W. GARLAND.

Gas-Burner.

No. 163,007. Patented May 11, 1875.

Fig. 1.

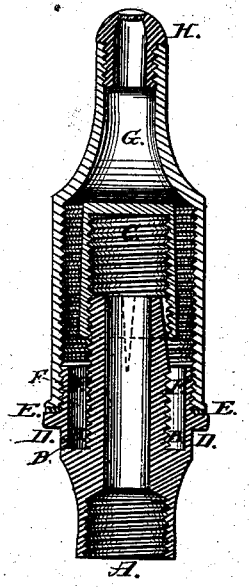

Fig. 2.

Witnesses:

Lemuel P. Jenks.

Jerome Davis

Inventor:

William Garland

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

WILLIAM GARLAND, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO CHARLES ALBERT SHAW, OF SAME PLACE.

IMPROVEMENT IN GAS-BURNERS.

Specification forming part of Letters Patent No. **163,007**, dated May 11, 1875; application filed March 10, 1875.

To all whom it may concern:

Be it known that I, WILLIAM GARLAND, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Graduating Gas-Burner, of which the following is a specification:

The nature of my invention is that of a gas-burner, furnished with an outer cap, inside of which is a smaller cap, concentrically disposed, and covering an upward-projecting continuation of the pipe conveying the gas. This pipe is furnished with a male screw, and one or more slots on the outer surface, and on the screw is fitted the smaller inner cap, screwing up and down; and the object is to graduate, at will, the flow of the stream of gas, and thus the size of the flame.

Figure 1 is a vertical cross-section of my device. Fig. 2 is a top view of a portion of the same, as hereinafter more fully explained.

All of my device, except the tip, is of metal, preferably brass.

A is the lower portion of my graduating gas-burner, being a tube, screwing on, by the female screw seen in the inside of the lower portion, to the gas-pipe in the usual manner. At its center, at the points marked B B, this tube is joined to a smaller tube, concentric with the first tube, called the slot-tube, which tube carries a male screw on its outer surface, onto which screws C, the inner cap. This is a tube with its upper end closed, and its lower end open. This slot-tube is so called because it carries at its sides three slots placed equidistantly, in the shape of a cone reversed in side view, (see dashed lines,) being wider and deeper at the top of the slot than elsewhere, and diminishing to a point at the lower end of the slot. Fig. 2 shows these slots from above of the upper end of the slot-tube B B.

I do not confine myself to any number of slots, but use one or more, preferably three.

At the point D D of the lower portion A A of my device are seen, in vertical section, two portions of a horizontal flange, which bear a washer, E E, (sometimes dispensed with,) down upon which, on the male screw F F, formed on a tube proceeding upward from the portion A A, (concentrically disposed as to the slot-tube B B, and surrounding it,) screws the outer cap G G, of shape as seen in the drawing, (or any other convenient shape,) which cap bears at its top the tip H, formed of lava, metal, or other appropriate substance.

To use my device, if the full stream of gas and largest flame are desired, the outer cap G G is removed, and the inner cap C is screwed up as far as it will go, and remain attached to the tube B B, which bears it. The outer cup being then replaced, the gas is then let on, and being lighted, the flame is found to be as large as the bore of the burner (and the gasometer pressure) will allow. When a smaller flame is desired, the inner cap C is screwed down as far as wished, each thread of the male screw on the tube B B which is passed diminishing the size of the stream of gas emitted, and thus, when the outer cap is replaced and the gas lighted, the size of the flame.

I sometimes make my cap C thicker than shown in the drawing, and making one or more perforations longitudinally in the body of the tube of the cap, place on the top of the same my burning tip, the gas passing to the tip through a chamber at the top of the cap, in which case I dispense with my outer cap G G.

I do not claim any device of a removable cap, held by a nut, which screws down upon a perforated pipe, but

I claim—

In a gas-burner, the slotted tube B B, inner cap C, outer cap or casing G G, and tip H, combined to operate substantially as and for the purpose specified.

WILLIAM GARLAND.

Witnesses:

LEMUEL P. JENKS,

JEROME DAVIS.