

(No Model.)

S. K. WAGNER.
GAS MIXER.

No. 481,604.

Patented Aug. 30, 1892.

Fig. 1.

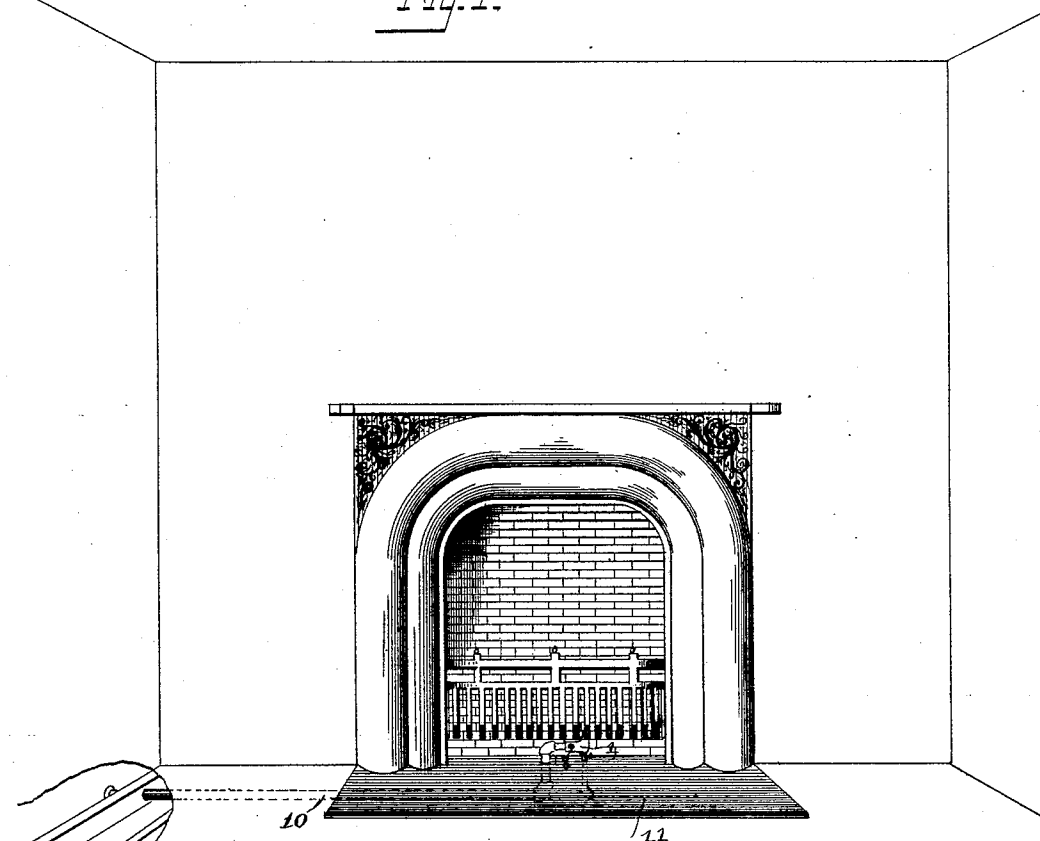


Fig. 2.

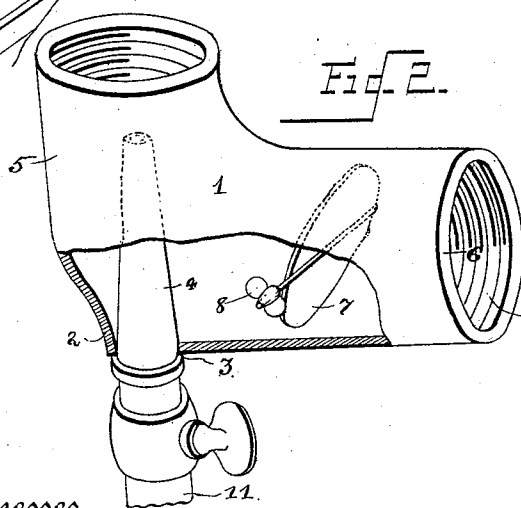
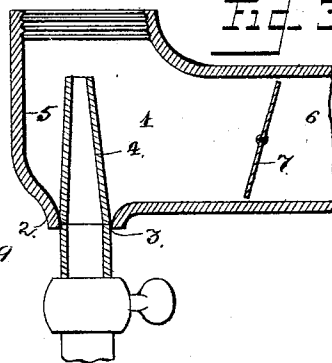


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL K. WAGNER, OF LATROBE, PENNSYLVANIA.

