No. 629,296. Patented July 18, 1899.

A. T. M. JOHNSON.

GAS LAMP OR BURNER.

(Application filed Mar. 18, 1898. Renewed June 23, 1899.)

(No Model.)

Fig. 2.

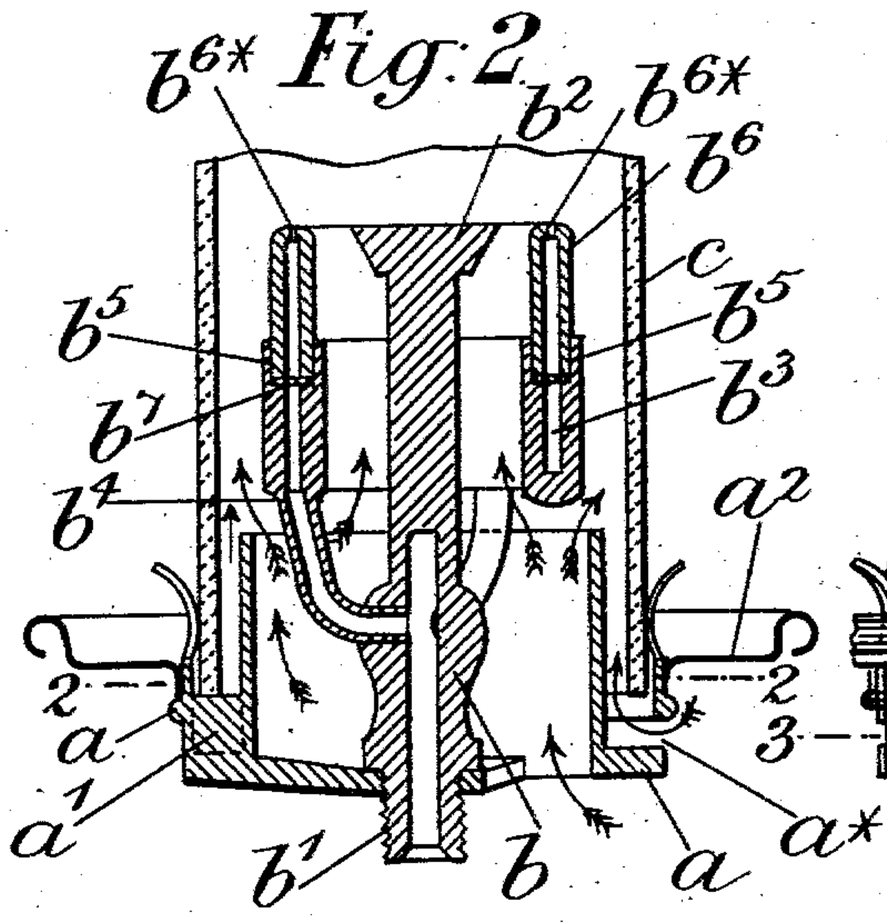


Fig. 1.

