

G. Mooney,
Gas Burner.

No. 21,524.

Patented Aug 25. 1868.

Fig. 1.

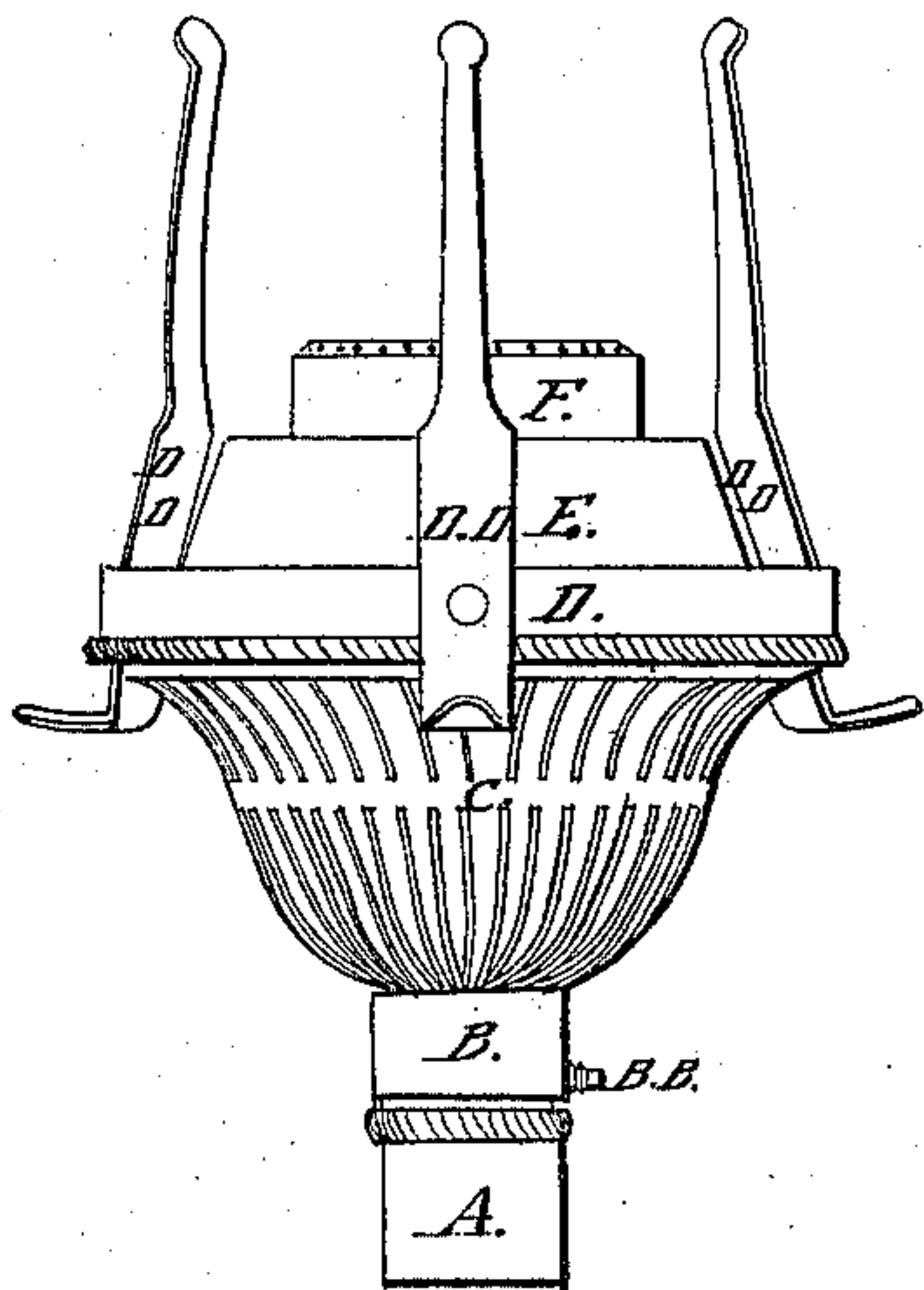


Fig. 2.

