(No Model.)

W. F. FOLMER.

GAS BURNER.

No. 419,651. Patented Jan. 21, 1890.

Fig 1

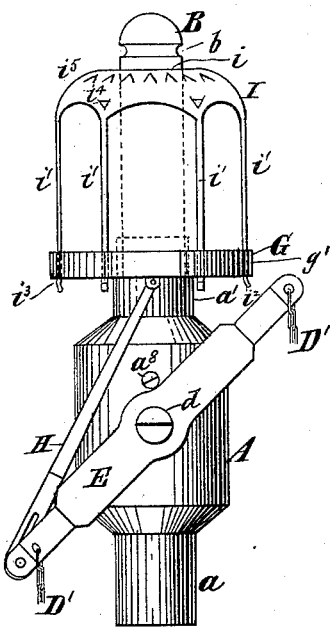


Fig 2

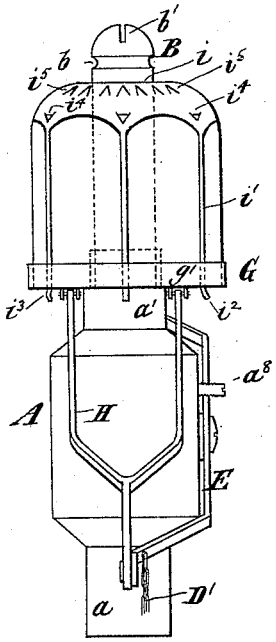


Fig 3

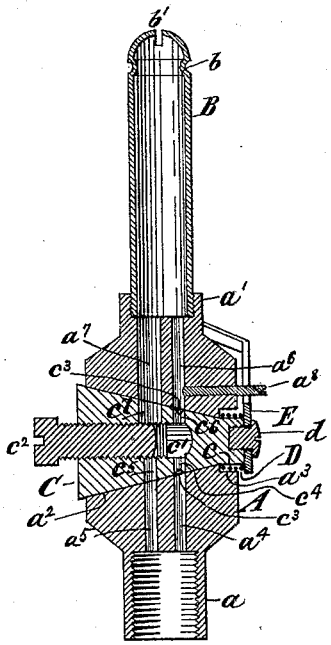


Fig. 4

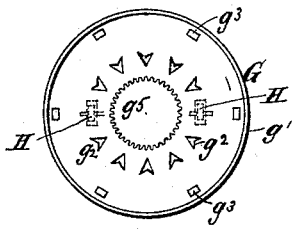


Fig. 6.

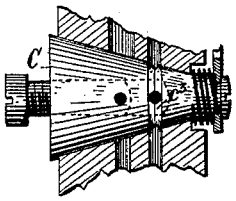
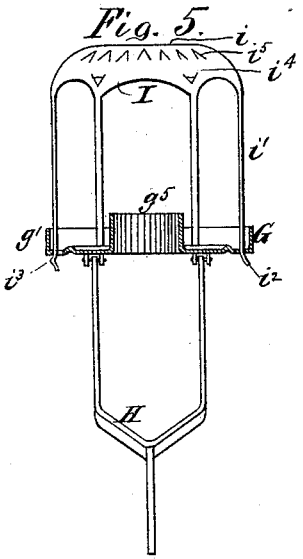


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM F. FOLMER, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO WALTER E. SCHWING, OF SAME PLACE.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 419,651, dated January 21, 1890.

Application filed March 23, 1889. Serial No. 304,436. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. FOLMER, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Gas-Burners, of which the following is a specification.

I will describe a gas-burner embodying my improvement, and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is a side view of a gas-burner embodying my improvement. Fig. 2 is another side view taken from a position at right angles to the side view, Fig. 1. Fig. 3 is a central vertical section of the gas-burner. Fig. 4 is a plan or top view of a holder for a globe comprised in the gas-burner. Fig. 5 is a vertical section of the globe and globe-holder. Fig. 6 is a detail, partly in section, showing a circumferential groove in the plug.

Similar letters of reference designate corresponding parts in all the figures.

A designates the body of the burner. It may be of cast metal and of the usual or any other suitable shape. At the lower end it is provided, as usual, with an internally-screw-threaded socket a, suitable for engaging with the nipple of a gas-fixture. At the upper end there is an internally-screw-threaded socket a', in which a pillar or tip piece B may be secured.

