E. G. STAHLMAN.

GAS BURNER.

APPLICATION FILED APR. 15, 1919.

1,329,641. Patented Feb. 3, 1920.

Fig. 1.

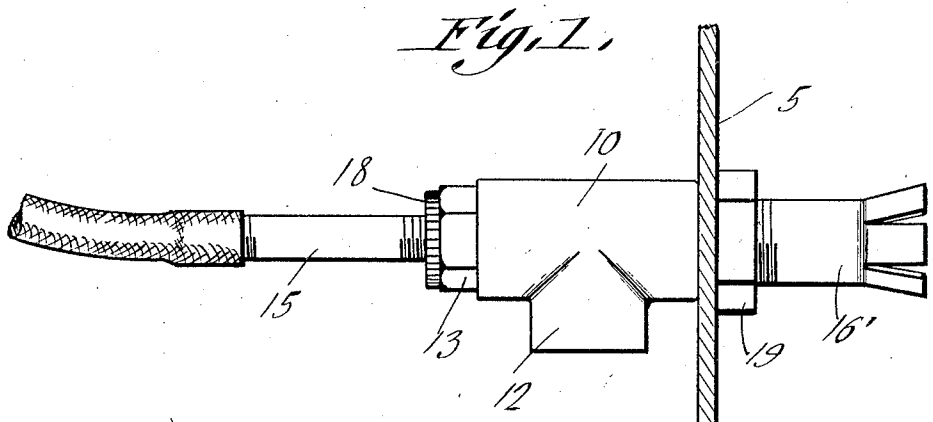


Fig. 2.

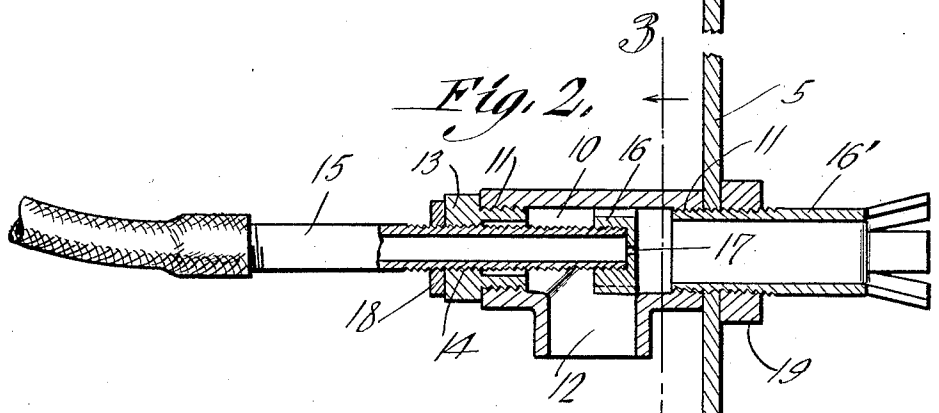
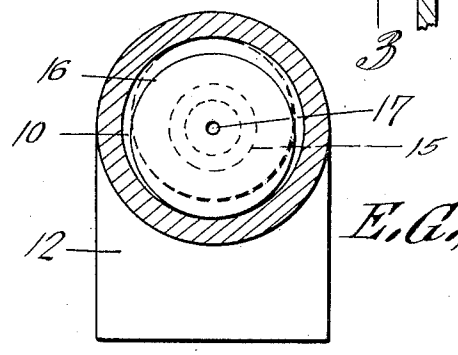


Fig. 3.



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UNITED STATES PATENT OFFICE.

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GAS-BURNER.

1,329,641. Specification of Letters Patent. Patented Feb. 3, 1920.

Application filed April 15, 1919. Serial No. 290,323.

To all whom it may concern:

Be it known that I, EDWARD G. STAHLMAN, a citizen of the United States, residing at Pomona, in the county of Los Angeles and State of California, have invented a new and useful Gas-Burner, of which the following is a specification.

The present invention relates to gas burners, the object being to provide a gas burner wherein the amount of air to mix with the gas may be regulated, and wherein the air is uniformly and evenly supplied to the mixing chamber and gas, whereby a more perfect mixture and combustion is produced, thereby rendering the burner more quiet and obviating the "sputtering" so common in gas burners.

A further object of the invention is to provide a gas burner which is provided with a spreader and which will not be extinguished of its own accord.

Another object of the present invention is to provide a gas burner which is adapted to stoves and furnaces of various constructions and which may be readily applied thereto without altering the parts of the same.

It is another object of the invention to provide a burner which will allow the gas to thoroughly mingle with the oxygen before the same is ignited.

An additional object of the invention is to provide a burner for heating purposes which consists of few parts, is simple in construction, and which may be manufactured and sold at a minimum cost.

With the above objects and advantages in view the invention consists of combinations of elements, constructions and operations, and details all of which will be hereinafter fully set forth in the following disclosure and recited in the sub-joined claims.

On the drawings Figure 1 is a side elevation of my improved burner in operative position;

Fig. 2 is a longitudinal sectional view of the same; and

Fig. 3 is a transverse sectional view taken on line 3—3 of Fig. 2.

Referring in detail to the drawings the numeral 5 denotes a stove of the usual construction to which my improved burner is applied.

