Dec. 15, 1931. A. STOCKSTROM 1,837,080

MIXING TUBE FOR GAS RANGES

Filed Nov. 19, 1929

Fig. 4.

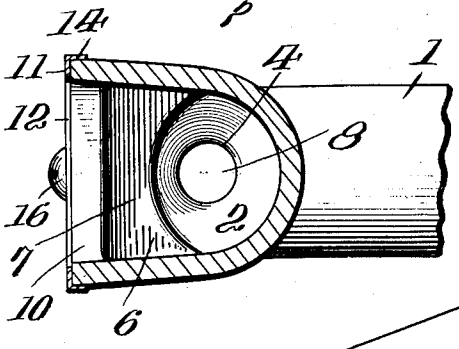


Fig. 1.

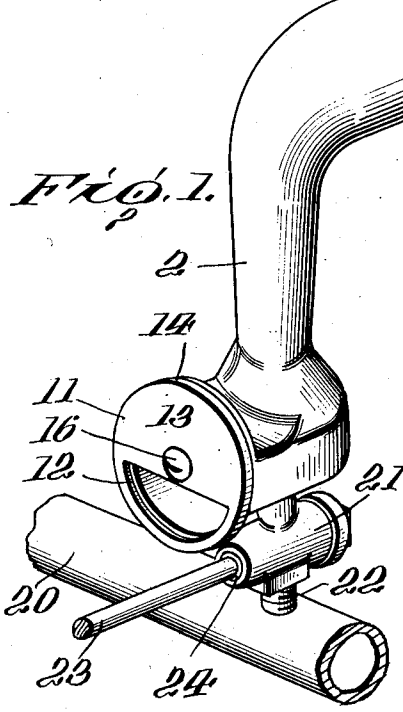


Fig. 2.

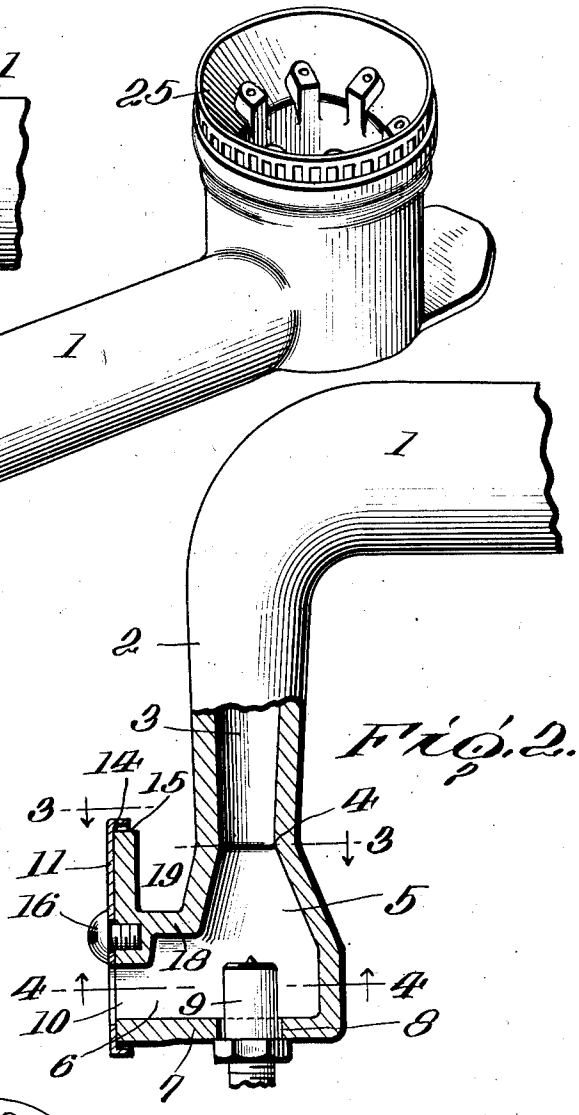
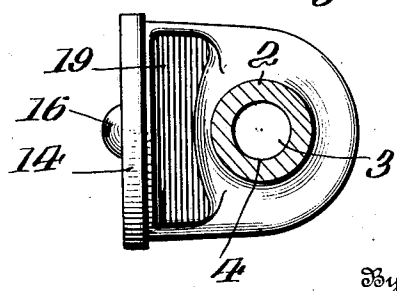


Fig. 3.



Inventor

A. Stockstrom,

By Pattison, Wright & Pattison

Attorneys

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UNITED STATES PATENT OFFICE

ARTHUR STOCKSTROM, OF ST. LOUIS, MISSOURI, ASSIGNOR TO AMERICAN STOVE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF NEW JERSEY

MIXING TUBE FOR GAS RANGES

Application filed November 19, 1929. Serial No. 408,382.

This invention relates to improvement in mixing tubes for gas ranges and the primary object is the special construction of the inlet end of the mixing tube which will be clearly described hereinafter.

This invention is for use in connection with an L-shaped manifold, the vertical portion of the L-shaped manifold is its inlet end and the particular improvement involved in this invention is to provide the vertical inlet end of the mixing tube with a horizontally laterally extending enlarged chamber.

A further object of the invention is to pass the gas nipple through the bottom of the said enlarged chamber and to apply to the outer end of this enlarged chamber a shutter that controls the amount of air flowing into the chamber and mixing with the gas flowing through the said nipple.

A further improvement of this present invention is to provide the inlet end of the horizontal chamber with a circular portion that extends above the upper wall of the horizontal enlargement thereby accommodating a circular shutter that is concentrically pivoted on the outer end of the enlarged chamber, the said shutter having in its lower portion an air opening that communicates with an air opening formed in the outer end of the said horizontal chamber.

