

A. C. NOAD.
 INCANDESCENT GAS LAMP.
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978,477.

Patented Dec. 13, 1910.

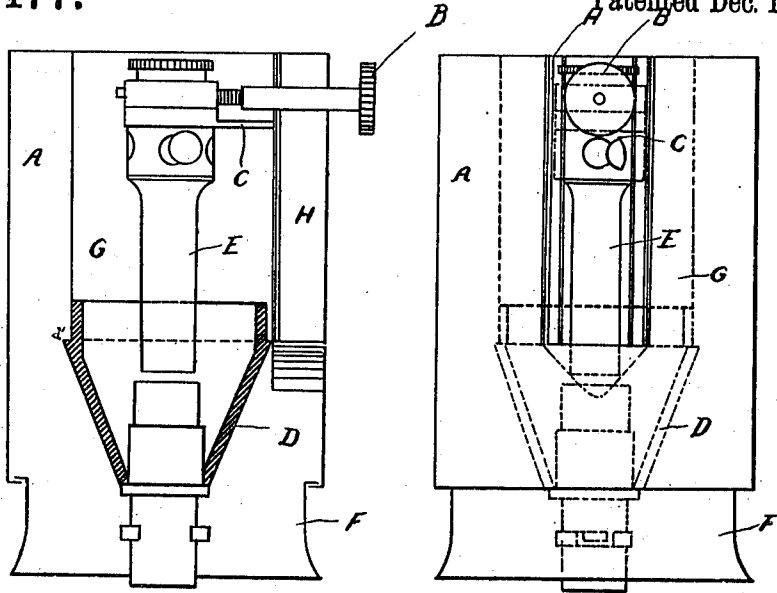


FIG. 1.

FIG. 2.

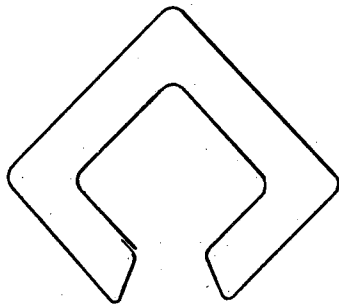


FIG. 4.

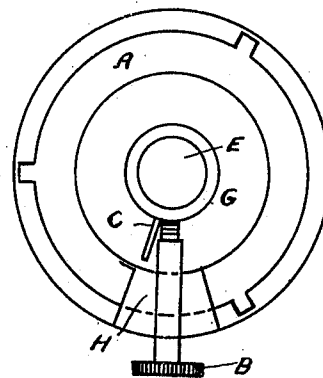


FIG. 3.

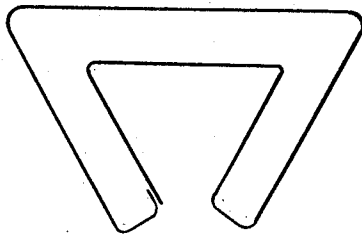


FIG. 5.

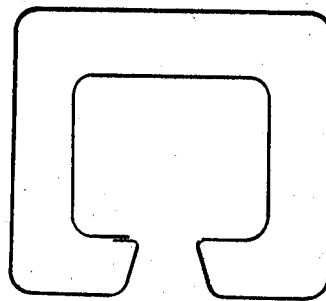


FIG. 6.

Witnesses
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UNITED STATES PATENT OFFICE.

ARTHUR CUMMING NOAD, OF LONDON, ENGLAND, ASSIGNOR OF ONE-THIRD TO THOMAS TOWNSEND RUSSELL, OF LIVERPOOL, ENGLAND.

INCANDESCENT GAS-LAMP.

978,477.

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To all whom it may concern:

Be it known that I, ARTHUR CUMMING NOAD, gas-engineer, a citizen of the United States, residing at 18 Louvaine road, St. Johns Hill, Clapham Junction, London, England, have invented certain new and useful Improvements in Incandescent Gas-Lamps, (for which I have applied for a patent in Great Britain and which application is dated June 4th, 1908, No. 12,146,) of which the following is a specification.

This invention has for its object an inverted incandescent gas lamp having a draft chimney or flue so constructed as to carry the products of combustion past the air intakes of the Bunsen tube without permitting the same to vitiate the air admitted to the Bunsen tube and the whole so arranged and combined that air freely circulates around the burner while the regulators for the air and gas admitted to the Bunsen tube are freely accessible from outside the lamp.

Some inverted incandescent burners have been constructed in which a preferably removable, chimney surrounds the mantle, or is fitted immediately above it. It has also been proposed to divide the chimney into two or more flues extending upward for the purpose of creating draft and to carry away the products of combustion.

