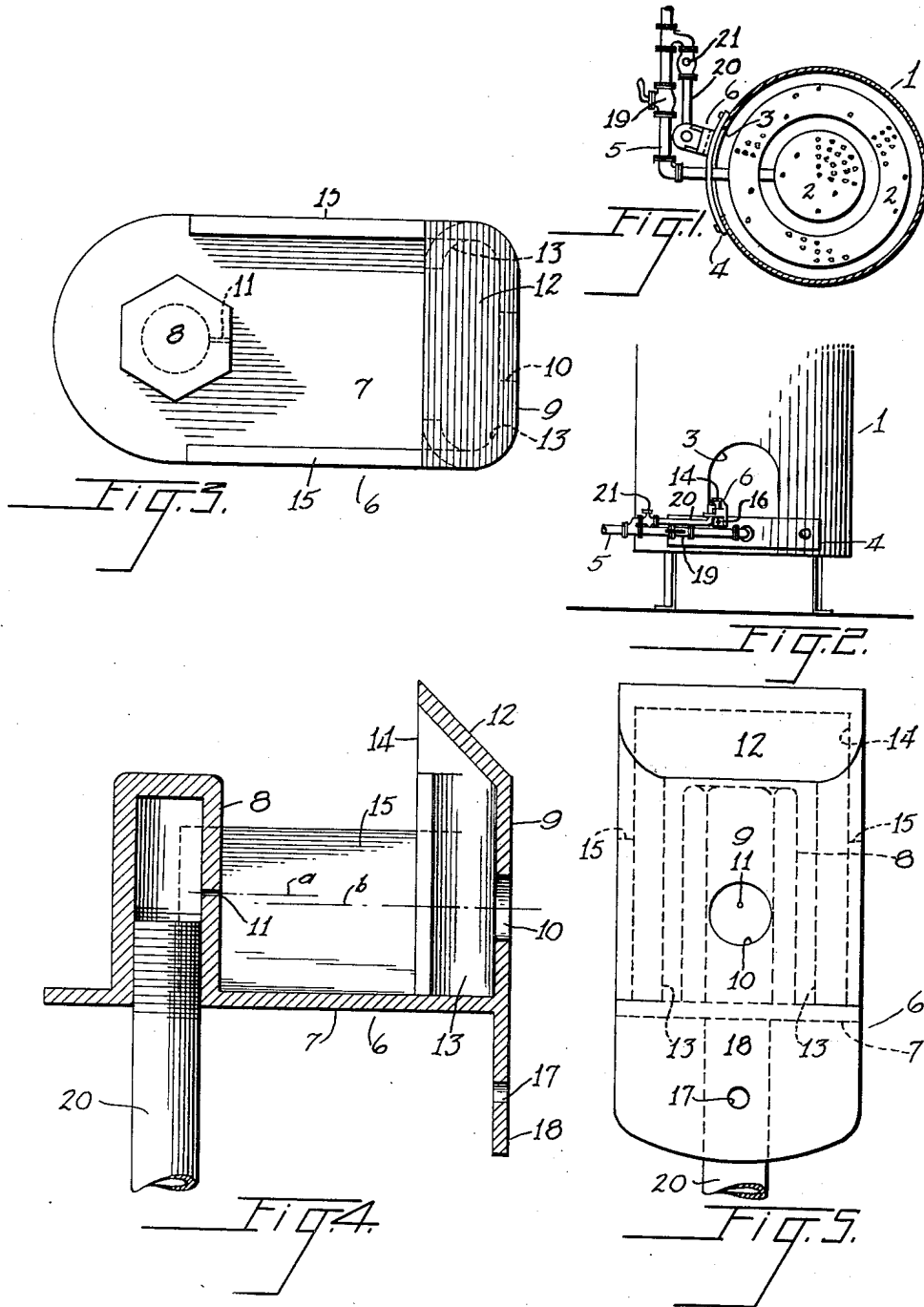
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LIGHTER FOR GAS BURNERS

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LIGHTER FOR GAS BURNERS

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7 Claims. (Cl. 158—115)

My invention relates to improvements in lighters for gas burners, and it consists of the combinations, constructions and arrangements hereinafter described and claimed.

5 The pilot lights for gas burners are generally placed within the burner casing, and this not only makes it hard to see the light, but it further subjects the lighter to the extreme heat given off by the burner.

10 The principal object of my invention is to provide a lighter which is disposed outside of the burner casing where it may be readily accessible to the operator. The lighter makes use of a jet having a small orifice for directing a stream of gas over the main burner when the valve controlling the flow of gas is open. I prefer to use a push button type of valve which will automatically cut off the gas in the lighter when the push button is freed.

15 The gas issues from the orifice with considerable force, and when this gas is ignited by means of a match, the force of the gas issuing from the jet will cause the flame to blow out. In order to overcome this, I dispose a shield in front of the orifice, having an opening slightly smaller than the diameter of the stream of gas passing through the opening. The jet orifice is placed slightly above the center of the opening in the shield and this will cause a certain portion of the gas to be deflected upwardly. A deflecting hood conveys this deflected stream of gas upwardly and away from the burner casing, and this gas may be ignited and will in turn ignite the gas passing through the shield opening and over the burner. The shield continues to slow up the portion of gas striking it, and this portion mixes with air to form a combustible mixture which will keep burning, and the flame from this mixture will ignite the gas passing through the opening in the shield and prevent the flame from blowing out.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawing forming a part of this application, in which

50 Figure 1 is a horizontal section through the lower part of a heater, showing the main burner and my device operatively applied;

Figure 2 is a front view of a heater showing the device in place;

55 Figure 3 is a top plan view of the device;

Figure 4 is a vertical section through the device; and

Figure 5 is an end view of the device.