My improved burner consists of a mixing chamber 10 having both ends provided with interior screw threads 11. This mixing chamber is in the form of a T-coupling and has an air inlet 12. A bushing 13 is threaded in one end of the T-coupling 10 and is formed with interior screw threads 14. A pipe 15 is threaded in the bushing 13 and is adjustable therein. This pipe 15 extends within the mixing chamber and is movable longitudinally within the same and is capable of moving the entire length of the same. An eccentric shaped valve 16 is formed upon the inner end of the pipe 15 and is provided with an outlet 17 through which the gas passes. The opposite end of this pipe 15 is threaded and is adapted to be connected with the usual flexible tubing which in turn is connected with the gas supply (not shown).

A nut 18 is threaded upon the pipe 15 and is adapted to abut the bushing 13, this limits the inward movement of the pipe 15 in the mixing chamber. The air in entering the inlet 12 has to pass around the valve 16 and the volume of air is either increased or diminished by moving the valve either to the right or left of this opening or inlet 12. In addition, it should be noted that the air which is admitted through the inlet 12 at one side of the mixing chamber necessarily requires means of preventing a greater flow of air to the mixing chamber on the side nearest the air inlet, owing to the air taking the course of least resistance. Should the head be centrally located, a greater amount of air will be admitted on the side nearest the opening and to obviate this the head or eccentric shaped valve 16 is provided so that by turning it to the position opposite to that shown in Figs. 2 and 3, in addition to moving longitudinally or translating, said valve is adapted to be brought in closer relation to the opening or wall of the mixing chamber at the opening side thereof, as shown in dotted lines in Fig. 3 which will cause the opening to be gradually increased in width toward the side opposite the opening which will cause an approximately even flow of air to the mixing chamber on all sides or the full circumference of the valve head, thereby producing a perfect mixture which is necessary to perfect combustion, in addition to rendering the burner quiet and obviating the "sputtering" so common in gas burners. The cross-section of the opening formed by the eccentric-relation of the valve to the wall of the circular pipe forming the mix-

ing chamber, is tapered circumferentially, being oppositely tapered from its intermediate point toward its ends or crescent shaped as shown. The adjustment described is also to prevent the air from being so far excluded from passage through the mixing chamber as to cause the burner to be extinguished should adjustment be attempted by an inexperienced person or through ignorance in moving the head too close to the reduced diameter of the mixing chamber or burner proper.

The burner proper consists of relatively large pipe or conduit 16′ which extends through the stove 5 and is threaded in the forward end of the mixing chamber 10. A lock nut 19 is threaded upon this member 16′ and is threaded against the wall of the stove 5. The pipe or conduit 16′ is provided with a plurality of longitudinal slits, this end of the tube being flared so as to spread the flame. This manner of forming the burner also serves to prevent the light from going out on its own accord.

This embodiment of the invention is considered the preferred construction, but it is to be understood that the same is susceptible to various modifications, and that my limits of modification are only governed by the appended claims.

What is claimed is:—

1. In a burner of the character described, a mixing chamber having an air inlet, a pipe longitudinally adjustable in the mixing chamber adapted to conduct the gas into the same, an eccentric shaped valve on the end of the pipe having an outlet therein, the valve being movable across the air inlet, and a burner threaded in one end of the mixing chamber.

2. In a gas burner, a mixing chamber having an air inlet at one side thereof, and having its opposite ends provided with interior screw threads, a bushing threaded in one end of the mixing chamber, a gas pipe threaded in the bushing and extending with the mixing chamber and longitudinally adjustable therein, a valve formed upon the inner end of the gas pipe and having an opening therein, the valve being movable backward and forward across the air inlet, a tube threaded in the opposite end of the mixing chamber and having its outer end flared outwardly and provided with a number of slits, to spread the flame.

3. In a burner, a mixing chamber of circular cross-section having an air inlet at one side thereof, a gas pipe threaded in one end of the mixing chamber and longitudinally adjustable therein, an eccentric shaped valve mounted on the inner end of the gas pipe and having an opening therein, the valve being movable across the air inlet, and a burner threaded in the opposite end of the mixing chamber.

4. In a gas burner, a mixing chamber including an air inlet at one side thereof, a gas pipe longitudinally adjustable in the mixing chamber, a valve of eccentric formation formed upon the end of the gas pipe and having an opening therein, the valve being movable across the air inlet, and providing a circumferentially extending passage around the same and between it and the pipe, said passage cross sectionally tapering in opposite directions, and a flared burner threaded in the forward end of the mixing chamber.

5. In a burner, a mixing chamber, said mixing chamber having an air inlet at one side thereof, a fuel pipe longitudinally adjustable in the mixing chamber, and an eccentric shaped valve disposed upon the end of the fuel pipe and coöperating with the wall of the mixing chamber.

6. A gas burner comprising a mixing chamber having an air inlet at one side, a fuel supply pipe threaded in one end thereof, and adapted when turned to be fed forward or retracted, and a head on said pipe forming a valve, said head forming a circumferential passage or channel between it and the interior wall of the mixing chamber, said passage being tapered in cross-section.

7. In a burner, a mixing chamber, said mixing chamber being of circular cross section and having an air inlet at one side thereof, a fuel pipe extending into the mixing chamber, and an eccentric shaped valve disposed upon the end of the fuel pipe and coöperating with the wall of the mixing chamber to produce a crescent shaped passage between the valve and the wall of the mixing chamber opposite to the air inlet.

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

EDWARD G. STAHLMAN.

Witnesses:
WM. MCMULLIN,
GEO. R. TYEN.