

(No Model.)

W. C. BOONE & W. A. WHITFIELD.

GAS BURNER.

No. 321,274.

Patented June 30, 1885.

Fig. 1.

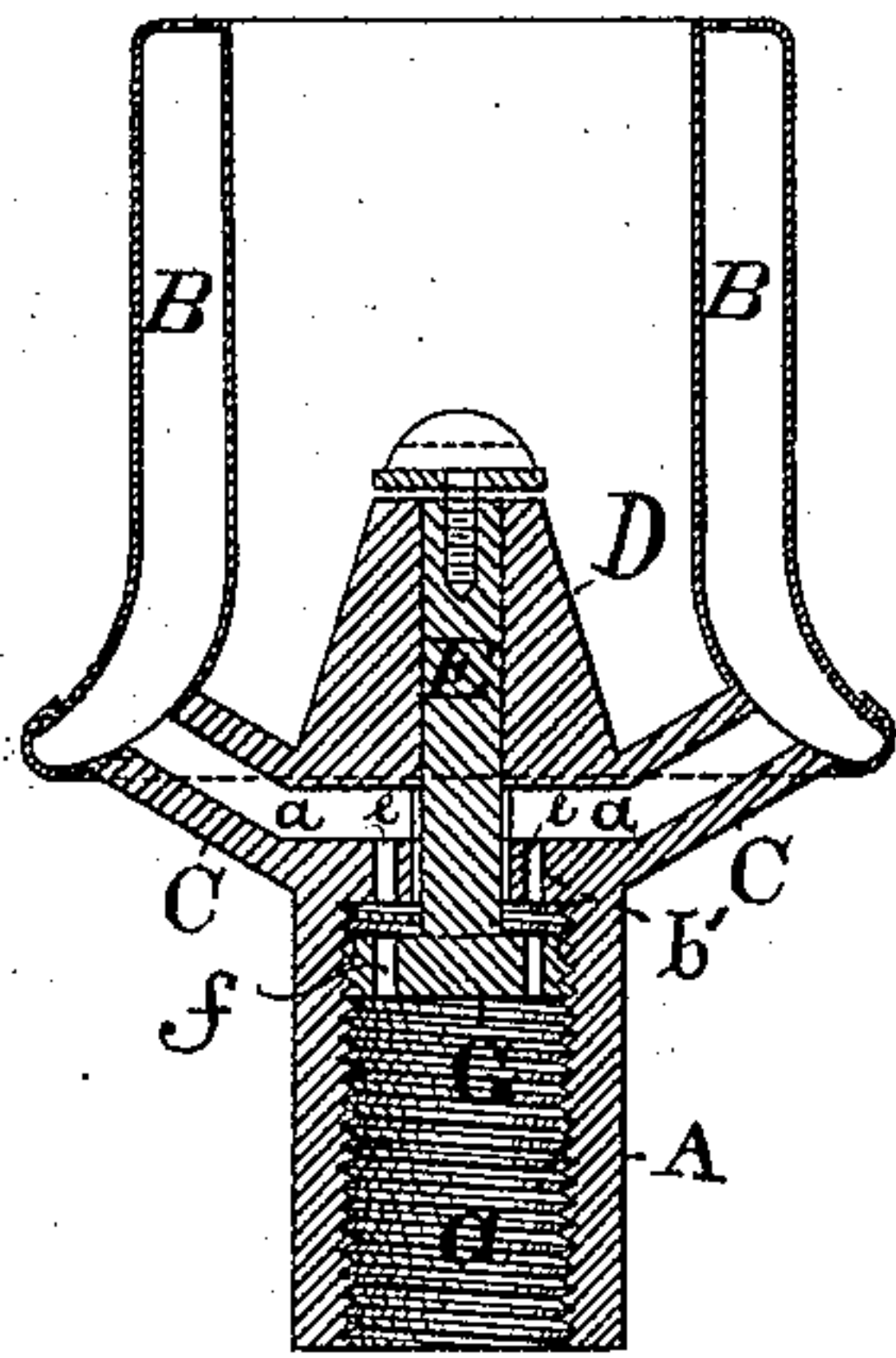


Fig. 2.