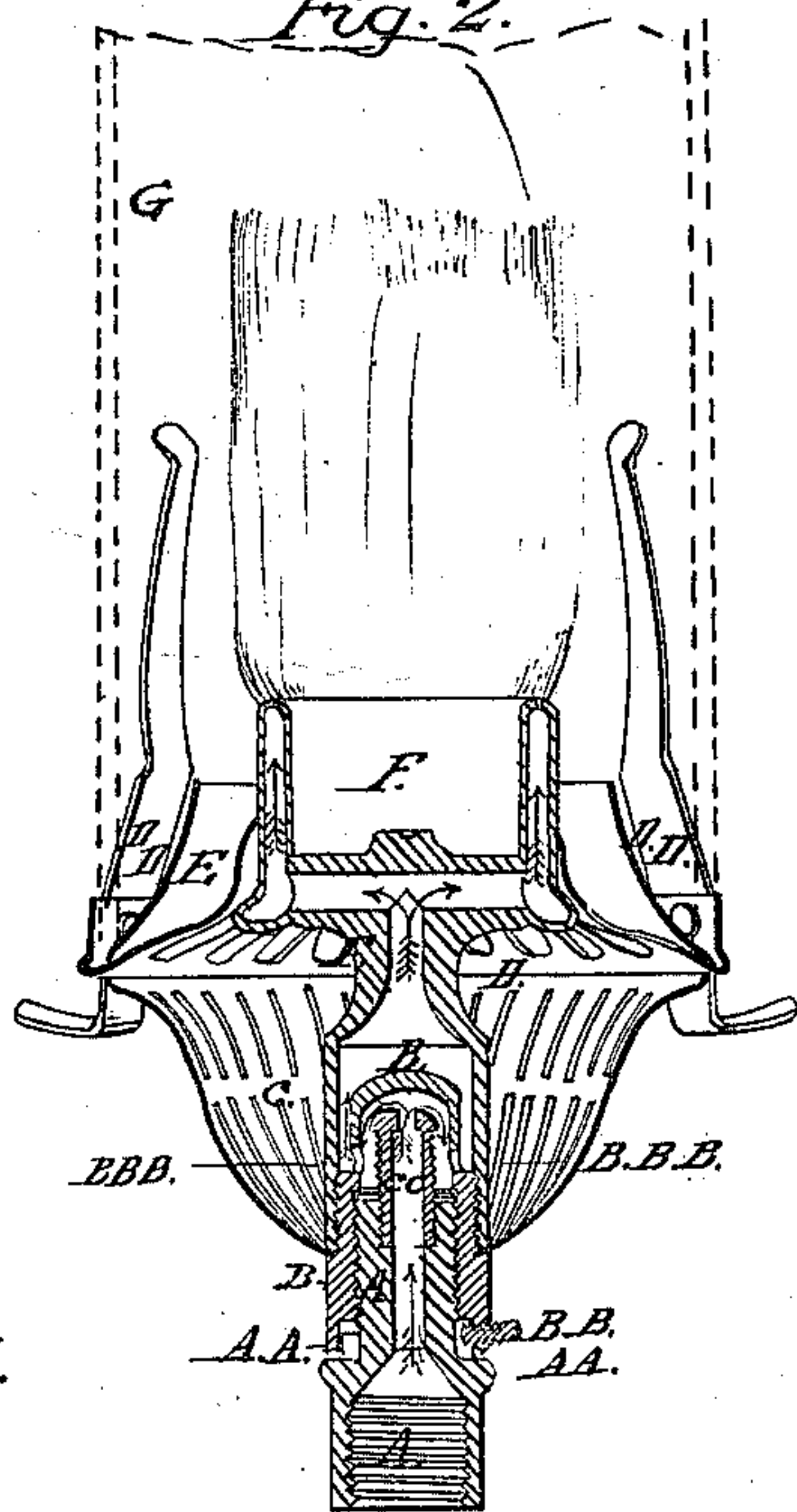


Fig. 3.

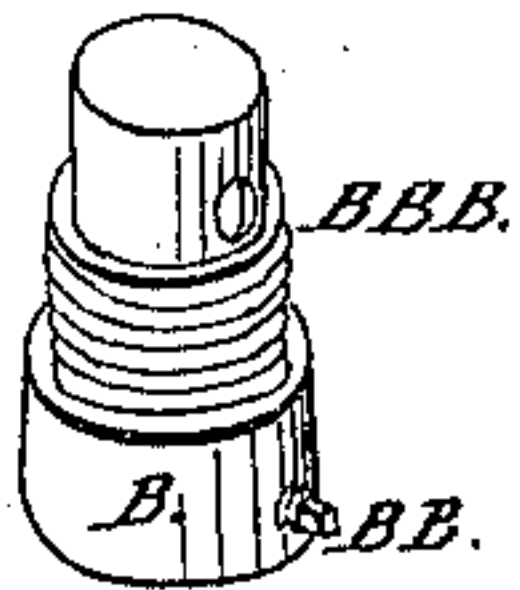


Fig. 6.

