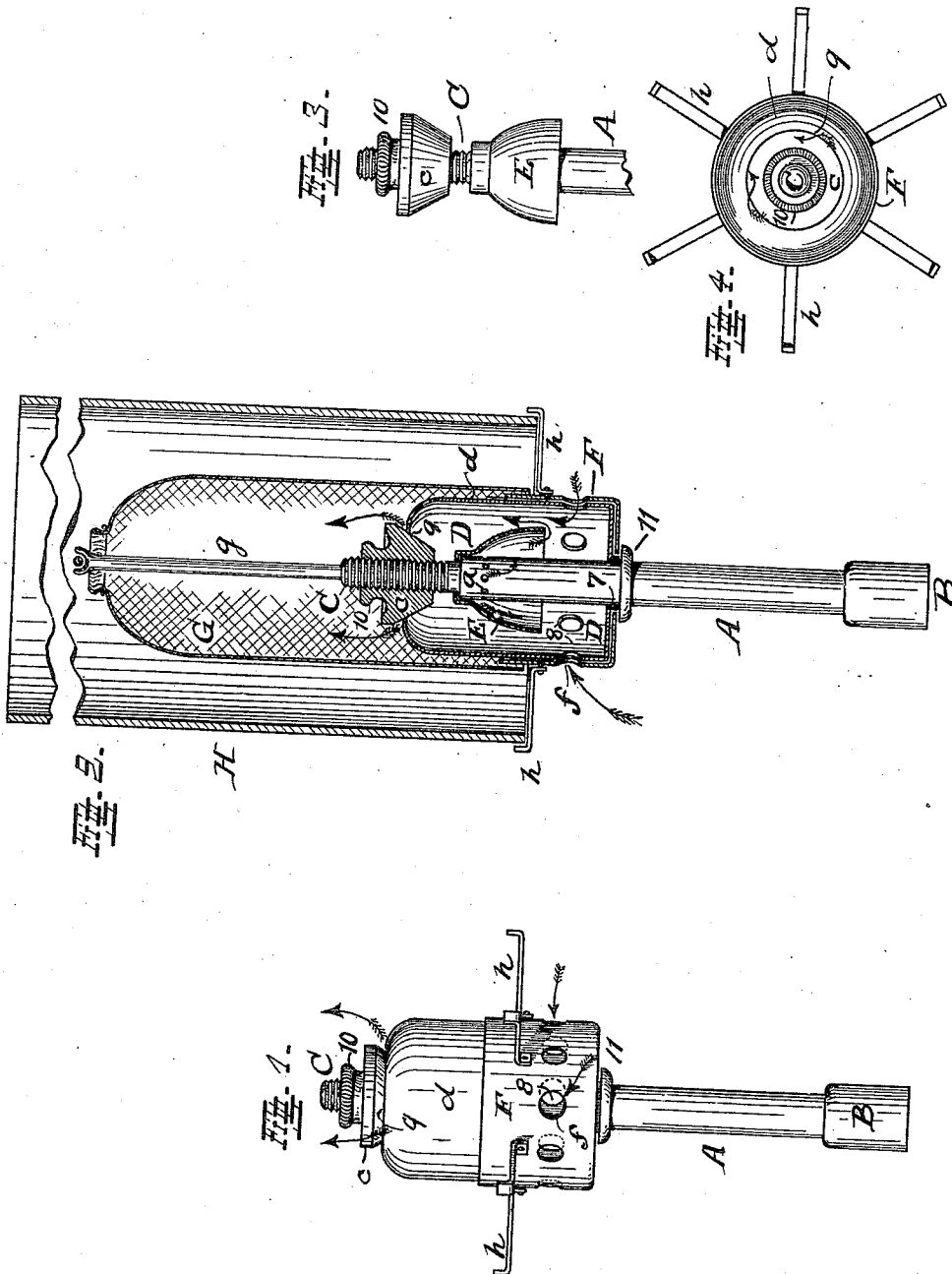


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GAS BURNER.  
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972,697.

