W. W. BATCHELDER.

Gas Burner.

No. 20,604. Patented June 15, 1858.

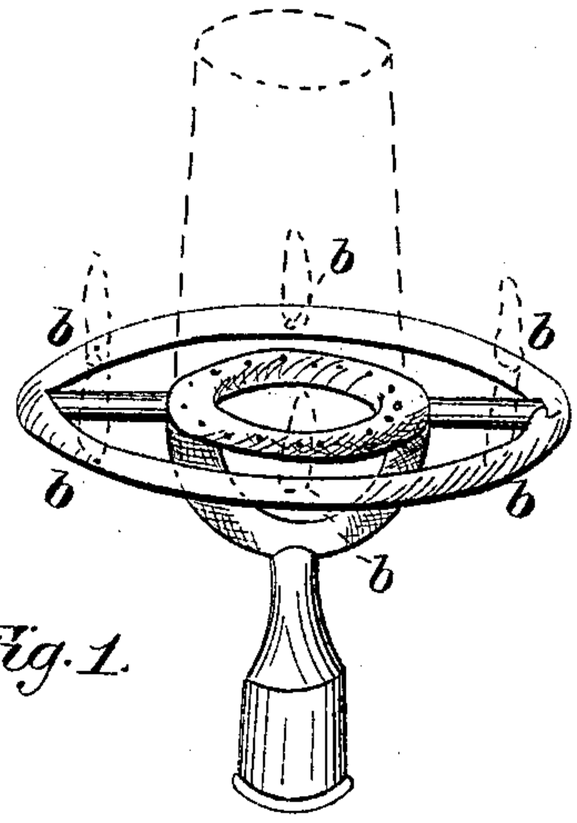

Fig. 1.

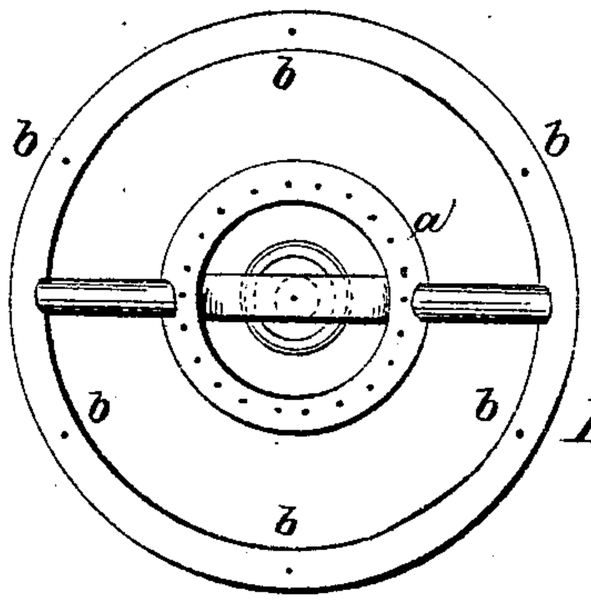

Fig. 2.

UNITED STATES PATENT OFFICE.

W. W. BATCHELDER, OF NEW YORK, N. Y., ASSIGNOR TO WM. J. TOWNSEND, OF SAME PLACE.

ARGAND GAS-BURNER.

Specification of Letters Patent No. 20,604, dated June 15, 1858.

To all whom it may concern:

Be it known that I, WM. W. BATCHELDER, of New York, county of New York, and State of New York, have invented a certain new and useful Improvement in Gas-Burners; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being made to the annexed drawing, making a part of this specification, in which—

Figure I is a perspective view of my improved burner. Fig. II is a top or plan view thereof.

Similar letters indicate similar parts throughout.

This invention is an improvement in the "Argand" gas burner, the object being to produce a steady flame and a more complete combustion of the carbon held in suspension, without the necessity of employing a shade or a chimney and without which that form of burner has heretofore been useless. In fact even with the aid of a chimney more or less carbon has always been deposited upon the walls of the room and other objects surrounding the flame, while the intense heat thrown off is often very objectionable, and yet the character of the light produced by that burner is such as to render it a desirable form.

My invention or discovery lies in surrounding the central ring of flames by an additional ring composed of lesser jets, which are placed equidistant from the central one, as well as from each other, and about six of these lesser jets will be found to answer a good purpose. I have discovered that such arrangement of smaller flames produces upon the central and greater one the remarkable effect of obviating all flickering and smoking, so that the Argand may be burned at its maximum height, for useful effect, without the employment of a chimney.

To illustrate my invention: the Argand gas burner, as is well known, consists of an annular series of small holes placed at such distance from each other that the issuing gas when lighted forms a cylindrical flame. One of these is shown in the annexed drawings at (*a*); around and about this I place the supplemental or steadying jets. As shown in the figure they consist of a number of holes in a ring circumscribing the burner (*a*), equidistant from each other, and are on a level with the holes in the latter, although this is not strictly necessary, said holes being seen at the letters (*b*). The burner is, as usual, fitted with a stem to screw on to the gas pipe.

The operation is as follows: Having lighted the Argand circle (*a*) next light also the apertures (*b'*) and adjust the height of the central flame as desired for light, and as seen in Fig. I. The small jets need only be in the proportion to the greater as say one fourth of an inch to one and a half inches, or as seen in said last named figure, although there is no exact limit in this respect. Now it will be found that so long as the outer row of jets is kept lighted, so long will there be produced a steady and unflickering as well as smokeless flame; by putting out one or more or the whole of the supplemental jets, however, the flame will at once become smoky and flickering. The proper distance at which to locate the steadying flames or jets from the central one will be, for a burner of say three quarters of one inch in diameter, at a distance on the line of a radius of three quarters of one inch from the ring of holes.

Variation may be made in the number and size of holes also as well as in the manner of applying the supplemental steadying jets. Those, instead of being formed into a ring, may be like branches projecting from the central body or stem of the burner. This latter form has the advantage of giving ability to adjust the distance from the central light, by bending them as may be necessary, such experimenting however is only required in producing the first burner of any new form, as, once obtained, all the others may have their steadying jets at once placed in their proper permanent positions.

I claim—

Surrounding the cylindrical flame of an Argand burner with supplemental jets, placed at such distances from each other and from the central flame, that they shall neither intermingle with each other nor with said flame, and of such number as will produce the effects described.

In testimony whereof I have hereunto subscribed my name.

W. W. BATCHELDER.

Witnesses:

J. P. PIRSSON,

T. H. MAYNARD.