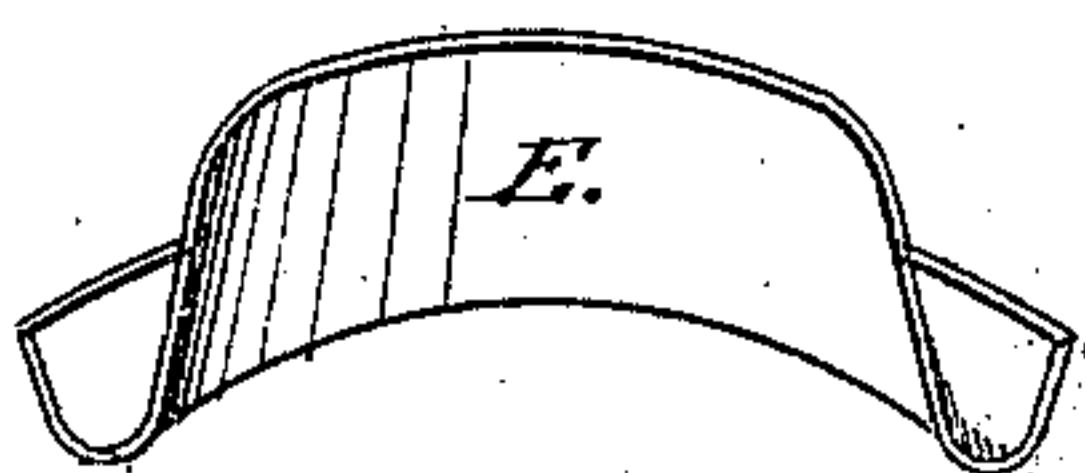


Fig. 4.

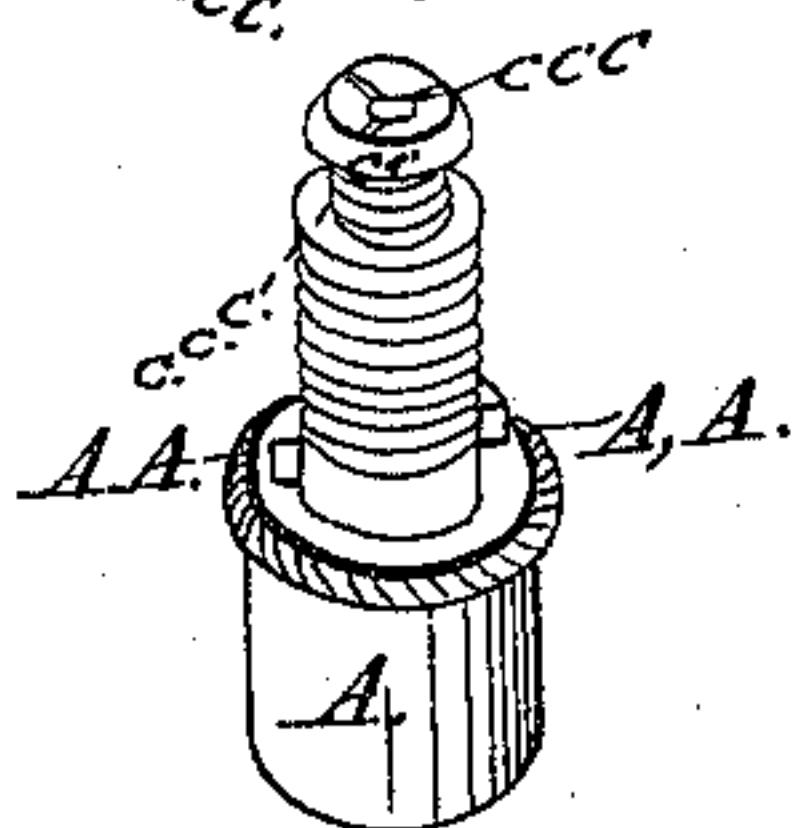
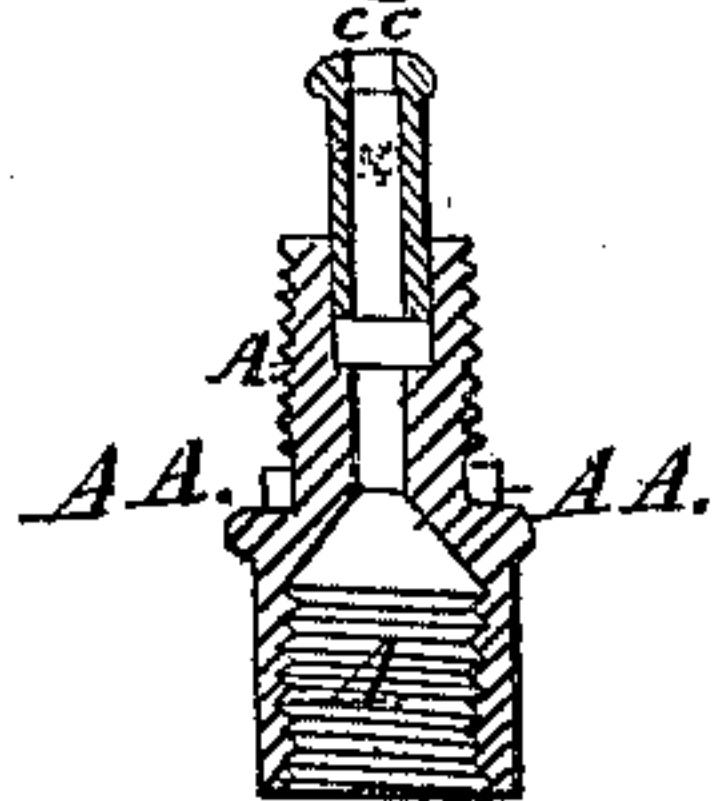


