

H. C. FABER.
GAS BURNER.
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947,014.

Patented Jan. 18, 1910.

Fig. 1.

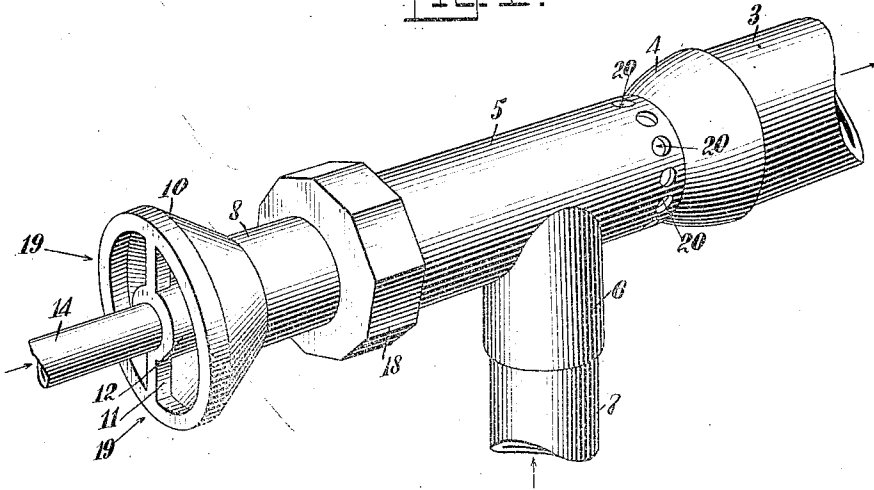
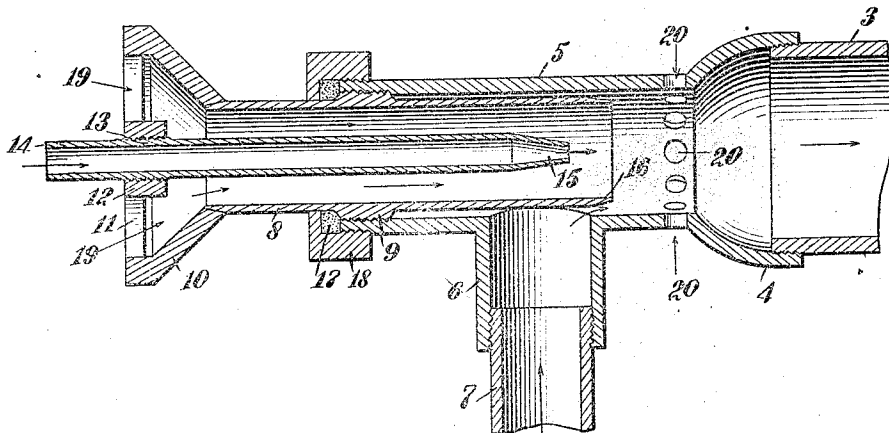


Fig. 2.



WITNESSES

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HARRY CARL FABER, OF MONONGAH, WEST VIRGINIA

GAS-BURNER.

947,014.

Specification of Letters Patent. Patented Jan. 18, 1910.

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To all whom it may concern:

Be it known that I, HARRY CARL FABER, a citizen of the United States, and a resident of Monongah, in the county of Marion and State of West Virginia, have invented a new and Improved Gas-Burner, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide an apparatus wherein air steam and gas are mixed and burned; to provide an apparatus wherein the quantity of gas being mixed with the other ingredients may be regulated; and to provide an apparatus wherein the construction is at once simple, durable, economical and efficient.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in both views, and in which—

Figure 1 is a perspective view of an apparatus constructed in conformity with the present invention; and Fig. 2 is a vertical longitudinal section of the same.

The apparatus herein shown and described is generally used in a furnace, the burner feed pipe 3 whereof is engaged by a bell-shaped end 4 of a tube 5 constituting the body of this apparatus. The tube 5 is provided with a lateral extension 6, which is screw threadably connected with a gas supply pipe 7. The end of the straight section of the tube 5 opposite the bell-shaped end 4, is provided with screw threads internal and external. The internal threads are provided to receive corresponding threads formed on the body of a tube 8, as seen at 9. The tube 8 is of a straight body provided with a flared end section 10, the section 10 being driven onto the said tube 8. The end section 10 is provided to support a spider 11, which carries a perforated and screw threaded hub 12. Extended through the perforation in the hub 12, and held therein by the screw threads shown at 13, is a small pipe 14 suitably connected with a steam supply pipe, not shown in the present drawings. The pipe 14 is extended within the tube 8 to near the end thereof, and is provided with a contracted nozzle 15 provided to produce a rush of the steam as delivered from the pipe 14.

