May 22, 1923. 1,456,250

C. MUNZNER

GAS AND AIR MIXER

Filed Jan. 3, 1922

Fig. 1.

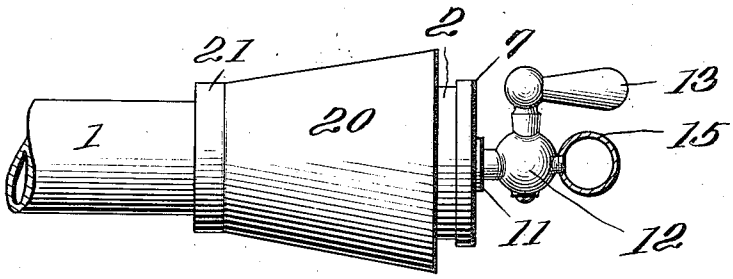
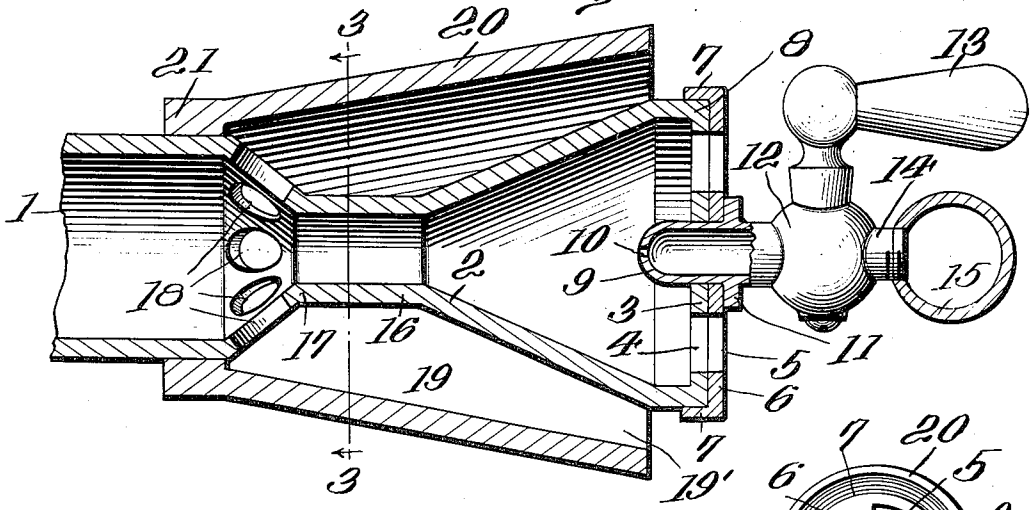


Fig. 2.



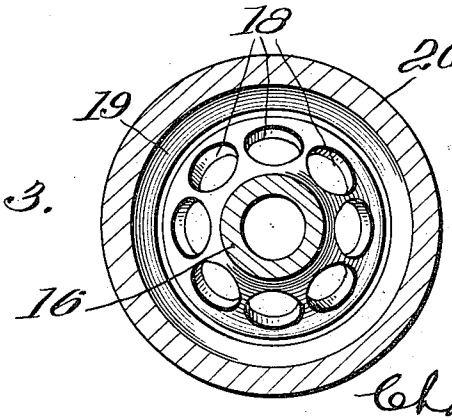


Fig. 3.

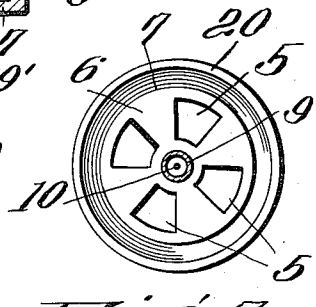


Fig. 4.

Inventor

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By A. S. Pattison

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UNITED STATES PATENT OFFICE.

CHARLES MUNZNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO AMERICAN STOVE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF NEW JERSEY.

GAS AND AIR MIXER.

Application filed January 3, 1922. Serial No. 526,821.

To all whom it may concern:

Be it known that I, CHARLES MUNZNER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Gas and Air Mixer, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to an improvement in a gas and air mixer for use on gas stoves or other gas burning appliances using gas for fuel.

The object of my invention is to provide a novel gas and air mixer for use on gas stoves or other gas burning appliances.

A further object of my invention is to provide an improved gas and air mixer constructed to supply to the gas an extra amount of air to those devices now known in the art.

A still further object of my invention is to provide an improved gas and air mixer which is cheap and simple of construction and manufacture and highly efficient in operation.

Another object of my invention is to provide an improved gas and air mixer having certain novel features of construction which will be hereinafter more specifically set forth in the following description and accompanying drawings:

In the drawings: Figure 1 is a side elevation of my improved gas and air mixer, having the gas conduit supply and the mixing tube leading to the burner.