In carrying out my invention, I make use of a heater casing 1, (see Figure 1), having a main burner 2 disposed near the bottom of the casing. Figure 2 shows an opening 3 provided in the casing wall and a plate 4 movably secured to the casing that supports a main gas pipe 5, which communicates with the main burner 2. My gas lighter, indicated generally at 6, is secured to the plate 4 and is positioned so as to direct the pilot flame through the opening 3 and over the main burner.

I will now describe the device in detail. Figure 4 shows the lighter as having a base 7, with a gas jet 8 projecting above the base. A gas-deflecting shield 9 extends upwardly from the base and has an opening 10 in its vertically-extending wall.

The jet 8 has a small orifice 11 facing the opening 10, and it will be noted from Figure 4 that the axis *a* of the orifice 11 is disposed above the axis *b* of the opening 10. The gas, in issuing from the orifice 11, forms a cone, and the cross section of this cone at a point adjacent to the opening 10 is slightly larger than the opening. Moreover, since the orifice 11 is disposed above the center of the opening 10, a small portion of the gas will strike the inner surface of the shield 9. The force of the gas will cause this small portion to flow upwardly and against a deflecting hood 12. The sides of the shield 9 are curved in the manner shown at 13, in Figures 3 and 4. The portion of deflected gas passing into the curved portions 13 will create eddy currents, and this gas will mix with air and form a combustible mixture. There is an opening 14 disposed between the hood 12 and the top of the curved portions 13 through which the gas issues. The operator ignites the stream of gas issuing from the opening 14. Due to the combustible mixture of this gas, the flame will instantly carry down to the opening 10 where it will ignite the gas passing through the opening. So long as the gas issues from the orifice 11, a combustible mixture will be formed in the curved portions 13, and this mixture will keep on burning and will continue to ignite the gas flowing through the opening 10. In this way, the flame is prevented from being blown out.

The base 7 has side wings 15 that extend from the jet 8 to the shield 9. These wings cooperate with the curved portions 13 for forming a passageway for the gas. If desired, the wings may be dispensed with.

The lighter is secured to the plate 4 by means of a bolt 16, (see Figure 2), passed through an opening 17 in a depending lug 18, (see Figure 4), and into the plate.

5 It will be noted from Figure 1 that the main gas pipe 5 has a main burner valve 19 and that a by-pass pipe 20 leads from the pipe 19 to the jet 8. The pipe 20 is provided with a push button valve 21.

10 From the foregoing description of the various parts of the device, the operation thereof may be readily understood.

When the operator desires to light the main burner, he manually depresses the push button 21 and this opens the push button valve so that gas will flow out through the jet orifice 11. As already stated, a portion of this gas will pass out through the opening 14, and the operator can ignite this portion. The main stream of gas issuing from the opening 10 will instantly be ignited, and the burning gas in the curved portions 13 will continue to keep the main stream of gas ignited. The main stream of gas has enough pressure for causing a flame 7 to 10 inches in length to issue from the opening 10.

25 After the gas from the opening 10 is lighted, the operator can open the main burner valve 19, and the gas issuing from the entire burner will be instantly ignited instead of only a small portion of the gas being ignited as is now the case. When the main burner is lighted, the operator can free the push button 21 and the pilot light will be extinguished.

30 While I have shown only the preferred form of my invention, it should be understood that various changes or modifications may be made within the scope of the appended claims without departing from the spirit of the invention.

I claim:

40 1. A gas lighter comprising a supporting base, a gas jet carried thereby and having an orifice in its side wall, a deflector disposed in the path of gas issuing from the orifice and having an opening whose center is disposed slightly below the center of the orifice, the axes of the orifice and opening extending parallel with respect to each other, the sides of the deflector being curved in-

wardly and the top of the deflector being provided with a hood.

2. A gas lighter comprising a supporting base, a gas jet carried thereby and having an orifice in its side wall, a deflector disposed in the path of gas issuing from the orifice and having an opening whose center is disposed slightly below the center of the orifice, the sides of the deflector being curved inwardly and the top of the deflector being provided with a hood, and side wings extending from adjacent the jet to the sides of the deflector.

3. A gas lighter comprising a jet having an opening, a gas deflector placed in the path of the gas issuing from the jet and having an opening for permitting the greater portion of the gas to pass therethrough, the sides of the deflector being curved for forming air and gas-mixing spaces, a hood formed in the top of the deflector, and wings extending from adjacent the jet to the deflector.

4. A gas lighter comprising a jet having an orifice, a shield spaced from the jet and having an opening for permitting the greater part of the gas issuing from the jet to pass therethrough, a hood spaced from the jet for causing the gas deflected by the shield to flow upwardly and in the direction of the jet where it will mix with air and form a combustible mixture.

5. A gas lighter comprising a jet having an orifice, a shield facing the orifice and having an opening whose axis is parallel with the orifice axis and spaced slightly below.

6. A gas lighter comprising a jet having an orifice, a shield facing the orifice and having an opening whose axis is parallel with the orifice axis and spaced slightly below and means for protecting the flow of gas against cross drafts as the gas passes from the orifice to the shield.

7. A gas lighter comprising a jet having an orifice, a shield facing the orifice and having an opening whose axis is parallel with the orifice axis and spaced slightly below, and means associated with the shield for deflecting a portion of the stream of gas rearwardly and upwardly where it may be readily ignited.

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