J. D. WEST & W. H. DARBY.

GAS-BURNERS.

No. 194,631. Patented Aug. 28, 1877.

Fig. 1

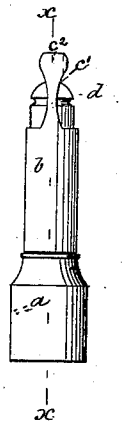
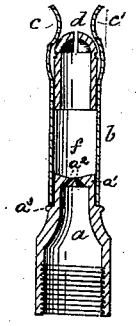


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOSEPH D. WEST, OF EAST ORANGE, NEW JERSEY, AND WILLIAM H. DARBY, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN GAS-BURNERS.

Specification forming part of Letters Patent No. **194,631**, dated August 28, 1877; application filed November 21, 1876.

To all whom it may concern:

Be it known that we, JOSEPH D. WEST, of East Orange, in the county of Essex and State of New Jersey, and WILLIAM H. DARBY, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Gas-Burners; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation of our gas-burner; and Fig. 2 a central vertical section of the same.

Like letters denote corresponding parts in each figure.

The object of our invention is to produce a simple and cheap device for heating and expanding the gas to the desired degree before it passes from the tip of the burner, and at the same time to heat and feed atmospheric air to the center of the flame, and assist in more thoroughly mingling the said air with the unconsumed carbon, thereby insuring a more perfect combustion of the gas, producing a brighter light and a great saving in the amount consumed.

Our invention therein consists in the construction and arrangement of the parts composing our improved burner to effect the above purpose, as fully hereinafter set forth.

In the annexed drawings, the base *a* of the burner has the ordinary internal screw-thread, by which it is attached to the ends of the gas-pipe in the usual manner. The upper end of the base is contracted in size to form a cap, a^1, in which are made two oblique holes, a^2, similar to the apertures in the tip of a "fish-tail" burner. The shell *b* of the burner is a tube, fitted over the cap a^1 of the base, and resting upon a shoulder, a^3. This shell is either attached by screw-threads to the cap, or is sprung over the same. Ears c c^1 project up from the top of the shell, being formed in one piece therewith. These ears are made quite narrow, and bent inwardly close over the tip, with their upper ends c^2 bent slightly outward, and enlarged, as shown. The tip *d* employed is a lava tip; but any other kind may be used without affecting the operation of the other parts of the burner.

When our burner is in use, the gas passes with full pressure up through the base *a* till it arrives at the cap a^1 of the same. Here the gas is somewhat retarded, and forces its way into the chamber *f* formed by the shell *b*, through the oblique or fish-tail openings a^2, which throw the gas against the walls of the shell, bringing it into intimate contact with the same. It then rises to the tip *d* and is consumed. The ears c c^1, being almost in contact with the dark center of the flame, become highly heated, and conduct such heat to the shell *b*, which heats and expands to the desired degree the gas in the chamber *f*. These ears, by being narrow, and situated opposite the dark center of the flame, do not throw any shadow, or obstruct in the least the light or the passage of the air to the flame. On the contrary, by being so constructed, they assist to draw the atmospheric air to the center of the flame, where it is most needed, and heat the air so that a more perfect combustion and a brighter light are obtained.

By heating and expanding the gas in the shell of the burner to a certain degree the same will combine more perfectly with the oxygen of the air, and a great saving in the amount of gas consumed will be the result.

The advantages of the means we employ to effect this result lie principally in their simplicity and cheapness, and in their efficiency in operation.

Having thus fully described our gas-burner, what we claim as new therein, and desire to secure by Letters Patent, is—

The gas-burner described, consisting of the base *a*, having a cap, a^1, provided with the oblique openings a^2, the shell *b*, ears c c', and tip *d*, constructed and arranged substantially as shown and set forth.

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