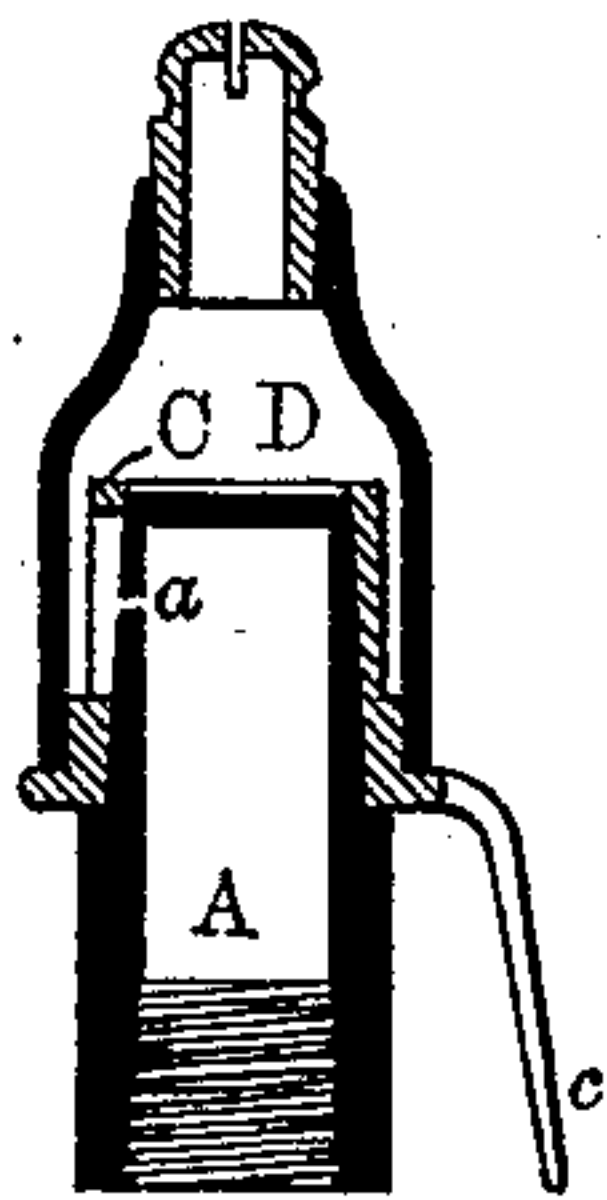


W. G. PUGH.  
Gas-Burners.

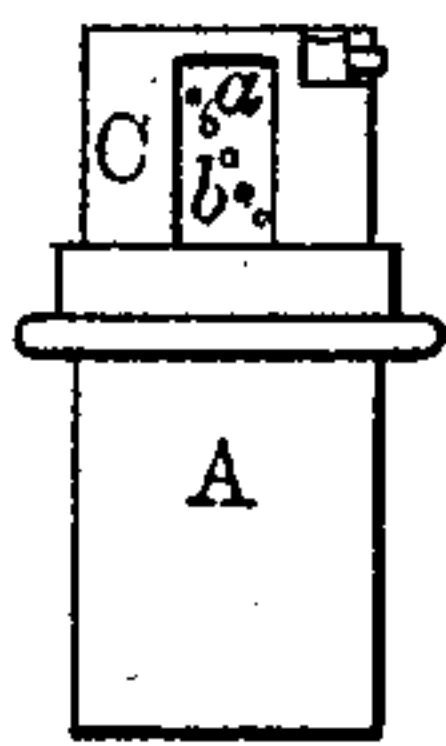
No. 196,931.

Patented Nov. 6, 1877.