Fig. 5.



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Letters Patent No. 81,524, dated August 25, 1868.

IMPROVEMENT IN GAS-BURNERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO WHOM IT MAY CONCERN:

Be it known that I, GEORGE MOONEY, of the city and county of Providence, and State of Rhode Island, have invented a certain new and improved Argand Gas-Burner.

My invention partially consists in a novel construction of the part familiarly known as the "tip."

In all argand gas-burners hitherto constructed, the top or portion called the "tip" is flat, and the holes are drilled or punched at right angles thereto, causing the jets of gas to shoot upward, forming an upright cylindrical flame. As the white flame only yields light, and as atmospheric air in free combination with gas in combustion produces the same, it is desirable to have a burner so constructed that said combination be as perfectly and as thoroughly effected as possible. I therefore make the "tip" bevelled from the inside downwards, the outer edge being lower than the inner. The apertures for the flow of gas are drilled or punched at right angles with the bevelled face or "tip," causing the gas to flow in radiating jets from the body of the burner. The flame thus formed is, in a measure, bowl-shaped, and air rising along the side of the burner comes directly in contact with the burning gas, and the result is a clear white flame, rising from the very surface of the metal.

My invention also partially consists in the construction of a gas-burner in a peculiar and novel manner, by which the burner takes the place of, (if desired,) and combines within itself, a gas-cock, and is so arranged that, by the turning of the burner to the right or left, the gas is turned on or off.

Another feature in my invention is found in the arrangement and construction of an adjustable check within the burner, by which the noise from the flow of gas under high pressure is avoided. It may also be so constructed that, by its adjustment, the gas being mainly turned off, will continue to flow, retaining an almost imperceptible flame, and constituting a so-called "self-lighting" burner.

My invention also embraces a chimney-holder of peculiar and novel construction, for an argand gas-burner. Glass chimneys, as ordinarily manufactured, are more or less irregular in form, and especially is it the case that the bottoms thereof are uneven. As it is necessary to supply an argand burner with an even and regular current of air, and from below if possible, the unevenness referred to has proven to be of great disadvantage. The chimneys with uneven bottoms, resting upon holders as formerly constructed, would admit at various points an irregular flow of air, destroying the uniformity and beauty of the flame.

To obviate this disadvantage, I construct my holder in such a manner that when the chimney rests thereon a wall of metal, standing parallel with the chimney, breaks joints with any opening caused by unevenness in the bottom of the chimney, thus preventing, in a practical degree, the lateral and irregular influx of air.

My chimney-holder also embraces another novel feature, in a projecting bead on the outer edge of its exterior, which admits of the more perfect fastening of the fingers that press against the chimney, by receiving them in spaces cut in the bead, and which, with the rivet so common in use, renders them firm and durable.

To enable others skilled in the art to make and use my invention, I will proceed, with the assistance of the accompanying drawings, to give a full and clear description thereof.

Six figures are shown, and identical parts are lettered alike in each.

Figure 1 represents a full side elevation view of one of my argand gas-burners complete.

As will be seen, it resembles in its general form the burner known in the trade as the "basket argand."

A represents the base of the burner, which is attached to the fixture. It embraces, within, novel features, hereafter described.

B represents the surbase, of new and peculiar structure, and is a separate member, between the base and the burner proper.

B B represents a stop-screw, the use of which will hereafter be explained.

C represents a basket or shell, held in position by being pinched between the surbase B and the burner proper. The slots shown therein admit of the regular passage of air. This part is comparatively old, and has been much used.

