

1,407,346.

FIG. 1

FIG. 2.

FIG. 3.

FIG. 4.

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WILLIAM H. CAIN, OF LOS ANGELES, CALIFORNIA.

GAS AND AIR MIXER.

1,407,346.

Specification of Letters Patent. Patented Feb. 21, 1922.

Application filed April 28, 1921. Serial No. 465,118.

To all whom it may concern:

Be it known that I, WILLIAM H. CAIN, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Gas and Air Mixers, of which the following is a specification.

It is the object of this invention to provide an air and gas mixer employed in connection with any suitable burners to form a device which may be utilized in a gas stove.

It is the particular object of the invention to provide a mixer having efficient means for mixing the gas and air, and also so constructed as to uniformly distribute the combustible mixture to the respective burners.

The invention will be readily understood from the following description of the accompanying drawings, in which—

Figure 1 is a side elevation, partly broken away, showing a gas stove employing the improved mixer in connection with suitable burners.

Fig. 2 is a plan view of the mixer and burner construction.

Fig. 3 is a vertical section through the mixer and burners.

Fig. 4 is a transverse section on the line 4—4 of Fig. 3.

The improved mixer includes a conduit 1 having a suitable needle valve structure 2 extending into the end thereof and provided with a laterally projecting fuel supply pipe 3 which may be controlled by a suitable valve 4. The needle valve construction is regulated by a usual handle 5 upon the end of threaded rod 6 having its end formed as a needle valve 7 co-operating with valve seat 8.

The fuel thus supplied to conduit 1 is mixed with air as by providing conduit 1 with spaced openings 9 forming air intakes. The supply of air may be controlled by a sleeve 10 sliding upon conduit 1 and adapted to regulate the size of openings 9.

Conduit 1 terminates in an enlarged chamber 11 curved lengthwise of the conduit, and provided, at its intake end from conduit 1, with a baffle 12 curving downwardly over said intake, so as to direct the air and fuel downwardly and around the lower curved surface of the chamber, and thence against an upwardly curved baffle 13 provided at the outlet end of chamber 11, so as to thoroughly mix the air and fuel within chamber 11 and before the discharge of said mixture through

the outlet end of the chamber which communicates with a conduit extension 14.

The conduit 14 terminates in an upwardly and reversely bent portion 15 which, at its upper side, is provided with suitable burner structures 17 which may be of any suitable design and which are, preferably, cast integral with conduit 15. A baffle 18 extends within the conduit for the combustible mixture at the bend connecting conduit portions 14 and 15, said baffle being in front of the first burner opening along conduit 15 which is in alinement with the path of the combustible mixture through the bent portion of the conduit. As a result the combustible mixture will be caused to flow along the length of conduit 15 so as to prevent an excessive discharge thereof through the first burner opening.

In order to prevent a greater discharge of the combustible mixture through some of the burner openings than at others and thus insure a uniform burning by the burners, transverse abutment elements shown as rods 20 are arranged in conduit 15. These abutment elements will be impinged by the flowing combustible mixture so as to break up the direct flow of the latter and thus cause all of the burner openings to be supplied with the combustible mixture in equal amounts.

The air and gas mixer and burner structure, as thus described, may be mounted in any suitable stove casing, such as shown at 22.

The structure, as thus described, provides for the efficient mixing of the fuel and gas for a combustible mixture, and also makes possible the uniform distribution of said mixture to a plurality of burners arranged along the length of the conduit for the fuel.

Various changes may be made without departing from the spirit of the invention as claimed.

What is claimed is:

1. A gas and air mixer comprising a straight conduit portion with lateral air openings and adapted to receive a gas nozzle at its front end at right angles to the air openings, there being an enlarged upwardly and downwardly curved chamber portion at the rear end of the straight portion, a baffle extending downwardly into the front part of the chamber, and a second baffle extending upwardly and forwardly into the rear part of the chamber.

2. A gas and air mixer comprising a straight conduit portion with lateral air openings and adapted to receive a gas nozzle at its front end at right angles to the air openings, there being an enlarged upwardly and downwardly curved chamber portion at the rear end of the straight portion, a baffle extending downwardly into the front part of the chamber, a second baffle extending upwardly and forwardly into the rear part of the chamber, a reversely bent portion extending from the back side of the chamber portion, a horizontal baffle extending forwardly above the bend, there being burner outlets above the baffle, and rods crosswise below the burner outlets.

In testimony whereof I have signed my name to this specification.

WILLIAM H. CAIN.