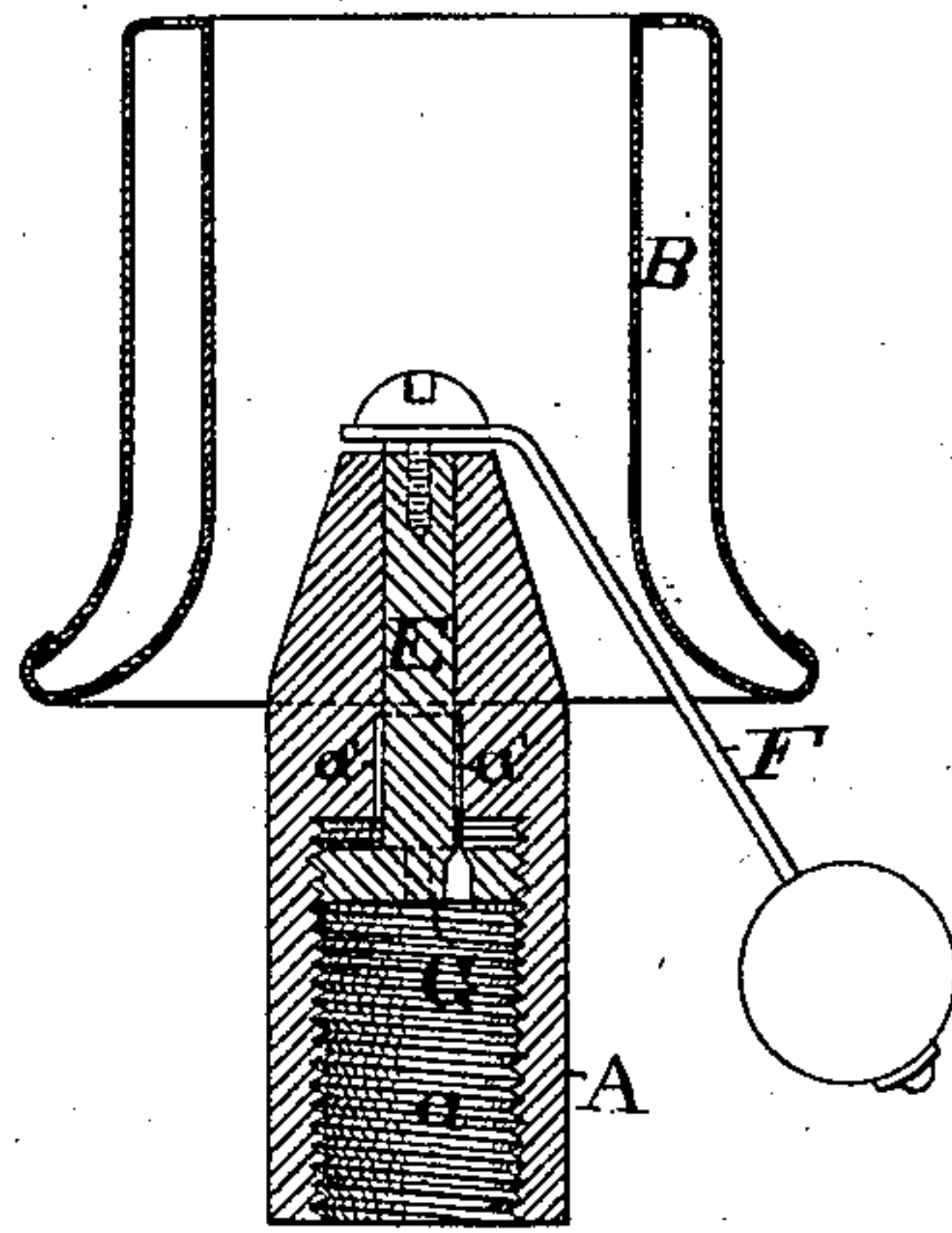


Fig. 3.

