

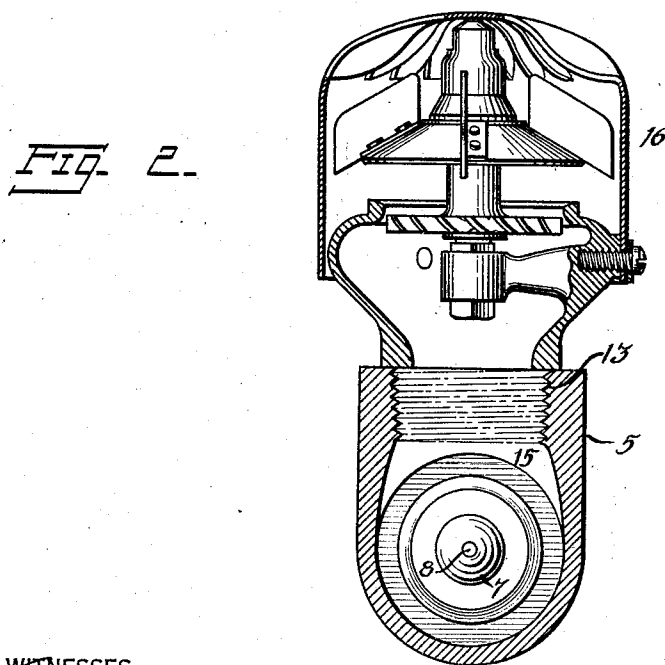
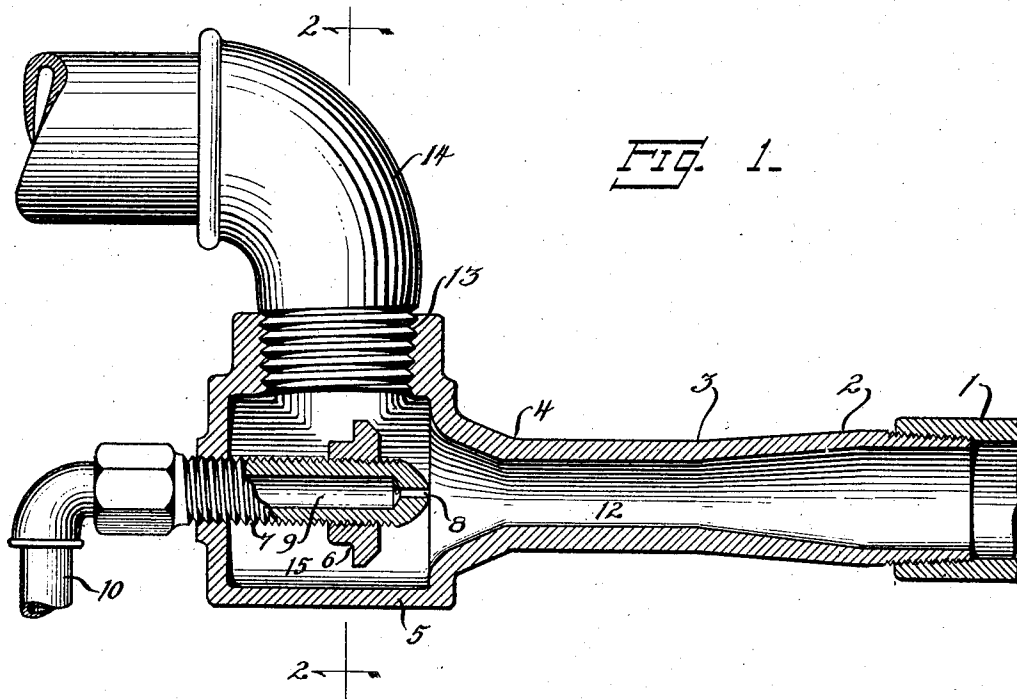
Sept. 20, 1932.

W. B. ENSIGN ET AL

1,878,478

INSPIRATOR

Filed Sept. 22, 1928



WITNESSES
Francis R. Harris,
A. L. Kitchen

INVENTOR
William B. Ensign
Lloyd H. V. Reynolds
BY *Drumheller*
ATTORNEY

UNITED STATES PATENT OFFICE

WILLIAM B. ENSIGN AND LLOYD H. V. REYNOLDS, OF NEW YORK, N. Y., ASSIGNORS TO
ENSIGN-REYNOLDS, INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

INSPIRATOR

Application filed September 22, 1928. Serial No. 307,635.

