C. H. JOHNSON.

Gas Burner.

No. 48,340. Patented June 20, 1865.

Fig. 3.

Fig. 2

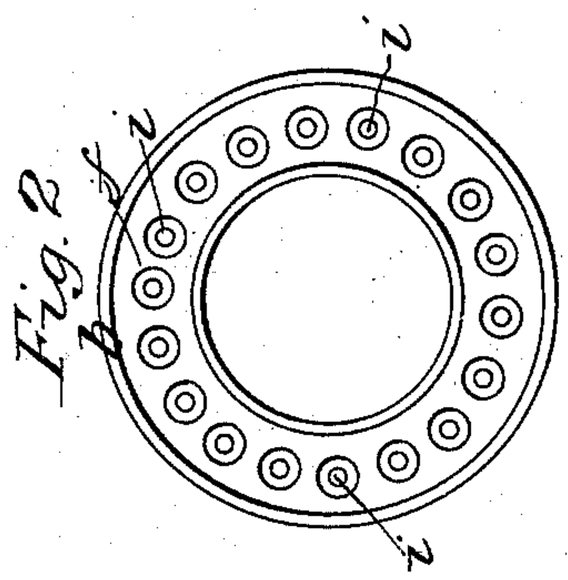


Fig. 4.

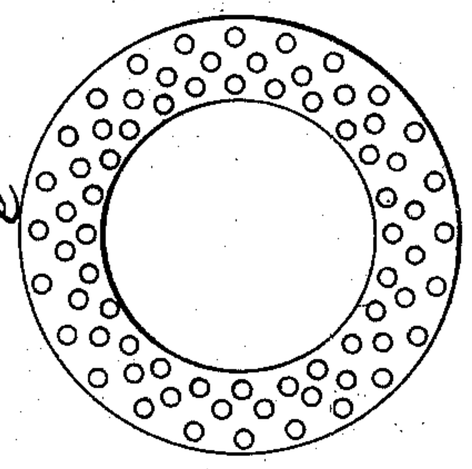
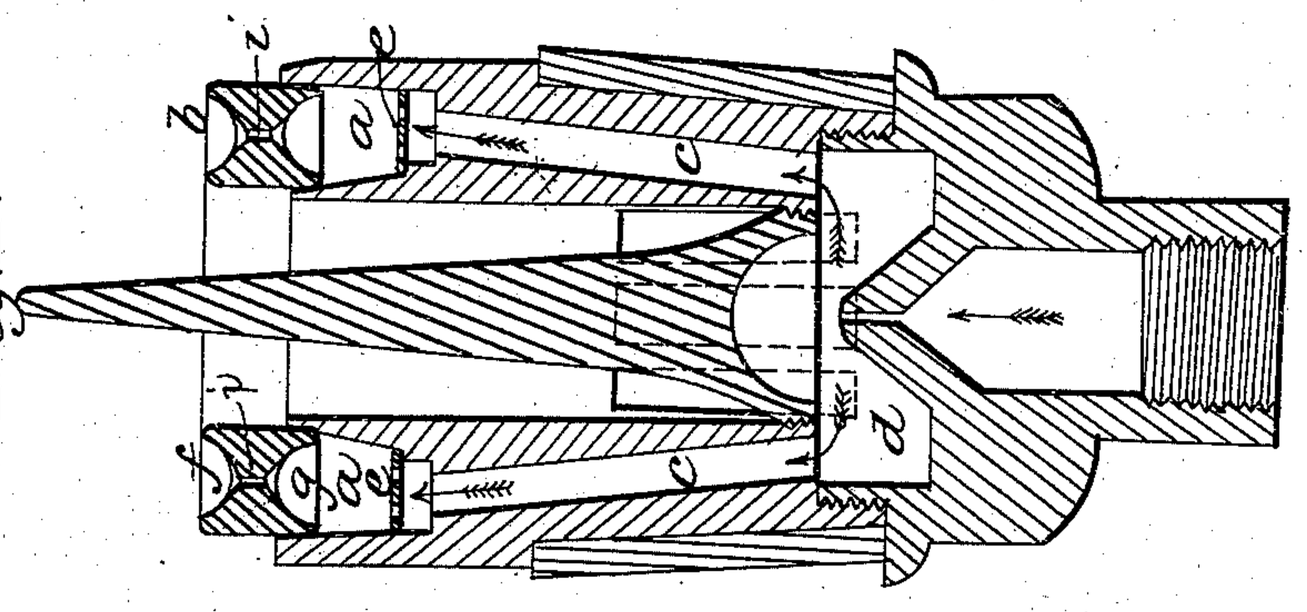