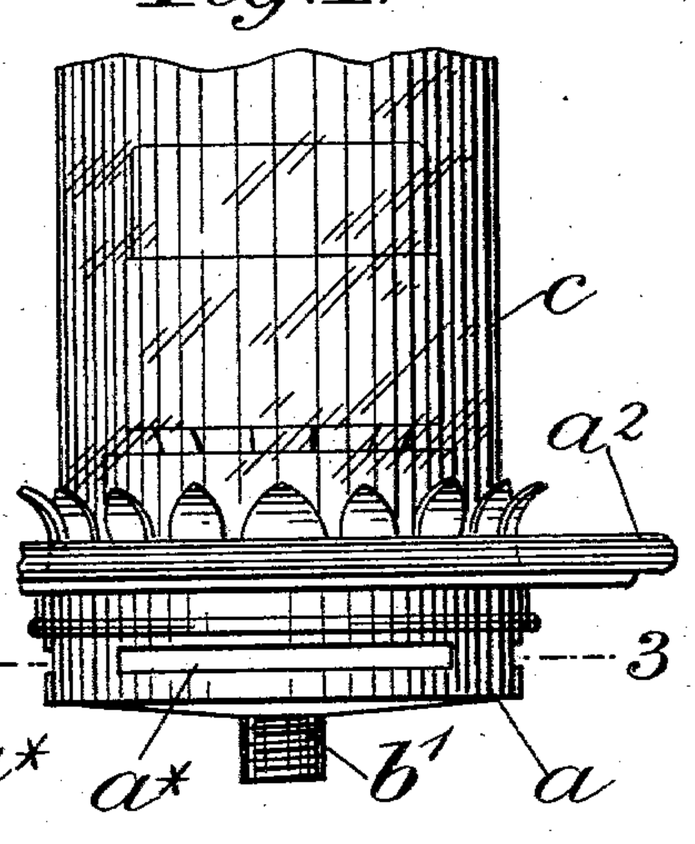


Fig. 3.

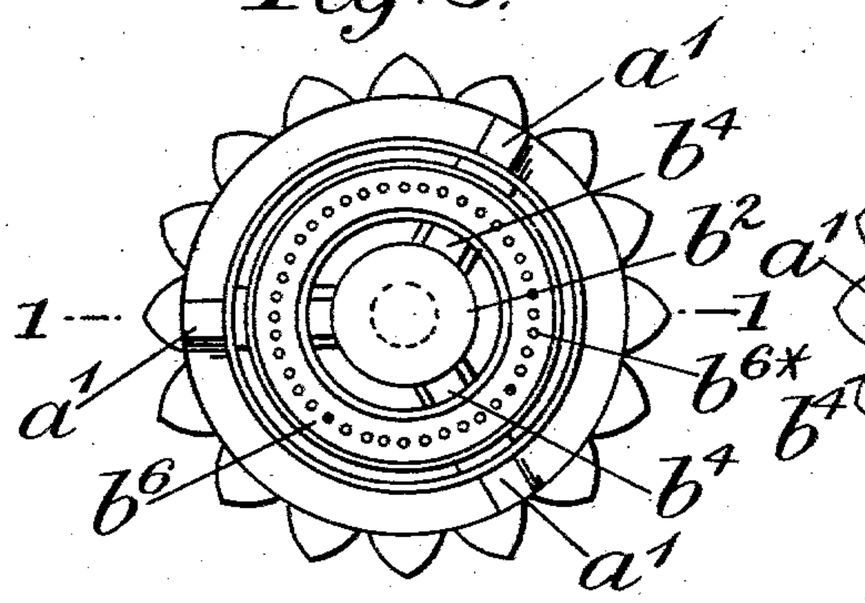


Fig. 4.

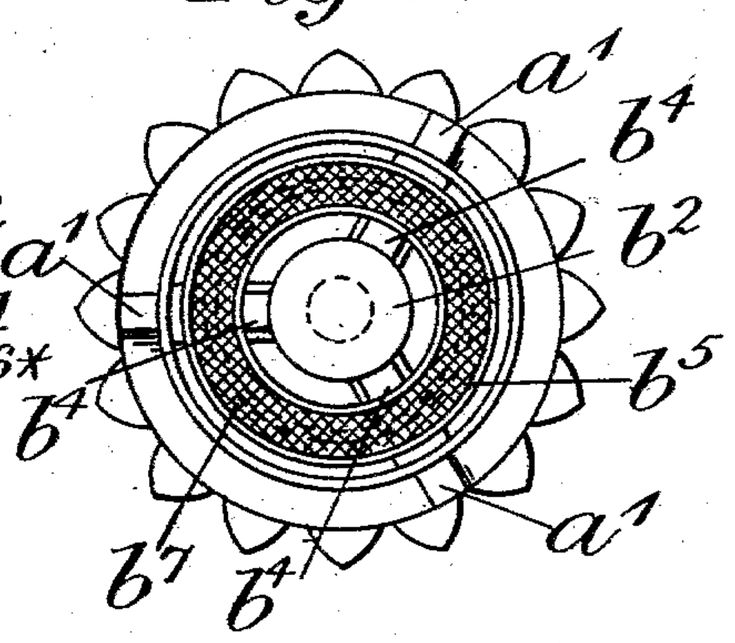


Fig. 5.

