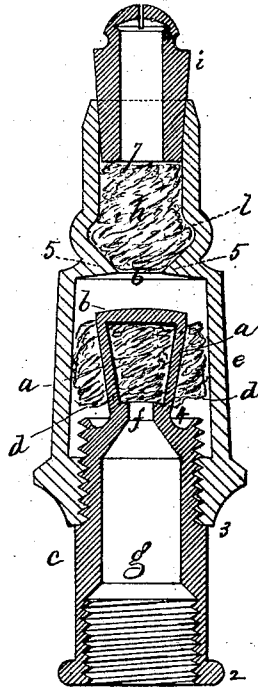


W. F. BONNELL, Jr.

GAS-BURNER.

No. 178,262.

Patented June 6, 1876.



Witnesses.

L. H. Latimer.

W. J. Pratt.

Inventor

William F. Bonnell Jr.

per Henry Ingersoll atty

UNITED STATES PATENT OFFICE.

WILLIAM F. BONNELL, JR., OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND S. B. KIDDER, OF SAME PLACE.

IMPROVEMENT IN GAS-BURNERS.

Specification forming part of Letters Patent No. **178,262**, dated June 6, 1876; application filed May 5, 1876.

To all whom it may concern:

Be it known that I, WILLIAM F. BONNELL, Jr., of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Gas-Burner, of which the following is a specification:

This improvement relates to gas-burners, and has for its object to produce a burner which shall give a steady light, and which shall not easily become foul by the action of the gas.

The invention consists in a gas-burner provided with a cage, as hereinafter described, to receive and retain wool or suitable fibrous packing, and combined with a shell having a chamber for the reception of wool or fibrous packing, substantially as described.

The drawing shows one of my burners in section.

The base *c* and the burner-shell *e* are the same as the base and burner-shell in my other application, filed concurrently with this, and the plate of the globe-holder and the socket-piece of the shade-holder are held in position between the base-flange 2 and the shoulder 3 at the base of the shell. At the top of the base I provide a cage, consisting of two or more standards, *a*, and a top disk, *b*, forming a chamber, into which I place a quantity of preferably very fine soft wool, *d*, it projecting outside the cage and meeting the interior of the burner-shell *e*, and at 4 I provide a cup to contain any impurities arising from condensation or drip of gas.

The interior of the burner-shell is provided with an annular projection, 5, above which is a chamber, in which is placed preferably very fine wool, *h*, it being confined in the chamber by the annular projection and the base of the ordinary tip *i*. The opening 6 through the annular projection corresponds in size with the opening 7 in the tip. The gas enters the chamber *g* at the base of the burner, and then passes through the opening *f* into the wool in the cage, the gas being filtered and depositing its impurities on its passage through the wool, and it is then delivered into the

chamber *k*, where it is maintained at a steady pressure, and from this chamber the gas passes to chamber *l*, and out at the tip. In passing through the fine-wool packing *h*, the gas, according to its pressure, compacts the wool more or less, causing it to serve the purposes of a governor to regulate or check the gas and prevent the burner from blowing, and causing the gas to burn with a steady flame. The force of the gas, acting on the wool *h*, compresses it more at the center of the chamber, in line with the openings 6 7, than at the sides. The flow of gas is greatly broken by the impingement of the jet against the wool and disk *b*. The waste product, or the drip that usually accumulates in a burner, and which serves to clog it and prevent the gas from flowing freely, is caught by the wool, and the drippings are deposited in the cup 4, and prevented from running down between the base and shell. I find that very fine wool is much more effectual as a governor than is coarse wool. Ordinary gas-burners provided with small orifices, through which gas flows, quickly become gummed and foul, and cease to give the proper amount of light.

In my burner the openings, except in the tip, are all large, and I check the flow of the gas by the wool packing, and this, when soiled or gummed by long use, may be taken out and washed.

I claim—

The base and cage *a b*, and the shell provided with an annular projection and upper chamber, in combination with the packing *d h*, arranged in the cage and chamber, and adapted to check and regulate the flow of gas issuing from the tip, substantially as described.

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

WM. FRANKLIN BONNELL, JR.

Witnesses:

G. W. GREGORY,
S. B. KIDDER.