Jan. 29, 1924. 1,482,258

R. S. REED

GAS BURNER

Filed April 1, 1922

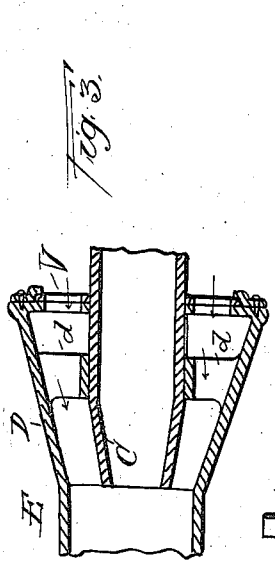


Fig. 3.

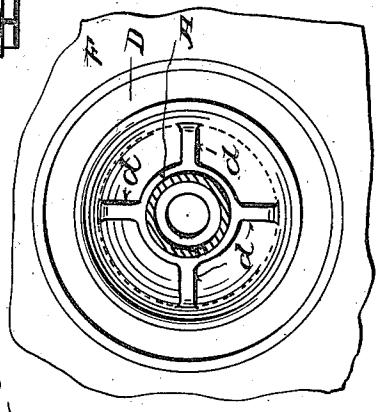


Fig. 2.

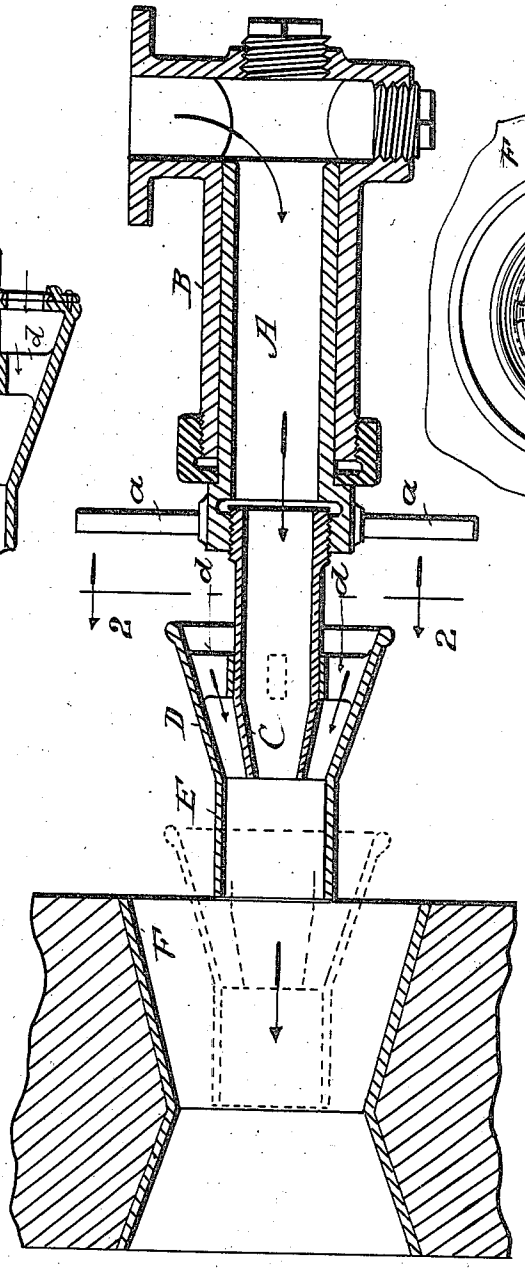


Fig. 1.

INVENTOR

Raymond S. Reed

BY his ATTORNEY

Clarkson A. Collins.

Patented Jan. 29, 1924. 1,482,258

UNITED STATES PATENT OFFICE.

RAYMOND S. REED, OF SYRACUSE, NEW YORK, ASSIGNOR TO SEMET-SOLVAY COMPANY, OF SOLVAY, NEW YORK, A CORPORATION OF NEW YORK.

GAS BURNER.

Application filed April 1, 1922. Serial No. 548,567.

To all whom it may concern:

Be it known that I, RAYMOND S. REED, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Gas Burners, of which the following is a specification.

My invention relates to that class of gas burners used for heating furnaces and similar purposes and the object of my improvements is to provide a burner of this class of simple construction which shall operate efficiently to supply a mixture of gas and air for combustion, of uniform quality.

The invention will be best understood by reference to the accompanying drawing, Fig. 1 of which shows a longitudinal section of a gas burner in which it is embodied, Fig. 2 a plan view of the same seen from the line 2—2, Fig. 1, and Fig. 3 an enlarged longitudinal section of a portion of the burner.

Referring to the drawings, A indicates the delivery gas pipe which is slidably mounted in a sleeve B, in which it can be moved back and forth, as by handles, *a*, *a*. The gas pipe, A, is provided with an outlet of decreasing, cross-sectional area, as shown at C and is surrounded by a hood, D, which is supported on and carried thereby as by a spider, *d*, and provides an air inlet passage through which air is drawn in to be mixed with the gas discharged from the outlet, C. The hood, D, terminates in a cylindrical mixing chamber, E, of uniform cross-sectional area, located in front of the gas outlet, C, and of such length that the gas, discharged from the outlet, C, and the air drawn in thereby through the hood, D, are therein thoroughly commingled.

In front of the mixing chamber, E, is the burner-port, F, which has the same longitudinal axis as the chamber, E, and pipe, A, and is of decreasing cross-sectional area to the point of farthest advancement of the chamber, E, whence it increases in cross-sectional area to its outlet. The mixed gas and air are discharged at a relatively high velocity from the mixing chamber, E, into the burner port, F, so that a secondary supply of air is drawn in through the burner port. The opening of the hood, D, may be provided with a valve, V, which is normally set so as to admit the minimum supply of air required. Further regulation of the air supply is effected by movement of the pipe, A, with its connected parts.

A forward movement of the pipe, A, causes the mixing chamber, E, and hood, D, to obstruct the burner port and decrease the amount of secondary air that can be drawn in therethrough. Movement in the opposite direction enlarges the efficient air inlet opening of the burner port, thus permitting a greater quantity of air to enter to be mixed with the gas.

In this manner the relative proportions of air and gas are easily regulated.

What I claim as new and desire to secure by Letters Patent is:—

A gas burner comprising in combination a slidably mounted delivery gas pipe having a tapered gas outlet, a tapered hood carried by the gas pipe and surrounding said outlet and provided with rearwardly opening air inlets, whereby air is drawn in and mixed with the gas at the gas outlet, a mixing chamber of uniform cross sectional area carried by the hood and located in front of the gas outlet, and a burner port having a portion thereof adapted to receive the mixing chamber when the same is moved forward and to provide an air inlet thereby and formed with a decreasing cross sectional area to the point of furthest advancement of the mixing chamber.

In testimony whereof I have affixed my signature, this 25th day of March, 1922.

RAYMOND S. REED.