The tube 8, supporting the pipe 14, normally extends within the straight section of the tube 5, past the entrance of the extension 6, into the tube 5. The inner end of the

tube 8 is beveled, as shown at 16. By means of this bevel the channel through the extension 6 to within the tube 5 may be contracted or expanded without passing the inner end of the tube 8 outside of the entrance of the extension 6 to within the tube 5. By turning the tube 8 it is advanced or receded by the screw threads shown at 9 to advance or recede the bevel end 16, and thus contract or expand the opening for the passage of the gas from the extension 6 to within the tube or mixing chamber 5.

The joint between the tubes 5 and 8 is sealed by packing 17, which is held in position by a suitable nut 18, which engages the external threads formed on the end of the tube 5.

The operation of an apparatus constructed as above described is as follows: The gas having been turned on through the pipe 7 and extension 6, it blows into the tube 5 and bell-shaped end 4 and feed pipe 3. The steam is turned on at 14. The rush of the steam from the contracted end of the pipe 14 produces a suction within the tube 8, causing the air to flow in through the openings 19, 19 in the end section 10, and thence through the tube 8 to the feed pipe 3. When the gas is being ignited it may prove advantageous to have the same as rich in gas as possible, in which case the steam is not admitted through the pipe 14, and the air may be excluded from the tube 8 by blocking the openings 19, 19. When, however, the ignition has occurred, the openings 19, 19 are exposed, permitting the air to flow into and mix with the gas in the pipe 3, passing thence to the burner as a combustible material. The steam is then admitted through the pipe 14, producing the effect mentioned of accelerating the flow of air through the tube 8. A further effect is produced by the admission of steam, in that the steam is mixed with the air and gas, adding materially to the combustible and heat producing quality of the gas as it enters the combustion chambers thoroughly mixed and highly heated.

I have provided in the side of the tube 5, between the extension 6 and bell-shaped end 4, a series of perforations 20, 20, which are employed to augment the supply of air to the pipe 3.

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

1. A gas burner, consisting of a tubular body having one end bell-shaped and its other end internally and externally screw threaded, the body being provided with a plurality of openings adjacent to its bell-shaped end and with a lateral extension intermediate of its ends for connecting a gas pipe thereto, an air tube having a beveled inner end and a flared outer end provided with a spider having a central and internally threaded hub, the said tube being externally screw threaded and screwing into the body with its inner end projecting over the lateral extension thereof, a steam pipe screwing into the hub of the spider of the air pipe and having a nozzle at its inner end, the steam pipe extending into the air pipe to within a short distance of its inner end, and a nut on the air pipe and screwing onto the body.

2. A gas burner, comprising a tubular body having one end internally screw threaded and provided with openings adjacent to its other end and intermediate of its ends with a lateral extension for connection with a gas pipe, an air pipe having a beveled inner end and a flared outer end, the air pipe being externally screw threaded and screwing into the body with its inner end projecting over the lateral extension thereof and the flared end of said pipe being provided with a central and internally threaded hub, and a steam pipe externally threaded and screwing into the hub of the air pipe.

3. A gas burner, comprising a tubular body internally screw threaded at one end

and provided intermediate of its ends with a lateral extension for connection with a gas supply, an air pipe of slightly less diameter than the body and having a beveled inner end and a flared outer end, said pipe being externally screw threaded intermediate of its ends and screwing into the body with its beveled inner end extending a short distance beyond the lateral extension of said body and controlling the flow of gas through the same, the flared end of the said pipe being provided with a spider having a central hub, and a steam pipe secured in the hub of the spider and extending into the air pipe to within a short distance of its inner end.

4. A gas burner, comprising a tubular body having a lateral extension intermediate of its ends for connection with a gas supply, an air pipe of slightly less diameter than the body and adjustably mounted in said body with its inner end extending a short distance beyond the lateral extension and serving to control the flow of gas through said extension, the outer end of the air pipe being flared and open, and a steam pipe supported in the flared end of the air pipe and extending to within a short distance of its inner end.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRY CARL FABER.

Witnesses:

C. F. BAKER,
H. W. BICE.