

No. 687,668.

Patented Nov. 26, 1901.

W. G. TAYLOR.
AIR AND GAS MIXER FOR BURNERS.

(Application filed Apr. 23, 1900.)

(No Model.)

Fig. 1.

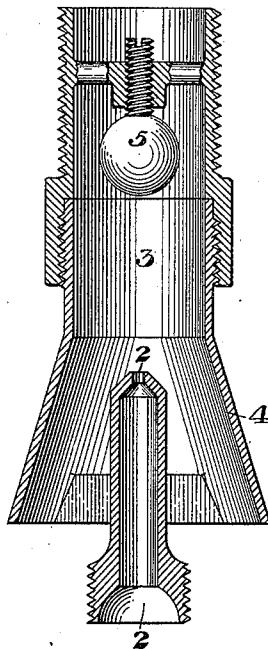
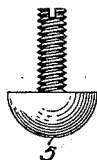


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM G. TAYLOR, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO TAYLOR BURNER AND ELECTRO PLATING COMPANY, LIMITED, OF PITTSBURG, PENNSYLVANIA.

AIR AND GAS MIXER FOR BURNERS.

SPECIFICATION forming part of Letters Patent No. 687,668, dated November 26, 1901.

Application filed April 23, 1900. Serial No. 13,890. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. TAYLOR, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Air and Gas Mixers for Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 shows in vertical section a mixer constructed in accordance with my invention. Fig. 2 shows an abutment of modified construction.

The object of my invention is to provide means for efficiently mixing with air the gas which is supplied to the burners of stoves, fireplaces, &c.

It is well known that the efficiency of combustion and freedom from smoke of the flame in domestic fireplace-burners is a matter of very great importance, and these results, I find, are most advantageously secured when means are taken to secure a thorough mixing of the gas with air before it enters the burner.

Where the gas is thoroughly mixed with air in proper proportions, it burns with a clear blue flame without depositing smoke upon the heating-surfaces of the fireplace or stove; but when the mixture is imperfect the flame is apt to be smoky and considerable proportions of carbon are deposited in the form of soot, resulting not only in inconvenience and dirt, but in impairing the combustion and causing waste of fuel. For the purpose of securing the best possible mixture of the gas with air I place in the ordinary air-mixer, directly above the gas-jet, an abutment having a curved (preferably spherical) surface directed toward the jet. When the gas-jet strikes this surface, a swirling motion is imparted to it, and it is caused to mix with the air in such a thorough manner as to secure results better than I have been able to obtain with any other device known to me.

In the drawings, 2 represents the gas-jet opening, 3 the mixer passage or pipe which is adapted to be connected to the burner, and 4 the open skirt through which air is en-

trained by the jet. Above the gas-jet and held in the passage 3, so that there shall be a surrounding space, is an abutment 5, the face of which next to the burner is curved, preferably with a spherical curvature, and the jet of gas issuing from the opening 2 will strike upon this abutment, will be checked in its speed and receive therefrom a swirling motion, will be mixed thoroughly with the indrawn air, and will finally pass up around the abutment into the burner-chamber. In Fig. 1 the abutment is shown as constituted by a ball, which may be entirely spherical or spheroidal and which is fixed in position above the jet, and this form I intend to claim specifically, as it has certain peculiar advantages; but in Fig. 2 I show my invention modified by using instead of a ball a disk 5', with a rounded surface directed toward the jet-opening and flat on the upper side.

I claim as my invention—

1. A mixer for mixing air with gas for gas-burners, comprising in combination with the air-inlet skirt, mixer-passage and jet-opening, an abutment opposite to the mouth of the jet-opening having a curved face directed toward the same, arranged to check the speed of the gas; substantially as described.

2. A mixer for mixing air with gas for gas-burners, comprising in combination with the air-inlet skirt, mixer-passage and jet-opening, a ball-shaped abutment opposite to the jet-opening; substantially as described.

3. An air and gas mixer for gas-burners, comprising in combination with the air-inlet skirt, mixer-passage and a jet-opening, an abutment in front of the jet-opening, and having a curved face directed toward it, and mechanism for adjusting the abutment toward or from the jet-opening; substantially as described.

In testimony whereof I have hereunto set my hand April 21, 1900.

W. G. TAYLOR.

Witnesses:

THOMAS W. BAKEWELL,
H. M. CORWIN.