D represents a chimney-holder of novel construction. The novelty consists in having its outer edge turned up, and its upper or lower edge projecting like a bead. The chimney rests within the edge turned up, resulting

in a comparatively tight joint between the glass and metal. The beaded outer edge, projecting as shown, admits of recesses or spaces to receive the fingers D D, and, with the rivet, forms a durable mode of fastening.

D D represent the fingers that hold the chimney securely in position. They are riveted in the usual manner to the holder, and possess novelty only in being held in the recess before described.

E represents a shell resting upon the chimney-holder, and serves to concentrate air, and guide it properly to the burner when lighted. As here shown, it embraces no novel feature. In Figure 6, however, is shown an obvious modification thereof, by which a part of the advantages contained in my holder, D, might be embraced, as it would involve similar principles.

F represents the burner proper. In that part known as the tip can be seen the holes through which gas flows to ignition. In the peculiar form of this so-called tip, and in the drilling or punching the holes to correspond thereto, rests an important feature of my invention.

Figure 2 represents a sectional view of one of my burners, as shown in fig. 1.

I will refer only to parts not shown in previous figure.

A A represent shoulders, against which stop-screw B B is brought in contact, to control the movement of surbase B, if turned to the right or left.

B B B represent apertures, through which gas flows, as indicated by the arrows.

C C represents an adjustable check set in top of base A, and can be raised or lowered. This is a distinctive feature of my invention. It can be made to work as a screw, as shown in the drawing, or as a plain tube, as shown in fig. 5.

G represents the common glass chimney requisite with all argand burners. It will be observed that it rests within the upright portion of the chimney-holder D, the inner bottom edge of the chimney resting on the surface of shell E, and the outer bottom edge resting against the inner surface of chimney-holder D, forming substantially a check to any irregular flow of air beneath the chimney, and by which an even and regular flame is secured, with the use of any chimney manufactured with ordinary care.

In connection with fig. 2, particular attention is called to the form of the "tip." The model from which this drawing was made was constructed in part under a patent heretofore granted me, by which the upper part of the burner is made of solid or continuous metal, instead of by inserting a separate tip, as formerly constructed. It will be seen that the inner edge is higher than the outer, and that the holes are drilled or punched at right angles to the face of the "tip" thus formed. Therefore, when lighted, the gas flows in an outward and upward direction, causing a bowl-shaped flame, to a greater or less degree, depending upon the pressure of the gas.

Figure 3 represents the surbase B, the stop-screw B B, and apertures B B B, in detail.

Figure 4 represents the base, A, the shoulders A A, and the adjustable check C C, in detail.

C C C represent grooves in the top of check C C, through which a slight current of gas will flow, even when the check is set at its highest point, and bearing against the under side of the top of surbase B.

Figure 5 represents the base, A, with the check C C, arranged without a screw. By simply inserting it, and screwing base A into surbase B, it, by pressure against the under side of the top of base, A, becomes readily adjusted to a proper height.

Figure 6 exhibits, in section, a modification of the shell E, before referred to.

By having the lower edge turned up, as shown, the same effect and principle would be involved, as shown in my chimney-holder, D, before described.

The operation of my burner is as follows:

Gas flows through the base, A, as indicated by the arrow, up through the adjustable check C C, then reverberating against the under side of the top of the surbase B, flows downward, through the apertures B B B, into the body of the burner, thence upward through holes in the tip, to ignition.

By turning the burner to the right or left upon the base, A, it is evident that the surbase B is, with the burner, raised or lowered on the screw of the base, A, the movement being limited by the contact of the stop-screw B B with the shoulders A A. If the burner be so lowered, the top of the check C C is placed in close contact with the under side of the top of the surbase B, and flow of gas is suspended. If the burner be raised, the flow of gas is free.

Should a so-called "self-lighting" burner be desired, the grooves C C C, or their equivalents, are inserted in the top of the check C C, and being only of a sufficient capacity to admit of a light current or flow of gas, a scarcely perceptible flame is retained at the tip, while the main flow of gas is suspended, in a manner before described.

By the impinging of the gas flowing from check C C against the metal next above it, and by its downward course, but little noise is produced, and renders my burner particularly valuable as a "still light."

I claim as my own invention, and desire to secure by Letters Patent—

1. In an argand gas-burner, a bevelled tip, drilled or punched at right angles with its face, substantially as described.
2. The combination of the base, A, provided with shoulders A A and adjustable check C C with or without the grooves C C C, with the surbase B and stop-screw B B, constructed and arranged to operate substantially as herein shown and described, for the purpose set forth.
3. A chimney-holder for an argand gas-burner, with the peculiar construction of the outer edge, with the modifications thereof, as described, for the purposes specified.

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