

(No Model.)

J. B. P. W. DE MALBERG.
INCANDESCENT GAS BURNER.

No. 585,919.

Patented July 6, 1897.

Fig. 1.

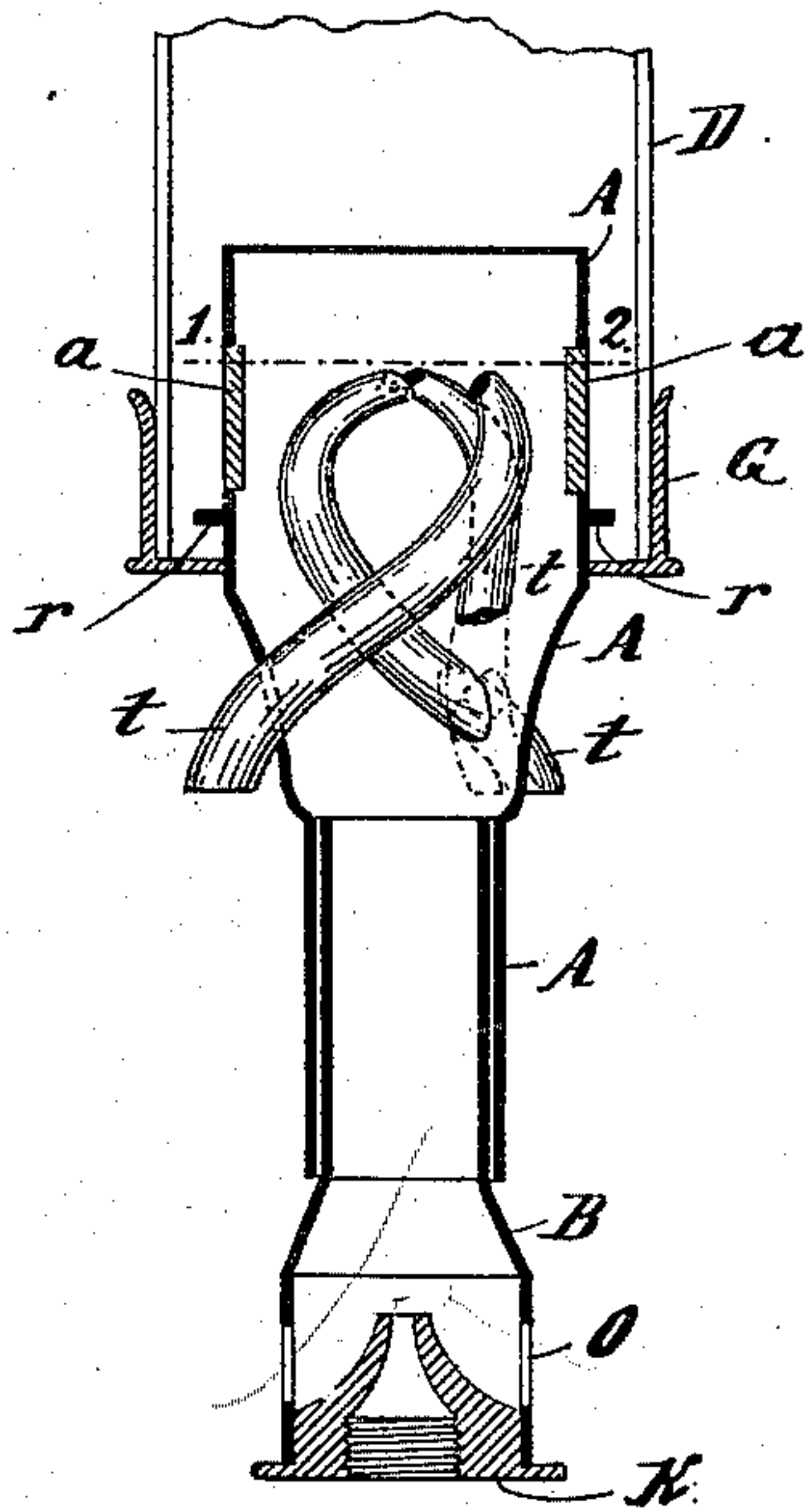


Fig. 2.

