

UNITED STATES PATENT OFFICE

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BURNER

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1 Claim. (Cl. 158—111)

This invention relates broadly to improvements in burners and particularly to the mixing chambers thereof, and has particular reference to the air control means for the said mixing chambers of various burners such as those used in laboratory work.

The principal object of the invention is to produce an air control means for adjustably mixing the gaseous fuel in the mixing chambers of burners which may be adjusted to a nicety and which will, therefore, greatly increase the effectiveness of the burner.

A further object of the invention is to produce an air control device for gaseous fuel burners wherein a cone-shaped base is employed and a correspondingly shaped shell coacts therewith the shell being adjustable relative to the base to control the air to the mixing chamber of the device.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawing forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a side elevation of our improved device having a portion thereof cut away;

Fig. 2 is a view similar to Fig. 1 and taken at right angles thereto;

Fig. 3 is a side elevation of the air controlling cone of the device.

In the accompanying drawing wherein for the purpose of illustration is shown a preferred embodiment of our invention, the numeral 5 designates a base which is cone-shaped and has an inverted cone-shaped bore 6. A feed pipe 7 connects the burner jet 8 with the gas supply pipe 9. A valve 11 inserted in the pipe 7 controls the amount of fuel which flows through the pipe to the burner of the device. A branch pipe 12 connects the pipe 7 and the flow of fuel thereto is controlled by an adjusting screw 13. This pipe 12 is provided with an offset 14 which forms a handle for moving the device about. An extension 16 extends vertically and has secured thereto a combustion pipe 17, which pipe is positioned in coaxial alignment with the cone-shaped base

5 and the cone 6. The bottom of this pipe 17 is threaded so as to threadably engage a cone-shaped air inlet member 18 having the same angular relation to a vertical line as the sides of the cone 5. Therefore, when the cone-shaped member 18 is screwed upwardly or downwardly its inner surface will always be parallel with the outer surface of the cone, thus forming an annular air space. The result of this construction is that when the pilot is lighted and the valve 11 is turned so as to admit gaseous fuel to the tip 3 the gas will flow upwardly through the pipe 17, thus acting as an injector to draw in air between the cone-shaped base 5 and the cone-shaped member 18, as indicated by the curved arrows in the figures. This air will effectively combine with the fuel and, therefore, a very effective mixture will take place previous to the same reaching the pilot light which will ignite this mixture, thus creating a blue flame which is necessary in laboratory or other work. It will readily be understood that by adjusting the cone-shaped member 18 relative to the base 5 that a very fine air control may be effected.

It is to be understood that the form of our invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

Having thus described our invention, we claim:—

In a device of the character described, a conical base having an outwardly flaring bore therein, a pipe mounted above and spaced from said bore and in axial alignment therewith, a cone-shaped shell carried by said pipe and axially adjustable to and away from said cone-shaped base, the bore of said base forming with said shell a mixing chamber, means for delivering gas to said bore, whereby said gas passing to said pipe will mingle with air entering circumferentially between said shell and said cone.

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