Another known construction has a chimney continued up around the Bunsen burner to a point above the air intake and tubes communicating with the outer air through the outside of the chimney connect with a chamber surrounding the air intake or with the latter directly.

I have found that in the form first above mentioned the mantle may not get an even draft from all sides, while in the other forms it is difficult to induce a sufficient air supply to the Bunsen burner.

The object of my invention is to overcome these disadvantages and to provide a burner in which the Bunsen tube is supplied with a full current of air not contaminated by products of combustion and in which the mixing tube is completely surrounded by a constantly changing current of air of relatively large volume so that it is well cooled.

According to this invention I make my draft chimney in the form of a say annular, chamber open at the top and bottom, and have the outer wall connected at the bottom with a chimney immediately above or sur-

rounding the mantle, and the inner wall connected with a plate or shield to protect the chamber formed by the inner wall from the products of combustion. The inner chamber formed by the inner wall of the chimney is sufficiently large to provide a clear space between it and the Bunsen burner on all sides. The chimney surrounds the Bunsen burner and air intakes except at one part where it is discontinued (from the top some distance down) for a sufficient distance to afford access to and allow operation of gas and air regulators, and also to allow free entrance of fresh cool air to the inner chamber formed by the inner wall of the chimney.

The ends of the annular chamber (or chimney) where the inner and outer walls are discontinued for a short distance are closed by joining the walls together across the annular space, the whole of the distance downward which the walls are cut.

I do not limit the use of this chimney to a single burner only, it may be used in lamps where more than one burner is used.

Figure 1 is a sectional elevation of one form of my chimney with burner attached. Fig. 2 is an elevation of the same. Fig. 3 is a plan of the underside of Fig. 2. Figs. 4, 5, and 6 are modified forms of the chimney.

A is the chimney, shown circular in Figs. 1, 2 and 3; but this may be square or triangular as illustrated in Figs. 4 to 6, or polygonal.

B is the gas regulator, C is the air regulator, D is the shield, of say refractory material. It supports the chimney for which purpose it has a shoulder *d'*.

E is the Bunsen tube.

F is a separate small chimney immediately surrounding the nozzle of the burner from which the mantle is suspended.

G is the inner chamber immediately surrounding the Bunsen tube and formed by the inner wall of the chimney.

H is an opening by which the inner chamber communicates with the atmosphere allowing free access of air to the inner chamber, and also allowing manipulation of the gas and air regulator.

I prefer to make the inner and outer walls that form the chimney A and inner chamber G by folding a single piece of metal in the manner shown in the drawings, the joint

at *a* being secured in any convenient manner say by brazing.

Claims.

1. In an inverted incandescent gas lamp the combination with the mixing chamber that serves also as the Bunsen tube of a shield surrounding the lower end of the burner, an annular opensided chimney resting on the shield and surrounding the mixing chamber, an air intake for the Bunsen burner and air and gas regulators.

2. In an inverted incandescent gas lamp a Bunsen tube a chimney surrounding the Bunsen tube, said chimney forming an opensided chamber for the admission of air to the Bunsen tube, also forming a closed passage for conducting the products of combustion clear of the air intake, the open side of the air intake extending parallel with the length of the mixing chamber and surrounding the regulators for air and gas supply of the Bunsen tube, and regulators for air and gas extending through such passage.

3. In an inverted incandescent gas lamp a Bunsen tube a chimney surrounding the Bunsen tube and formed of a folded sheet of metal said chimney forming an open sided chamber for the admission of air to the Bunsen tube, and also forming a closed passage for conducting the products of combustion clear of the air intake, the open side of the air intake extending parallel with the

length of the mixing chamber and surrounding the regulators for air and gas supply of the Bunsen tube, and regulators for air and gas extending through such passage.

4. In a lamp for inverted incandescent gas lighting the combination of a mixing chamber, an air intake above the same, a chimney surrounding the same, and forming a closed chamber for products of combustion an elongated opening in the said chimney a cooling chamber formed by the chimney communicating with the elongated opening throughout the length of said opening and regulators for the admission of air and gas in the elongated opening.

5. In an inverted incandescent lamp for gas lighting a chimney having two chambers one within the other both surrounding the mixing tube which also forms a Bunsen tube said tube being within the inner chamber, a passage extending from top to bottom of the two chambers and extending through the outer chamber with which it is not connected, to the inner chamber and forming an air inlet and an air intake.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

ARTHUR CUMMING NOAD.

Witnesses:

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H. C. ELLIOTT.