Fig. 1.



Witnesses:

Frederick Curtis

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UNITED STATES PATENT OFFICE.

CHAS. H. JOHNSON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND EUGENE WOODMAN, OF SAME PLACE.

ARGAND GAS-BURNER.

Specification forming part of Letters Patent No. **18,340**, dated June 20, 1865.

To all whom it may concern:

Be it known that I, CHARLES H. JOHNSON, of Boston, of the county of Suffolk and State of Massachusetts, have made a new and useful invention having reference to Argand Gas-Burners; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a vertical section of an Argand gas-burner containing my invention. Fig. 2 is a top view, and Fig. 3 a transverse section, of its annular tip. Fig. 4 is a top view of the annular foraminous partition placed within the burner, or in the tip-receiving chamber thereof.

The burner exhibited by Fig. 1 in the drawings has all the properties of the ordinary Argand-burner, with one or more improvements heretofore patented by me. As such improvements form no part of my present invention, it will be unnecessary to herein further allude to them.

In such burner, *a* denotes the tip chamber or recess for receiving and holding the fire-resisting annular tip *b*, which I usually construct of steatite, but which may be made of any other suitable heat-withstanding material or composition. Vertical channels for leading the gas from the induction-chamber *d* into the tip-chamber *a* are shown at *c c*.

In carrying out my invention I place within the tip chamber *a*, and so as to extend across it, an annular and foraminous partition, *e*, the object of it being to equally distribute the gas throughout the chamber in manner to cause it to be equably delivered to the various jet-holes of the tip *b*, whereby the flame may be prevented from "spearing," or be maintained at an equal height around its upper edge. I also form the annular tip *b* concave on its upper surface, or concave both on its upper and its lower surfaces; or, in other words, with a groove or channel extending entirely around each of the said surfaces, as shown at *f* and *g* in Figs. 2 and 3; and I countersink each of the tip jet-holes at its opposite ends, or particularly at its lower end, the same being as shown in such figures, in which *i i* exhibit the said jet-holes of the tip.

By constructing the tip *b* with the groove *f* at its upper surface or end the currents of gas escaping from the various jet-holes have a better opportunity of uniting before coming in contact with the flame than they do when the top surface of the tip is flat. Furthermore, by countersinking each jet-hole at its upper end the gas is enabled to spread therefrom into the groove to better advantage than it otherwise would. Again, by countersinking the jet-hole at its lower end the gas will not only pass into and through the jet-hole in greater volume, but without noise, or "singing," as it is termed.

The groove *g* aids in directing the gas into the various jet-holes, and, while serving to lessen the length of each hole, enables the tip to be made with a sufficient depth to properly extend into the tip-chamber.

What I claim as my invention in the Argand gas-burner is as follows:

1. The arrangement and combination of the foraminous partition *e* with the tip *b*, its chamber *a*, and the conduits leading into and out of such chamber.

2. The combination of the tip *b* with the groove *f* in its upper surface or end, or with the said groove *f* in its upper surface or end, and also with another groove, *g*, arranged in its lower surface or end.

3. The tip as made with each of its jet-holes countersunk at either or both of its extremities, and for the purpose specified.

4. The tip as made with a groove, *f*, in its upper surface or end and with each of its jet-holes countersunk at its upper end.

5. The tip as made with a groove, *f*, in its upper surface or end and with each of its jet-holes countersunk at both of its extremities.

C. H. JOHNSON.

Witnesses:
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