GAS-MIXER.

SPECIFICATION forming part of Letters Patent No. 481,604, dated August 30, 1892.

Application filed November 20, 1889. Serial No. 330,955. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL K. WAGNER, a citizen of the United States, residing at Latrobe, in the county of Westmoreland and State of Pennsylvania, have invented a new and useful Improvement in Gas-Mixers, of which the following is a specification.

The invention relates to improvements in gas-mixers.

The object of the present invention is to provide a simple and inexpensive gas-mixer, which will be especially adapted for burning natural gas and which will not injuriously affect the air of a room.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended.

In the drawings, Figure 1 is a perspective view showing the gas-mixer applied to a grate. Fig. 2 is an enlarged perspective view of the gas-mixer. Fig. 3 is a longitudinal sectional view.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates an elbow or L-shaped pipe, which constitutes a vertical mixing-chamber, and which is provided at its angle in the heel 2 with an opening 3, receiving a vertical tapering nozzle 4 for supplying gas to the mixing-chamber. The L-shaped tube is composed of a vertical arm 5, in which is arranged a nozzle, and a horizontal arm 6, in which is arranged a damper 7, having a handle 8 and adapted to control and regulate the amount of air delivered to the mixing-chamber. The horizontal arm 6 is interiorly threaded at 9 and is connected to a horizontal air-supply pipe 10, which communicates with the air outside of the room or building, whereby the air in the room is not injuriously affected. The tapering nozzle is connected with the horizontal portion of the gas-pipe 11, which is provided with a stop 12 to enable the supply of gas to be regulated. The device is adapted for burning natural gas, as ordinary burners and mixers will soon become clogged up. The nozzle of the gas-tube is tapered to allow more room in the mixing-chamber for the air to cir-

culate around the end of the nozzle, thereby greatly facilitating the mixing of gas and air, and the nozzle, acting as an injector, causes a sufficient current to obviate the necessity of employing a safety-check. In the mixing-chamber the nozzle 4 extends vertically and terminates in a plane slightly above that of the upper line of the horizontal arm 6, which is joined to the vertical arm 5 on the inner bend of the elbow by a deflecting curve, as shown clearly in Fig. 2. Thus the air admitted by the damper 7 is deflected into the vertical chamber 5 by the curve of the elbow, and there meeting the gas under pressure is violently agitated by such contact and is irresistibly drawn up and commingles with the gas by reason of the force of the latter carrying the air along with it. Therefore it will be understood that by reason of this peculiar construction and location of the gas-nozzle and its relation to the mixing-chamber and air-passage the process of mixing the gas with the air is materially facilitated and a greater amount of air is commingled and carried along with the gas to the near point of combustion. This feature of my invention is of particular advantage and merit and is deserving of stress in view of the fact that it has been previously attempted to mix the gas with air at a point removed from the place of combustion in a horizontal chamber where the gas enters and leaves in a horizontal manner and the air is admitted vertically at right angles to the flow or pressure of gas, which pressure, being greater than that of the air, prevents to a certain extent the entrance and mixture of the latter.

It will be seen that the mixer is simple and inexpensive in construction, and that it cannot become clogged by natural gas, and that the gas and air are thoroughly commingled.

What I claim is—

In a system of natural-gas supply, the combination, with a combustion-grate, of a mixing-chamber located underneath and in proximity to said grate and comprising a vertical and horizontal arm mutually and integrally connected by a curved elbow, a horizontal gas-supply pipe terminating in said mixing-chamber in a vertical tapered nozzle having its discharge-orifice at a point slightly above

the line of the horizontal tube or arm, a manually-adjustable damper pivoted transversely across the air-passage of said horizontal arm, and an air-supply pipe connected to the horizontal arm beyond the chamber and communicating at its other extremity with the exterior air, the whole being so arranged that the gas and air come in contact with each other under pressure in substantially a ver-

tical plane from opposite converging planes, so substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

SAMUEL K. WAGNER.

Witnesses:

DANIEL RIESER,
H. F. SEAMES.