C designates a tapering plug fitting in a tapering cavity a^2, that extends transversely through the body A. At the smaller end of this plug there is a cylindric portion c. This extends within a cylindric cavity a^3, which is formed in the body A. A spring D (here shown as of helical form) fits within the cavity a^3. At the extremity of the smaller end of the plug C a lever E is secured. The spring D bears at one end against the back of the cavity a^3 and at the other end against the opposite side of the lever. It therefore tends to force the lever away from the body A to draw the tapering plug C into the tapering cavity a^2 of the body A. Thus it will tend to secure a tight fit of the plug in the body and obviate leakage. The lever E may be secured to the plug in any suitable manner. For instance, it may be fitted upon a polygonal base provided on the small end of the plug, so as to interlock with the plug, and it may be secured in engagement with said base by means of a screw d, passing through a hole in the lever and entering a tapped hole in the plug. It will be observed that the lever is not straight from end to end, but that on each side of its middle portion it is bent rearwardly at an angle, and then again bent parallel to the main portion. This is advantageous for the proper coaction of the lever with other parts. The end portions of the lever are shown as provided with pendent chains D'. These facilitate the oscillation of the lever to effect the turning of the plug.

It will be seen that the body A has beneath the cavity a^2 two independent vertical ducts or gasways a^4 a^5. These may be of the same size. They extend from the socket a to the cavity a^2. The upper part of the body A, it will be noticed, is provided with two vertical ducts or gasways a^6 a^7. One of these a^6 is of small diameter, and may be of the same diameter as the duct a^4. It is in line with the duct a^4. The other duct a^7, which is in the upper part of the body A, is of considerably larger diameter. It is shown as arranged opposite the duct a^5.

The plug C is provided with a longitudinal cavity c' of suitable size. It also has two transverse ducts c^4 c^5, which are shown as of the same size as the ducts a^4 a^5 in the body A, and are arranged opposite to the same, so that when the plug is suitably turned they may be in line with said ducts a^4 a^5, and then will receive gas therefrom. The plug is also provided with two other transverse ducts c^6 c^7. The duct c^6 is in line with the duct c^4, and communicates therewith through the cavity c'. The duct c^6 will communicate with the duct a^6 of the body when the plug is properly turned, and when this happens the duct a^4 will be in communication with the duct a^6. The duct c^7 of the plug is opposite the duct a^7 of the body, and is shown as of the same size as this duct a^7. It is opposite the duct c^5 of the plug. Gas may pass from the duct c^5 into the cavity c' and into the duct c^7. From the duct c^7 it may flow into the duct a^7. Gas will flow from the ducts a^6 a^7 into the pillar and thence to the tip.

That portion of the cavity c' which is in

the larger end of the plug C is internally screw-threaded and has fitted in it a regulating-screw c^2. The end of this screw may extend beyond the duct c^5, if the screw be properly adjusted, and then it will stop the flow of gas through the ducts a^5 c^5 into the cavity c', while yet leaving the duct c^7 free to take gas from the cavity c'. The screw may be moved far enough into the cavity c' to obstruct the duct c^7 more or less. By obstructing this duct c^7 more or less it will regulate the amount of gas flowing to the pillar and tip. It may be adjusted to close the duct c^7.

The plug C has a circumferential groove c^3 in the same plane as the ducts c^4 c^6. Owing to this, gas will be supplied to the pillar and tip even when the plug is so turned as to adjust the ducts c^4 c^6 out of line with the ducts a^4 a^6 and the ducts c^5 c^7 out of line with the ducts a^5 a^7, for gas may, even after this adjustment of the ducts c^4 c^6 c^5 c^7, flow from the duct a^4 around the circumferential groove c^3, and thence into the duct a^6. When the gas flows in the manner last described, the quantity will be small and suitable only for a night-light or a flame which can be burned constantly.

a^8 is a regulating-screw for the duct a^6, fitting in a transverse cavity in the body A and extending into the duct a^6. By adjusting it to more or less obstruct this duct the amount of gas passing through the latter can be regulated.

The pillar and tip are made in one piece of sheet metal. This effects an economy. Ordinarily sheet metal is drawn up to form the pillar and the closed end is cut out and then thrown away to afford an opening for the reception of the tip ordinarily used. Here the closed end is properly shaped to form a tip, the metal adjacent to it is drawn inwardly to form an inwardly-projecting bead b, and a slit b' is made.

It will be seen that the main duct or gasway a^7 will be supplied with gas by the two ducts or gasways a^4 a^5 and the cavity c'.

G designates a globe-holder. It is shown as consisting of a circular disk of metal having the edge g' upturned to form a flange and an upwardly-extending bead formed in it near the edge. At the center it has an upturned corrugated cylinder g^5 for fitting upon the pillar B. This will slide easily upon the pillar and at the same time allow of finely-divided currents of air passing up around the pillar. I have shown the disk as having a number of V-shaped slits g^2 made in it. The metal within these slits is upturned slightly, forming tongues, so as to allow of the passage of air at the sides of the upturned metal, and yet prevent air from rushing violently through. The bottom of the disk is provided with loops or eyes with which are pivotally connected bifurcated arms on the extremity of a link H, which at the other extremity is connected pivotally to one arm of the lever E. The extremity of the link which is connected to the lever is longitudinally slotted for a distance, so that the lever may move a short distance without raising or lowering the globe-holder.