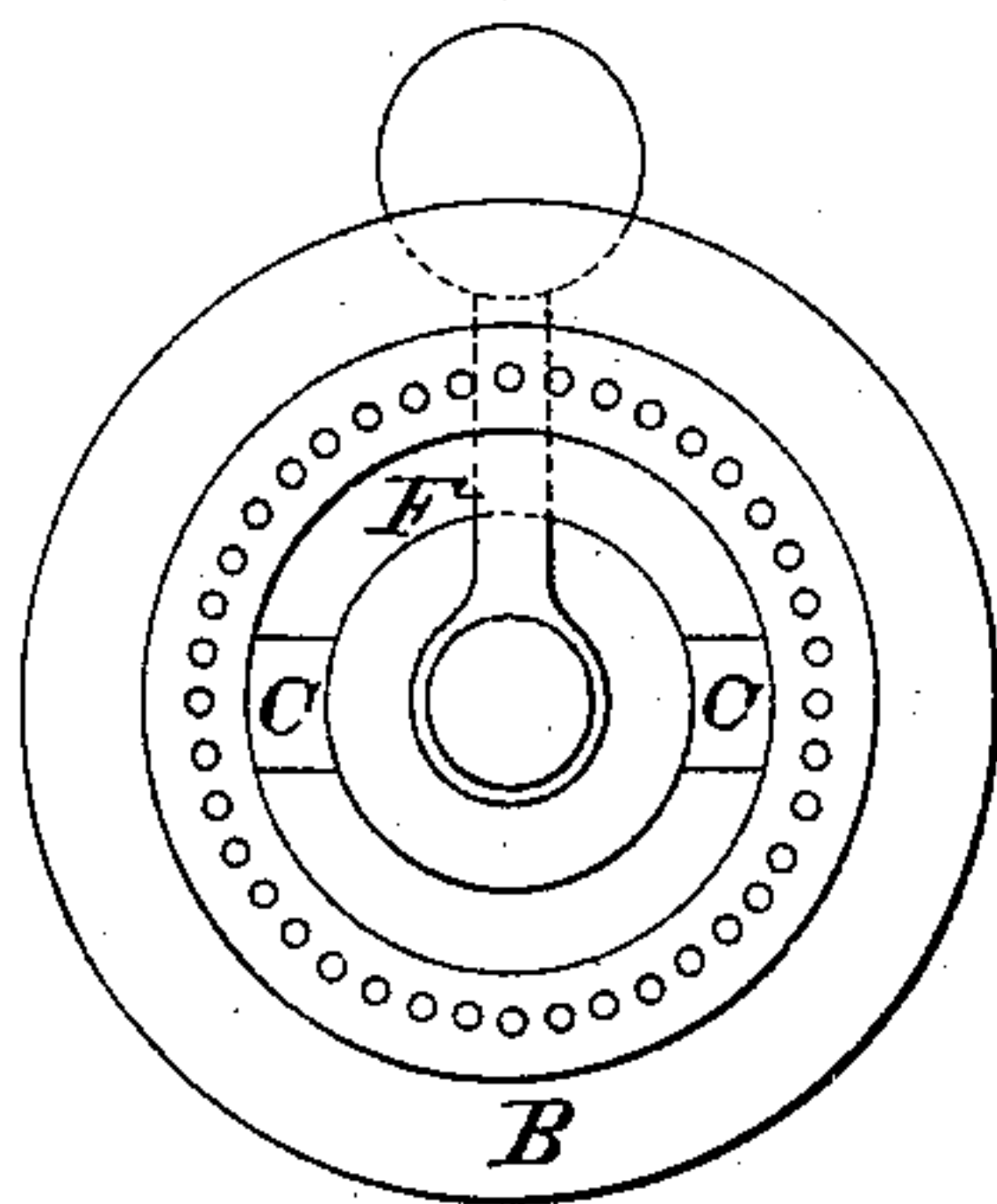


Fig. 4.

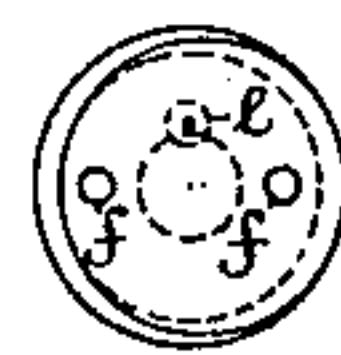


Fig. 5.



WITNESSES:

Gunnvald Aas.  
John H. Fisher

INVENTOR

William C. Boone and William A. Whitfield

BY

James A. Whitney

ATTORNEY



# UNITED STATES PATENT OFFICE.

WILLIAM C. BOONE AND WILLIAM A. WHITFIELD, OF BROOKLYN, N. Y.

## GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 321,274, dated June 30, 1885.

Application filed May 13, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM C. BOONE and WILLIAM A. WHITFIELD, both of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Gas-Burners, of which the following is a specification.

The object of this invention is to provide an improved gas-burner in which the flow of gas from the pipe to the burner may be readily and effectually regulated, and which may be free from the defect of "whistling," so termed, an objection frequently incident to gas-burners with which the flow of gas from the pipe to the burner is arbitrarily adjustable, a further object of our said invention being to provide a burner of simple and economical construction, and one which will be durable and not likely to get out of order under the conditions of long-continued use.

Figure 1 is a central vertical sectional view of a burner embracing our said invention. Fig. 2 is a similar view of the same, but taken in a plane at right angles to that of Fig. 1. Fig. 3 is a top or plan view of the same. Figs. 4 and 5 are detail views of one of the parts thereof.

A is the hollow base of the burner, internally screw-threaded, as shown at *a*, and by means of said screw-thread capable of being screwed upon the gas-pipe in the manner shown.

B is the annular body of the burner, of the usual or any suitable construction—such, for example as that commonly termed "Argand." This annular body B is connected with and supported upon the base A by the tubular arms C, by means of which the interior of the body B communicates with that of the base A, as hereinafter fully explained. The tubular passages of the arms C are, however, terminated at their inner ends, *a*, by the valve-stem. In the base *b'* are one or more openings, *e*, which, as hereinafter explained, co-operate with openings in the valve G in the operation of the burner. Above the parts *a* of the tubular passages of the arms is the boss D, through which and the base *b'* of the said parts *a* is a suitable bore or bearing which receives the valve-stem E, which is capable of an axial movement within certain limits in alternately opposite directions by means of the lever F.

The bore or bearing within the boss fits the valve-stem with sufficient snugness to insure its retention in position and the requisite stability in its movements, and at the same time prevent any escape of gas upward around the valve-stem. The bore or bearing in the base *b'* of the parts *a* of the tubular passages of the arms is enlarged in whole or in part so as to provide one or more passages, *a'*, from the interior of the body B to the chamber *a*, the purpose of which is hereinafter explained.

The valve G upon the lower end of the valve-stem E, as aforesaid, has a screw-thread, *e*, upon its circumference, which said screw-thread *e* screws into the thread *a* of the base A. It will be seen that this thread *a* serves a triple purpose—that of controlling or effectuating the vertical movement of the valve G consequent upon the axial movement of the valve-stem; that of giving circumferential support to the valve, and thereby aiding the bore in the boss in retaining the valve-stem in position, and enabling the burner to be readily attached to the gas-pipe.

Extending vertically through the valve G are one or more openings, *f*, so arranged that when the valve is screwed downward they will operate in conjunction with the openings *e* in the bottom of the parts *a* of the tubular passages of the arms C to establish communication between the interior of the base A and that of the body B. When the valve is screwed upward to its limit against the adjacent surface or valve-seat *g*, the said openings will be closed by the said seat or surface.

At *e* in Figs. 4 and 5 is shown the minute orifice designed to communicate at all times with a passage, *a'*, to maintain a low flame even when the valve is raised or closed to its limit, the total shutting off of the gas from the body B being effected by turning the usual gas-cock, as is done with an ordinary Argand burner. By axially turning the valve-stem as hereinbefore explained the valve is raised or lowered, as required, to regulate the quantity of gas passed in any given time to the body B.

It is found by actual trial that a gas-burner constructed as hereinbefore set forth and described is much less liable to whistle under changed conditions of volume and pressure of gas passed through it than is the case with

many varieties of Argand gas burners heretofore produced.

What we claim as our invention is—

The combination of the circumferentially screw-threaded valve G, the axially-movable valve-stem E, the internally-screw-threaded base A, body B, and lever F, the valve being screwed into the thread of the socket, and the

parts arranged for joint use and operation, substantially as and for the purpose hereinset forth.

WILLIAM C. BOONE.

WILLIAM A. WHITFIELD.

Witnesses:

GEO. HEIBERGER,  
SAMUEL T. TATE.