This invention relates to an improved inspirator for gas burners and has provided a construction wherein substantially clean air is mixed with the gas prior to its entrance into the burner.

Another object of the invention is to provide an inspirator wherein means are presented which will either clean the air or which will draw the air from a distant point and then mix the same properly in a restricted tube under appreciable pressure before entering the burner.

In the accompanying drawing—

Figure 1 is a longitudinal vertical sectional view through an inspirator disclosing an embodiment of the invention;

Figure 2 is a transverse sectional view through the inspirator shown in Figure 1 approximately on the line 2—2, with a modified form of air-supplying means.

By referring to the accompanying drawing by numerals, 1 indicates a burner of any desired kind, into one end of which is threaded a tube 2 which is constricted between points 3 and 4. At point 4 tube 2 merges into a head or mixing chamber 5 and this head may be of any desired size and shape. The head 5 is provided with two threaded openings, one of which accommodates the externally threaded nozzle 7, which nozzle is provided with a discharge opening or bore 8 and with an air-controlling valve or member 6. The valve 6 is screwed on to the nozzle 8 and is adapted to be moved toward or from the end carrying bore 8 in order to regulate the amount of air used. The nozzle 7 is adapted to be adjusted back and forth toward and from the constricted portion 12 of tube 2. This may be done by disconnecting the same from the supply pipe 10 and then rotating the nozzle until the desired position is secured, after which pipe 10 is again connected with the nozzle so as to supply gas thereto.

As shown in Figure 1, the bore 8 merges into an enlarged interior or bore 9, so that the gas from a suitable supply pipe 10 may readily be discharged to the bore 8. By this arrangement the gas may be discharged at any desired pressure and directed centrally

through the constricted portion 8 of tube 2.

The head 5 is also provided with a threaded opening 13 into which a pipe or fitting 14 is screwed. This pipe or fitting is designed to extend to a point outside of a building where the device is used, and if desired, to some high point whereby comparatively clean air is drawn into the chamber 15 and thence into the constricted portion 12 as the gas is forced therethrough. In this way, comparatively clean air is drawn in and mixed with the gas in the constricted portion 12, while the gas is under pressure and this mixture eventually passes into the burner 1 where it is consumed. If, for any reason, it should be undesirable to use a pipe similar to the pipe 14, an air cleaner 16 of any desired structure could be substituted, as shown in Figure 2. In an actual test, a well known air cleaner for automobile engines was used, as shown in Figure 2, but it is, of course, evident that other forms of air cleaners could be used without departing from the spirit of the invention. The air cleaner 16 is preferably screwed into the head 5, though it might be applied in some other manner. This presents means whereby comparatively clean air is supplied from the room in which the device is used.

What we claim is:—

1. An inspirator for gas burners, comprising a tubular member formed with an integral hollow head, said tubular member having a constricted portion for part of its length, said head having a large threaded aperture at one side and a comparatively small threaded aperture in line with said tubular member, an externally-threaded gas nozzle positioned in the last-mentioned aperture, whereby the nozzle may be adjusted toward and from said tubular member and made to direct gas centrally through the tube, a substantially disk-shaped member screwed onto said nozzle and movable toward and from said tubular member for varying the proportion of air, and air cleaner means screwed into said large aperture for directing cleaned air to the interior of said head and to said tubular member.

2. An inspirator for gas burners, compris-

ing a hollow head having an integral tubular member extending therefrom, said head having a large aperture at one side and a comparatively small aperture in line with said tubular member, said tubular member having a constricted portion for part of its length, tubular means associated with said large aperture for directing air into said hollow head, a gas nozzle movably positioned in said comparatively small aperture for directing gas into said tubular member, said nozzle being adjustable toward and from said tubular member for varying the proportion of air and gas entering said tubular member.

3. An inspirator for gas burners, comprising a hollow head having a tubular member extending therefrom, said head having an enlarged aperture at one side and a comparatively small aperture in line with said tubular member, said tubular member having a constricted portion for part of its length, means for directing air into said hollow head through said enlarged opening, a gas nozzle positioned in said comparatively small aperture for directing gas into said tubular member, said nozzle being adjustable toward and from said tubular member, and a substantially disk-shaped member screwed on to said nozzle and movable toward and from said tubular member for varying the proportion of air admitted to said tubular member.

WILLIAM B. ENSIGN.
LLOYD H. V. REYNOLDS.