W. F. SHAW.

Gas Burner.

No. 14,737. Patented April 22, 1856.

Fig. 2

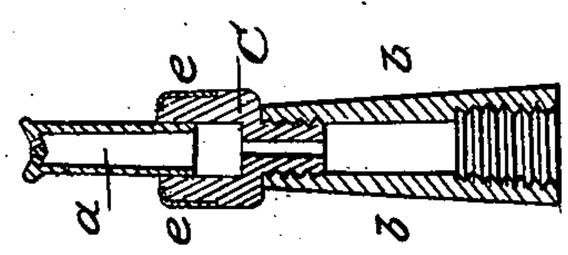
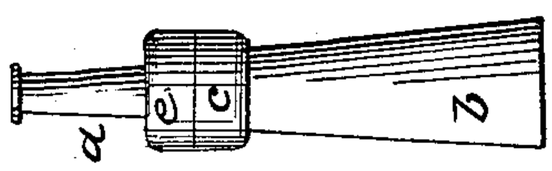


Fig. 1



UNITED STATES PATENT OFFICE.

W. F. SHAW, OF BOSTON, MASSACHUSETTS.

GAS-BURNER.

Specification of Letters Patent No. 14,737, dated April 22, 1856.

To all whom it may concern:

Be it known that I, WM. F. SHAW, of Boston, county of Suffolk, and State of Massachusetts, have invented a new and Improved Mode of Constructing Gas-Burners; and I do hereby declare that the following is a full and exact description thereof, reference being had to the drawings which accompanying this application, of which—

Figure 1, is a side view, and Fig. 2, a vertical central section through the burner.

The nature of my invention consists in isolating the tip of a burner, where the gas is consumed, so that the heat of combustion may be retained at the tip and then concentrated to aid in effecting the entire combination of all the gases, with atmospheric oxygen, and to prevent undue heating of the metallic branches, or tubes, to which the burner is attached. This object is attained by the simple interposition of a non-conducting, or imperfectly conducting material, having the form adapting into the burners in use, or to any more simple pattern.

Considering an ordinary fish-tail burner while gas is being consumed, we see a thin column of gas entering a highly heated metal cone on its passage to the tip, where it is lighted. Both experience and the known properties of rich illuminating gas, prove that the gas becomes partially decomposed, the olefiant gas and vapors of hydrocarbons, being converted into light carbureted hydrogen, burning with a diminished amount of light and porous carbon, which being deposited obstructs the passages, and calls for cleaning or repairing of the burner. By having the extremity, or tip of the burner of metal and the cone of non-conducting matter, or by interposing non-conducting sheaths between the tip and the cone or body of the burner we are enabled to burn the gas without decomposition thereby obtaining all the light it can afford and the tip remains free from any deposition.

To enable those skilled in the manufacture, to make my improved burner, it is necessary to bear in mind that whatever form of burner is chosen, the tip is the part containing the holes, or slit. In the Argand burner, this is a portion of the concentric tubes about half an inch long; in the fish-tail, bat-wing and similar burners a portion of about equal length. These tips are turned conical to fit with some friction into ferrules, or some mechanical substitute, of imperfectly conducting matter, and this ferrule is secured to the lower part of the burner if of metal or the whole burner is formed of imperfectly conducting material, excepting the tip which fits into it.

In the drawings *a*, represents the tip, and *b* the base of the burner.

c is the non-conducting material placed between them. The piece *c* may have a ferrule *e* upon it, if made of material liable to crack or fracture, and the tip *a* may be jammed, or screwed, or otherwise fastened into it. The part *c*, may in like manner be jammed or screwed, or in any other manner fastened to the base *b*, so that the three pieces shall form a burner, with a non-conducting, or bad conducting material interposed between the tip and base.

I use well dried ivory as a material to isolate tips of small burners, or pumice stone power rendered solid by soluble glass. For larger forms porous soapstone turned to dimensions, or clay biscuit ware.

What I claim and wish to secure by Letters Patent is,

The interposition of an imperfectly conducting body, between the tip and base of gas burners, for the purpose of preventing the conduction of heat away from the point where the gas is burned.

W. F. SHAW.

Witnesses:
M. S. PARKER,
M. FREEMAN, Jr.