Another object of this improvement is to so shape the inlet end of the mixing tube that a shutter controlling air to the said horizontal chamber is readily accessible and can be readily adjusted for proportioning the proper amount of air fed to the gas supplied to the inlet end of the vertical portion of the said L-shaped mixing tube.

Other objects of the invention will appear from the following description.

In the accompanying drawings,

Figure 1 is a perspective view of my improved mixing tube.

Figure 2 is a vertical central sectional view showing the inlet portion of my improved tube.

Figure 3 is a horizontal section on the line 3—3 of Figure 2 looking in the direction indicated by arrows.

Figure 4 is a horizontal sectional view on the line 4—4 of Figure 2 looking in the direction indicated by arrows.

A burner for gas ranges having essentially an L-shaped mixing tube is particularly intended for use with a manifold that is located centrally within the top burner portion of ranges. When mixing tubes are located as just mentioned, access cannot be conveniently obtained to its inlet end which is located within the vertical walls of the housing of the said top burner portion. This top burner portion is well understood by those skilled in the art and therefore need not be here shown.

Referring now particularly to the drawings here presented, 1 is an L-shaped manifold having its vertical inlet end 2 gradually tapered and its opening 3 therein is correspondingly gradually tapered being made smaller at substantially its inlet end as shown at 4. From the point 4 on, the mixing tube is formed to form a slightly enlarged chamber 5.

The present improvement relates particularly to providing the inlet end 5 with a horizontally extending chamber 6. It will thus be observed that this horizontal chamber is at right angles to the enlarged portion 5 of the said mixing tube.

In Figure 4 this chamber 6 is shown of outwardly enlarged dimension, and this chamber 6 is shown considerably larger than the restricted portion 4 of the vertical portion 2.

Another feature of the present invention is to form in the horizontal bottom 7 a vertically extending opening 8 which is located in a position that has its axis substantially in a vertical line with the axis of the vertical portion 2 of said mixing tube. Passing through this opening 8 is the usual gas nipple 9. Formed in the outer end of the horizontal chamber 6 is an air opening 10 that has a shape preferably substantially half moon shape. Attached outside of the outer end of this chamber 6 is a shutter 11 that has an opening 12 formed therein corresponding in shape with the opening 10 made in the outer end of the chamber 6. This shutter 11 has its upper portion 13 preferably formed solid and the periphery 14 of this shutter extends

inward and embraces the circular end 15 projecting upward from the outer end of the chamber 6. It will be noted that these half moon shaped openings 10 and 12 are located below the center of this shutter 11 and that a suitable screw 16 passes through the center of this shutter 11 and into the upper wall 18 of the inlet end of the horizontal chamber 6.

Attention is particularly directed to the fact that the formation of this horizontal projecting chamber is such that located above its upper wall 18 is a transversely extending opening or slot 19 that extends across the said chamber 6 and between the member 15 and the adjacent outer wall of the vertical portion 2 of the said mixing tube.

By reference to Figures 3 and 4 the detail of construction of the walls of this horizontal chamber 6 will be clearly seen.

It has heretofore been stated that this mixing tube is particularly intended to be used in connection with a manifold located within the housing of the top burner portion of the range. In Figure 1 this manifold 20 is illustrated. It will be seen that the nipple 9 is formed as a part of a valve housing 21, and the lower end of the housing 22 is screw threaded into the manifold 20. The handle 23 that is connected with the valve 24 located within the housing 21 extends outwardly to a position where it can be conveniently operated.

The improvement here shown is particularly adapted to be used in connection with the burners shown in my Patent No. 1,648,789, dated November 8, 1927 to which attention is particularly directed. By comparing the construction of the inlet end of the vertical portion 2 of the mixing chamber here shown with that of my said patent, the difference is very clearly seen.

In operation it will be noted that the air admitted to the said mixing tube flows horizontally through the openings 10 and 12 to the gas inlet of the nipple 9, and that the gas mixes with this air, and they both flow together through the mixing tube to the burner 25.

It will be readily understood that this special construction of the inlet end of the mixing tube enables the ready access to the shutter 11 for properly adjusting it and that access is also readily had to the screw 16 for tightening the same after the adjustment is made to hold it in the position to which it has been adjusted.

While I have described the improvement in its details, variations may be made therein without departing from the present improvement so long as they come within a liberal interpretation of the appended claims.

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

1. An improved mixing tube for gas burners comprising an L-shaped manifold having a horizontal outlet arm provided at its end with a vertically arranged burner and a vertical arm arranged with a flattened horizontally extending portion having its outer end provided with an air opening and a gas opening in the bottom of the said horizontal portion, the parts arranged for the purpose specified.

2. An improved mixing tube for gas burners comprising an L-shaped manifold arranged to have a horizontal portion above a vertically arranged inlet portion, the end of the horizontal portion having a vertically arranged burner and the end of the vertical inlet portion having a horizontally arranged portion provided at its outer side with an adjustable air inlet, and a gas inlet vertically arranged through the bottom of the horizontally arranged portion, the parts operating as set forth.

3. An improved mixing tube for gas burners comprising an L-shaped manifold having at the end of a horizontal portion a vertically arranged burner and at the end of a vertically arranged portion an inlet portion extending horizontally at an angle to the vertical portion, said horizontally extending portion having a gas inlet passing upwardly therethrough, the outer end of the horizontally extending portion having an air inlet and carrying a vertically arranged adjustable member for regulating the air to the horizontally extending portion, the parts operating as set forth.

In testimony whereof I hereunto affix my signature.

ARTHUR STOCKSTROM.