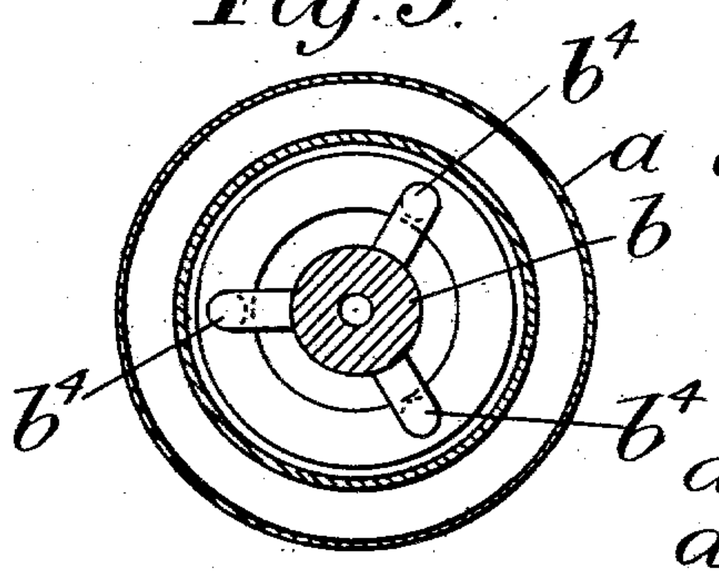
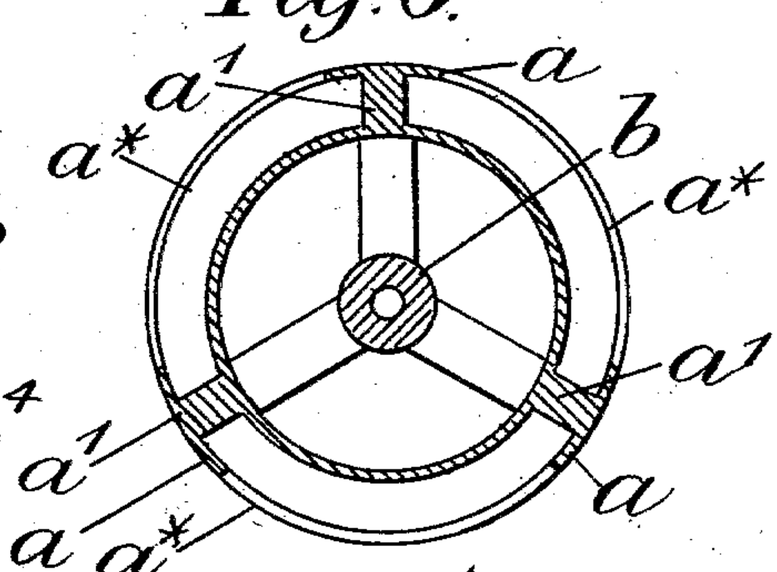


Fig. 6.



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ARTHUR THOMAS METCALF JOHNSON, OF LONDON, ENGLAND.

GAS LAMP OR BURNER.

SPECIFICATION forming part of Letters Patent No. 629,296, dated July 18, 1899.

Application filed March 18, 1898. Renewed June 23, 1899. Serial No. 721,626. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR THOMAS METCALF JOHNSON, retired civil servant, a subject of the Queen of Great Britain, residing at No. 109 Calabria road, Highbury, London, in the county of Middlesex, England, have invented certain new and useful Improvements in or Connected with Gas Lamps or Burners, of which the following is a specification.

This invention relates to improvements in or connected with gas lamps or burners, and has for its object to obtain a circular or Argand flame and to conduct to the inner and outer walls of the flame a supply of air in such manner that more perfect combustion, and therefore a more brilliant flame, will be obtained without any increase in the consumption of gas.