The globe I is made out of a dome-shaped piece of sheet metal having a central opening i at the apex and a number of strips or uprights i' extending downwardly from the same and serving to support it. The extremities of these strips i' fit in slots g^3 arranged in the edge of the globe-holder. One of the strips i' is bent to form a rearwardly-extended hook i^2. This will first be inserted in the slot g^3 of the globe-holder. The opposite strip i' is provided with a projection i^3. When the globe is rocked downwardly after the engagement of the hook i^2 with the globe-holder, the opposite strip will pass into its slot in the globe-holder until the projection i^3 has passed beyond it, whereupon it will fasten it to the globe. The sides of the globe are fitted with a cylinder of glass or mica. This may be secured at the upper edge by forming V-shaped slits i^4 in the globe, pressing inwardly the metal within these slits to form prongs or clips and then bending these prongs or clips tightly against the glass or mica. I have shown in the upper part of the globe a number of V-shaped slips i^5. The metal within these slits will be bent slightly outward to permit of the passage of air.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a gas-burner, the combination of a body, a plug arranged transversely in the body, a main gas-duct in the body above the plug, two independent gas-ducts in the body below the plug and extending from the socket, two ducts in the plug corresponding to the two ducts which are arranged in the body below the plug, a duct in the plug corresponding to the main gas-duct which is arranged in the duct above the plug, and a cavity extending lengthwise of the plug and establishing communication between the three said ducts of the plug, so that the duct above the plug will receive its supply of gas from the two ducts below the plug, substantially as specified.

2. In a gas-burner, the combination of a body, a plug arranged transversely in the body, a main gas-duct, as a^7, in the body above the plug, two gas-ducts, as a^4 a^5, in the body below the plug, two ducts, as c^4 c^5, in the plug corresponding to the two ducts which are arranged in the body below the plug, and a duct, as c^7, in the plug corresponding to the main gas-duct which is arranged in the duct above the plug, a cavity, as c', extending lengthwise of the plug and establishing communication between the three said ducts of the plug, and a regulating-screw projecting into the cavity that extends lengthwise in the plug and serving to obstruct more or less that duct which corresponds to the main gas-duct, substantially as specified.

3. In a gas-burner, the combination of a

body, a plug fitted transversely in the body, ducts a^4 a^5 a^6 a^7 in the body, ducts c^4 c^5 c^6 c^7 in the plug, a cavity c' in the plug, a regulating-screw c^2, and a regulating-screw a^8, substantially as specified.

4. In a gas-burner, the combination, with a body and a plug fitted transversely in the body, of ducts a^4 a^5 a^6 a^7 in the body, ducts c^4 c^5 c^6 c^7 in the plug, a cavity c' in the plug, a circumferential groove c^3 in the plug in the same plane as the ducts c^4 c^6, and a regulating-screw c^2, substantially as specified.

5. In a gas-burner, the combination, with a body and a plug fitted transversely in the body, of ducts a^4 a^5 a^6 a^7 in the body, ducts c^4 c^5 c^6 c^7 in the plug, a cavity c' in the plug, a circumferential groove c^3 in the plug in the same plane as the ducts c^4 c^6, a regulating-screw c^2, and a regulating-screw a^8, substantially as specified.

6. The combination, with a gas-burner, of an oscillating lever supported thereby, a globe-holder sliding upon a pillar, a bifurcated link connected at one end to the lever and having its bifurcated arms pivotally connected to the diametrically-opposite points of the globe-holder, substantially as specified.

7. The combination, with a gas-burner, of a globe-holder consisting of a plate having a cylinder provided with corrugations extending transversely to the axis of the cylinder and fitting the pillar of the gas-burner, substantially as specified.

8. The combination, with a burner, of an air-distributer plate, V-shaped slits and the metal within the slits deflected, forming tongues allowing passage of air at the sides, substantially as specified.

9. The combination, with a globe-holder, of a globe consisting of sheet metal having openings fitted with glass or mica, said glass or mica being held in place by prongs in the globe, and the said globe having strips extended through slots, thereby being detachably engaged with the globe-holder, substantially as specified.

WILLIAM F. FOLMER.

Witnesses:
E. H. PILSBURY,
C. R. FERGUSON.