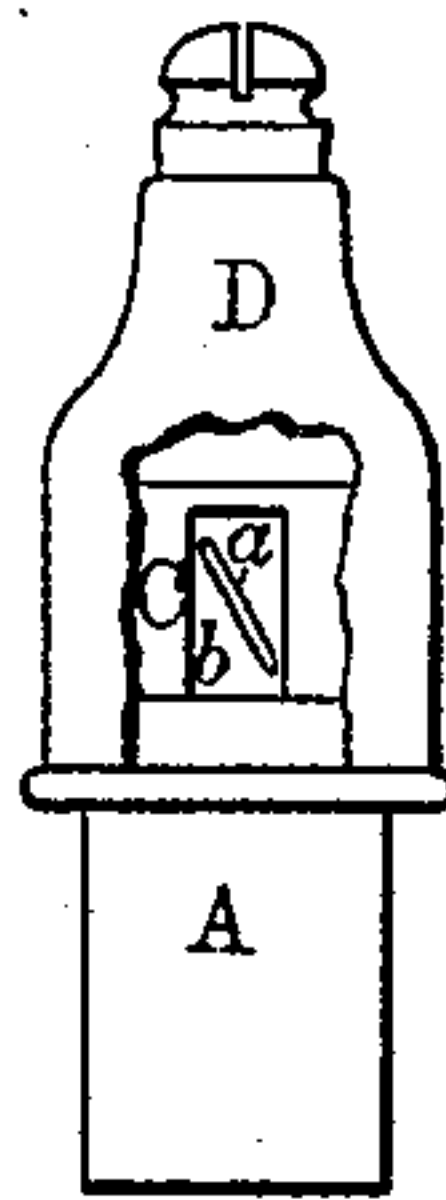
—FIG. I—



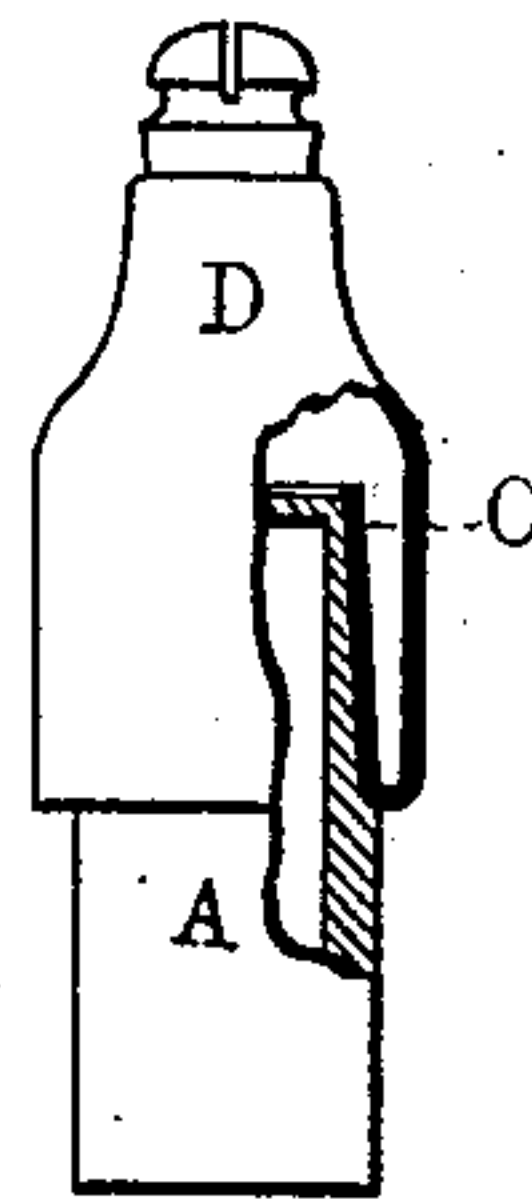
—FIG. II—



—FIG. III—



—FIG. IV—



—WITNESSES—

*Wm. H. Towner*  
*Frank M. Burnham*

—INVENTOR—

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*by J. W. Smith*

# UNITED STATES PATENT OFFICE.

WILLIAM G. PUGH, OF BALTIMORE, MARYLAND.

## IMPROVEMENT IN GAS-BURNERS.

Specification forming part of Letters Patent No. **196,931**, dated November 6, 1877; application filed October 10, 1877.

*To all whom it may concern:*

Be it known that I, WILLIAM G. PUGH, of the city of Baltimore and State of Maryland, have invented certain Improvements in Gas-Burners, of which the following is specification; and I do hereby declare that in the same is contained a full, clear, and exact description of my said invention, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

This invention relates to certain improvements in that class of gas-burners wherein the gas is allowed to expand or increase in volume before issuing from the aperture at the outer end of which combustion takes place; and consists in the novel construction and arrangement of the parts composing the burner, as hereinafter fully described.

In the drawing, forming a part of this specification, Figure I is a vertical section of the improved burner. Fig. II is an exterior view of the same, with the expansion-chamber removed. Figs. III and IV are partly sectional views of the burner, illustrating certain modifications in the construction of the same.

Similar letters of reference indicate similar parts in all the views.

A is the hollow base of the burner, the interior of which forms the initial pressure-chamber, in direct communication with the supply-pipe. The upper part of the base A is slightly tapered, and provided with a series of perforations, *a*, in the side thereof, arranged in a diagonal line with reference to the center line of the burner. A diagonally-placed slot (shown in Fig. III of the drawing, and indicated by the letter *a*,) may, however, be substituted for the apertures *a*, if desired, without affecting the nature of the invention. The tapered portion of the base A is inclosed gas-tight by a sleeve, C, having a slot, *b*, therein of a width about equal to the circumferential space occupied by the apertures *a*. The said sleeve is susceptible of a limited circumferential movement around and upon the base A, corresponding in extent with the width of the slot *b*, and this movement is sufficient to effect the exposure or concealment of the apertures, as may be desired. A check or stop for the sleeve is preferably effected by recessing a portion of the upper edge of the sleeve, and inserting through the recess a pin, which is fastened to the base.

The expansion-chamber, hereinbefore al-

luded to, and which is represented in the drawing by D, is attached removably to the sleeve C, as shown in Figs. I, II, and III, or it may constitute a part of the same, as illustrated in Fig. IV. The chamber D is provided with the usual outlet for gas at the upper end thereof.

The means for communicating movement to the sleeve, for the purpose of opening and closing the apertures *a*, consists of an arm, *c*, extending either from the sleeve or expansion-chamber.

The apertures *a* may be of such size as to allow of the exit therefrom of one cubic foot of gas each per hour, in which case the number of apertures will represent the maximum capacity of the burner, or the extreme number of cubic feet of gas passing through it per hour. Any number of feet less than the maximum volume can, however, be consumed by adjusting the sleeve C.

It will be understood that as the flow of gas from the initial pressure-chamber or hollow base to the expansion-chamber may be entirely discontinued by the circumferential movement of the sleeve C, the stop-cock usually employed in connection with gas-burners is rendered unnecessary, and may therefore be dispensed with.

Having thus described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. A gas-burner consisting of the following elements in combination—that is to say: the base A, having diagonally-arranged apertures *a*, the sleeve C, adapted to have a limited circumferential movement, as described, and provided with the slot *b*, and the burner D, secured to or forming a part of the said sleeve, and constructed to be moved circumferentially therewith, substantially as and for the purpose specified.

2. The combination, with the slotted sleeve *b*, burner D, and perforated base A, of the arm *c*, for regulating or shutting off the supply of gas to the burner, substantially as shown and described.

In testimony whereof I have hereunto subscribed my name this 6th day of October, A. D. 1877.

WM. GEORGE PUGH.

Witnesses:

LOUIS T. CLUNET,  
WM. MONTGOMERY.