Fig. 2 is a longitudinal vertical section of Fig. 1.

Fig. 3 is a section view taken on the line 3—3 of Fig. 2 looking in the direction indicated by arrows.

Fig. 4 is a top plan view of the air regulator.

The drawings disclose a form in which my improved gas and air mixer may be constructed although it will be understood that I do not limit myself to the particular configuration of the several parts of my device. Throughout the description like parts are designated by similar reference numerals, 1 representing a mixing tube leading to a gas burner (not shown). One end of the mixing tube 1 has an enlarged mixing chamber 2 provided with a transverse web or plate 2 having openings 4 therein which are adapted to register with openings 5 in a shutter 6 having a flanged end 7, in engagement with the end 8 of the mixing chamber 2 for retaining it in place.

Protruding through the center of both the shutter 6 and the web or plate 3 of the mixing chamber 2 is a gas jet 9 provided with a gas outlet opening 10. The gas jet 9 is provided with a flanged shoulder 11 which abuts the outer face of the shutter 6 and is further provided with a common type of gas control valve 12 having an operating handle or lever 13. The outer end 14 of the gas jet 9 is screw-threadedly or otherwise suitably connected with a gas supply conduit 15.

The mixing chamber 2 and the mixing tube 1 are connected by a reduced portion or supplemental gas jet 16 which flares outwardly as at 17 at its connection with the mixing tube 1. The flared portion 17 carries a plurality of openings 18 into a chamber 19 having an open end 19′ formed by the shell or guard 20 suitably mounted as at 21 upon the mixing tube 1.

The operation of my device is as follows:

Gas is turned on from the supply conduit 15 through the gas cock or valve 12 by means of its operating handle 13 and is discharged through the opening 10 of the jet 9 into the mixing chamber 2. The discharged gas in its course draws in air through the regulator openings 5 which register with the mixing chamber openings 4 and this air co-mingles with the gas. If, however, the gas is rich in carbon it does not draw a sufficient amount of air to support proper combustion and in order to furnish a larger supply of air the gas mixture in the mixing tube 2 is discharged through the larger jet 16 into the mixing tube 1. On its course into the mixing tube 1 the gas draws in additional air through the openings 18 of a sufficient amount to properly support combustion at the point of delivery of the mixing tube to a gas burner.

It will be readily understood that the guard 20 is to guide the currents of air admitted through its open end 19′ and to protect the current of airs from outer influences. It will also be readily understood that should any part or amount of air supplied to the gas be too excessive that the same can be reduced by rotating the shutter 6 upon its flanged edge 7 which is in engagement

with the end 8 of the mixing chamber. This rotation of the shutter can be regulated at will to partially reduce the openings 5 or to close them entirely should this be necessary.

Having thus described my invention what I claim and desire to secure by Letters Patent is:

1. An air and gas mixer for gas burners, comprising an outwardly enlarged mixing chamber 2, provided at its outer end with an inwardly extending gas jet much shorter than the length of the mixing chamber, the outer end of the mixing chamber provided with air-inlet openings, a reduced portion 16 having its wall enlarged inwardly and provided with air-inlet openings, the outwardly enlarged wall formed into a mixing tube for the gas and air passing therethrough.

2. An air and gas mixer for gas burners comprising a combined mixing chamber and a mixing tube formed of a continuous wall, the mixing chamber enlarged outwardly and having a gas jet therein much shorter than the length of the mixing chamber, the outer end of the mixing chamber having openings surrounding the said gas jet, said continuous wall forming a reduced portion which is enlarged inwardly and then formed into a mixing tube, the inwardly enlarged wall provided with air-inlet openings 18, for the purpose described.

3. An air and gas mixer for gas burners comprising an inwardly tapered chamber having a gas opening and air openings at its outer end the tapered portion having an extended straight wall ending in an enlarged portion, the said enlarged portion having air openings for the purpose described.

4. A combined gas and air mixer for burners comprising a tubular mixing chamber having gas and air openings at its outer end, said tube having its wall provided with air openings removed fron the said gas opening, and a surrounding shield having its inner end fitting the tube beyond the last said air openings, the outer end of the shield being open for the purpose described.

5. A combined gas and air mixer having an outwardly enlarged chamber with gas and air openings at its outer end, the wall of said chamber being enlarged and having air openings, a surrounding tubular shield having its inner end fitting the chamber just beyond the last said air openings, the outer end of the shield being open, for the purpose described.

6. A gas and air mixer for gas burners comprising a tubular mixing chamber having gas and air openings at its outer end, the opposite end of said tube enlarged inward, said enlargement having air openings for the purpose described.

In testimony whereof I hereunto affix my signature.

CHARLES MUNZNER.