Patented Oct. 11, 1910.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## GAS-BURNER.

972,697.

Specification of Letters Patent.

Patented Oct. 11, 1910.

Application filed April 9, 1910. Serial No. 554,432.

*To all whom it may concern:*

Be it known that I, CHARLES HOFF, a citizen of the United States, and a resident of Cincinnati, Hamilton county, State of Ohio, have invented certain new and useful Improvements in Gas-Burners; and I do declare the following to be a clear, full, and exact description thereof, attention being called to the drawing which accompanies this application and forms a part thereof.

This invention relates to improvements in the construction of burners using gas for illuminating purposes.

The invention consists of the particular construction hereinafter described and claimed and illustrated in the accompanying drawing, in which:—

Figure 1, is a side-elevation of the burner. Fig. 2, is a vertical section of it with auxiliary devices added. Fig. 3, is an elevation of the internal parts of the burner. Fig. 4, is a top-view of it.

In the drawing, A indicates a pipe which constitutes the attaching stem of the burner, it being provided for such purpose with a socket B, for connection to a branch or service-pipe, or to a fixture, bracket, etc., whereby the gas is supplied. The gas is admitted to the burner through this pipe, it issuing from a number of lateral orifices *a* in the side of this pipe, its upper end being closed by a stem C. The gas from these orifices enters a mixing chamber D, formed by an inclosure *d*, the lower part of which is fitted closely around pipe A and provided with a collar 7, whereby it is rigidly connected to said pipe. A horizontal row of air inlets 8 is provided in the lower part of this inclosure through which air enters and may mix with the gas therein.

The mixture of gas and air discharges through a narrow annular slot 9 above which ignition and combustion proceed, said slot being formed between the upper edge of the inwardly turned wall *d* of inclosure D and the side of a regulating nut *c* mounted upon the threaded stem C. By moving this nut up or down on stem C, the size (width) of the discharge slot may be regulated to

adjust the size of the flame. For its manipulation a knurled extension 10 is provided on the upper side of this nut. In order to bring about a more intimate commingling of gas and air, immediate upward rush of the gas is prevented by a deflector E, whereby the gas is first directed down into the lower part of chamber D and into the way of the incoming air. This deflector is hung upon the upper edge of pipe A. The air influx may be regulated by an annular slide F closely fitted around the outside of chamber D and supported so as to be free to be shifted about the outside of the wall thereof. For such purpose it is supported upon a collar 11 provided on pipe A. An annular row of openings *f* is provided in this slide, arranged vertically at even height with openings 8 and similarly sized and spaced. Fig. 1, illustrates the manner of regulation which is by moving slide F about wall *d* whereby passage through openings 8 is adjusted and controlled.

The quantity of the gas admitted to the chamber may be readily controlled by the cock which controls the passage of the gas through the fixture or branch-pipe upon which burner-stem A is mounted. Such control may also be had by a cock provided in said stem.

G is a customary mantle which may be supported by any of the usual means available as for instance by a post *g*.

H is a chimney resting on arms *h* secured in any suitable manner.

Having described my invention, I claim as new:

1. In a burner, the combination of a burner-stem provided with a mixing-chamber around it and with discharge orifices which communicate with the upper part of the chamber, which latter is also provided with a discharge outlet in its upper end and with air-inlet-openings in its lower part and a deflector whereby the gas which discharges from the orifices mentioned is directed within the mixing chamber to the air-inlet-openings therein.

2. In a burner, the combination of a

burner-pipe having lateral gas-outlets, a  
screw-threaded stem whereby it is closed  
above these outlets, said stem projecting also  
above the upper end of the pipe, a mixing-  
5 chamber open at its upper end supported  
upon the burner-pipe and provided with air-  
inlets and a regulating nut mounted upon  
the stem mentioned and within the opening

in the end of the mixing-chamber, the size  
of which opening it controls.

In testimony whereof, I hereunto affix my  
signature in the presence of two witnesses. 10

CHARLES HOFF.

Witnesses:

C. SPENGEL,  
T. LE BEAU.