In the accompanying drawings, Figure 1 is an elevation representing a gas-burner constructed according to the present invention. Fig. 2 is a vertical section taken on the line 1 1 of Fig. 3. Fig. 3 is a plan thereof, but with the gallery removed. Fig. 4 is a similar view to Fig. 3, but with the nipple of the burner removed. Fig. 5 is a transverse section taken on the line 2 2 of Fig. 2 and looking from below, and Fig. 6 is a similar view taken on the line 3 3 of Fig. 1.

In the several figures like parts are indicated by similar letters of reference.

a represents a cylindrical casing formed with several studs or rests a', constituting a seat for the chimney c, while a gallery a^2 is provided to support a globe when desired. The chimney c closely fits the outer wall of the cylindrical casing a, which between the studs or rests a' is provided with circumferential slots a^* to admit a supply of air beneath the lower end of the chimney to the interior thereof and exterior of the burner.

The cylindrical casing a is fixed with a hollow stem or boss b, which at its lower end is furnished with a threaded nipple b', adapted to screw into any existing gas-fitting, and at its upper end is provided with a deflecting-button b^2. Around the upper part of the stem or boss b is arranged an annular chamber b^3, which is supported upon the upper ends of pipes or conduits b^4, with the bore of which it communicates, and the lower ends of the pipes or conduits b^4 are fixed with the tubular stem b and communicate with the bore thereof. The annular chamber b^3 is formed with an enlargement and a seat at b^5, and on this seat b^5 is dropped a hollow nipple b^6, formed of steatite or other refractory material, which at its lower part is open to the chamber b^3 and at its upper part is formed with a ring of perforations b^{6*}, through which the gas issues, as is well understood, while beneath the nipple b^6 and within the seat b^5 is arranged a gas-distributer, consisting of a ring of wire-gauze or perforated metal b^7, or several of such rings might be employed, if desired.

The gas issuing from the perforations b^{6*} when ignited forms an annular belt of flame which creates a rapid draft of air through the burner, and these currents pass through the length of the inclosed airway formed by the cylinder a in the direction indicated by the arrows in Fig. 2, and the air passing to the interior of the burner is by the button-head b^2 caused to impinge upon the inner wall of the flame at or near the point of ignition, while the air which passes outside the chamber b^3 is conducted in close contact with the outer wall of said flame, and the currents of air thus promote or induce rapid combustion.

By the means hereinbefore described an Argand burner is rendered much more efficient and caused to give a brilliant, white, and steady light without materially increasing the expenditure of gas and without having recourse to incandescent mantles.

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 gas-lamp, the combination of a cylindrical casing formed with inner and outer walls against the interior of the outer one of which closely fits the chimney, a seat for the chimney located between the walls, slots in the outer wall of the cylindrical casing, a central hollow stem fixed within the cylindrical casing and adapted to be connected with the gas-supply pipe, an annular chamber formed with a seat to receive a nipple and supported by pipes or conduits from the hollow stem, a short distance from the cylin-

drical casing so as to leave a space between the parts, a nipple fitted to the seat, a wire-gauze gas-distributer placed within the annular chamber, a deflecting-button carried by the stem and a cylindrical chimney carried by the seat of the cylindrical casing, the parts being so arranged as to leave lengthened airways up through the inside of the burner and around the outside of the annular chamber and nipple, substantially as herein shown and described and for the purpose stated.

2. In a gas-lamp, the combination with a hollow stem, adapted to connect with a suitable gas-supply pipe, an annular chamber connected to said stem and terminating in a nipple for distributing the gas in cylindrical form, of a chimney-holder consisting of a cylindrical casing, and extending some distance below the nipple of the burner, and a chimney closely fitting the holder with airways through the cylindrical casing and between the chimney and the annular chamber and nipple, substantially as described.

3. In a gas-lamp, the combination of a cylindrical casing, formed with inner and outer walls, a seat for the chimney having airways therethrough and located between said walls, air-passages in the outer wall of the cylindrical casing, a hollow stem fixed within the cylindrical casing, and adapted to be connected to a gas-supply pipe, and an annular chamber connected to said casing and terminating in a nipple for the discharge of the gas in cylindrical form, and conduits connecting the chamber and casing, so as to leave a space between the parts, substantially as described.

ARTHUR THOMAS METCALF JOHNSON.

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