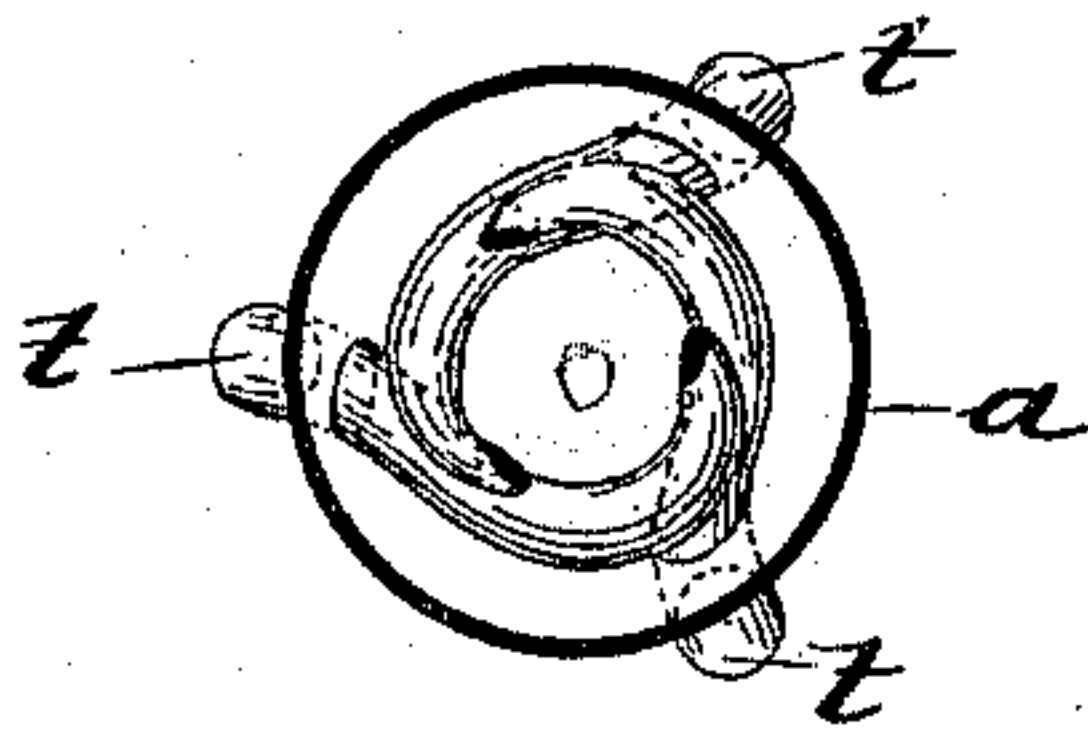


Fig. 3.



Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

JEAN BAPTISTE PAUL WANAULD DE MALBERG, OF RHEIMS, FRANCE.

INCANDESCENT GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 585,919, dated July 6, 1897.

Application filed July 25, 1896. Serial No. 600,493. (No model.) Patented in France January 29, 1896, No. 253,433; in Belgium March 14, 1896, No. 120,354, April 17, 1896, No. 120,920, April 28, 1896, No. 121,093, and May 1, 1896, No. 121,141, and in England March 25, 1896, No. 6,581, and May 1, 1896, No. 11,100.

To all whom it may concern:

Be it known that I, JEAN BAPTISTE PAUL WANAULD DE MALBERG, a citizen of the French Republic, residing at Rheims, France, have invented a certain new and useful Incandescent Gas-Burner, (for which patents have been granted in France January 29, 1896, No. 253,433, and August 18, 1896, No. 253,433; in Belgium March 14, 1896, No. 120,354; April 17, 1896, No. 120,920; April 28, 1896, No. 121,093, and May 1, 1896, No. 121,141; in England March 25, 1896, No. 6,581, and May 1, 1896, No. 11,100,) of which the following is a specification.

This invention relates to incandescent gas-burners in which a current of air is conveyed through the center of the flame for producing a flame of great heat.

My improvements in burners of said kind relate to the combination of the same with three or more tubes arranged between the air and gas tube and the burner proper in such a manner as to cause the quantity of air conveyed through the center of the flame to make a rotary or whirling movement, which effects a perfect mixture of air and gas before the combustion-surface is reached.

In the accompanying drawings, Figure 1 is a vertical section of a burner constructed according to my invention, and Fig. 2 is a horizontal section taken on line 1 2 of Fig. 1. Fig. 3 shows a cross-section, somewhat enlarged, of one of the tubes; and Fig. 4, the slightly-flattened exit-mouth of the same, also enlarged.

The burner is formed of a Bunsen burner of ordinary construction, of a hollow partly-cylindrical partly-conical portion or gas-nozzle K, which screws onto the gas-pipe, and of a tube B, of thin copper, screwed onto the piece K. This tube is provided at its lower end with a number of holes O, the number and diameter of the said holes being calculated so as to allow a quantity of air to be drawn into the burner sufficient to form the incandescent gaseous mixture.

The burner also comprises an upper portion or head A, formed of an upper cylinder of sheet metal made in two parts connected together by a ring a, of steatite, which inter-

cepts the heat, and of a tube which fits easily on the copper tube B, having a conical joint, and also a gallery G, of any suitable form, adapted to support a glass chimney D and a globe.

The head A of the burner is traversed by three or more tubes *t*, which fit the inner circumference of the head and are each of about one-sixth of an inch in its inside diameter. These tubes project below the lower end of the said head of the burner and are placed obliquely inside the same at about an angle of forty-five degrees. They are also slightly curved in a spiral manner, so as to reach to about the middle of the height of the cylindrical head without touching one another. They are also cylindrical at their lower ends and slightly flattened at their upper ends, the major axis of the elliptical section thus formed being arranged so that it passes through the center of the cylindrical head and divides the current of mixed gas and air coming from the Bunsen burner.

The air is drawn in by the draft created by the glass chimney D and acquires a whirling movement, which effects a perfect mixture before the combustion-surface—that is to say, the disk or sheet of gauze—is reached.

A metallic ring or disk *r*, of about one-tenth of an inch in breadth, is arranged, outside the head A and reduces the space between the glass chimney, supported by the gallery G, and the outer surface of the head A. This ring, without completely closing up the space, forces the larger portion of air drawn in by the draft due to the combustion to pass through the tubes *t*, thereby increasing the efficiency of the burner.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a Bunsen burner, the combination with the tube leading the gas and air to the burner proper, of three or more cylindrical tubes *t*, placed obliquely in said burner while projecting below the lower end of its head, which tubes are slightly flattened at their upper ends, in order to cause the different air-currents conveyed to the center of the

flame, to acquire a whirling movement effecting a perfect mixture of gas and air substantially as and for the purpose described.

2. In a Bunsen burner, the combination
5 with the tube leading the gas and air to the burner proper, and with cylindrical tubes slightly curved in a spiral manner and slightly flattened at their upper ends, of a ring r , adapted to cause a part of the air-current induced by the chimney to flow through
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the said cylindrical tubes, substantially as and for the purpose described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JEAN BAPTISTE PAUL

WANAULD DE MALBERG.

Witnesses:

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N. HEINTZ.