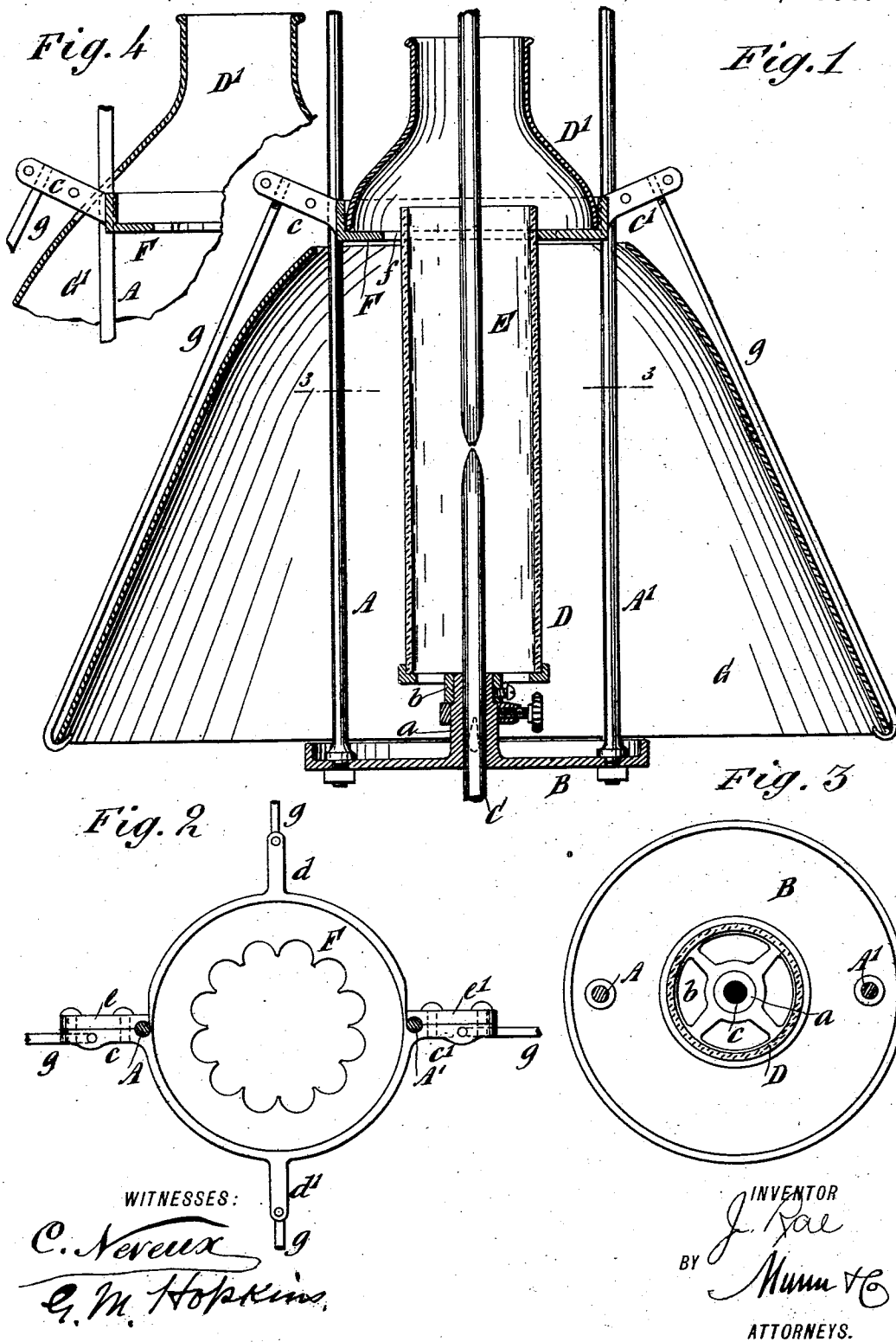


(No Model.)

J. RAE.
ARC LAMP.

No. 572,064.

Patented Nov. 24, 1896.



UNITED STATES PATENT OFFICE.

JOHN RAE, OF NEW YORK, N. Y.

ARC-LAMP.

SPECIFICATION forming part of Letters Patent No. 572,064, dated November 24, 1896.

Application filed November 26, 1895. Serial No. 570,162. (No model.)

To all whom it may concern:

Be it known that I, JOHN RAE, of New York city, in the county and State of New York, have invented new and useful Improvements in Arc-Lamps, of which the following is a full, clear, and exact description.

The object of the invention is to provide an arc-lamp which will permit of throwing the greater portion of the light downward without casting shadows of the carbon or lamp-frame; also to provide a spark-arrester to prevent the escape of sparks and small pieces of hot carbon.

My invention consists in a lamp-frame provided with a holder for supporting a transparent or translucent chimney which incloses the adjacent ends of the carbon-rods; also a chimney-top supported by the lamp-frame and inclosing the upper end of the chimney with an intervening air-space.

It also consists in the combination, with the carbons and chimney, of a flaring shade and reflector for throwing the light downward and under the center of the lamp, all as will be hereinafter more fully described.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a vertical transverse section of a lamp, showing the application of my improvement. Fig. 2 is a plan view of the upper part of the lamp-frame, showing the chimney-top holder. Fig. 3 is a horizontal section taken on line 3 3 in Fig. 1, and Fig. 4 is a vertical transverse section showing a modified form of shade and reflector.

The rods A A', forming a portion of the framework of the lamp, support the plate B, which holds the lower carbon C. To the boss *a*, which holds the lower carbon, is fitted a collar *b*, provided with a flange adapted to support a chimney D, which surrounds the lower carbon C and the upper carbon E. The flange of the collar *b* is perforated to allow of the circulation of air through the chimney.

To the rods A A' is attached an annular plate F, which is provided with arms *c c'*, *d d'*. To the arms *c c'* are secured clamping-pieces *e e'* by means of screws passing through the clamping-pieces into the arms *c c'*. The rods

AA' are received between the clamping-pieces *e e'* and the arms *c c'*.

The annular plate F surrounds the upper portion of the chimney D and supports the chimney-top D', leaving an air-space between it and the upper end of the chimney D. There is an opening *f* between the chimney D and the annular plate F, which permits of a draft of cold air through the said annular plate over the upper end of the chimney D and through the chimney-top D', which extinguishes any sparks that may pass out of the chimney D.

In the arms *c c'* are inserted hooks *g*, which support the flaring shade and reflector G. The said shade or reflector is formed to receive the light of the arc and reflect it to a point under the lamp, thereby destroying any shadow that might be cast by the direct rays of the arc, giving a practically uniform illumination over a surface of from twenty to thirty feet in diameter.

In the modification shown in Fig. 4 the flaring shade and reflector G' is made integrally with the chimney-top D', the shade and reflector being perforated to receive the rods A A' and the arms *c c'*, *d d'*. I may place a piece of wire-gauze or perforated metal over the apertures of the flange of the collar *b* to prevent any possible escape of sparks in a downward direction.

It is obvious that my improvement accomplishes two important results, one of which is the arresting or extinguishing of the sparks, the other being the destruction of the shadow of the lamp.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with the carbon-supporting rods of an arc-lamp, of a chimney supported by the rods and adapted to surround the supported carbons, and a chimney-top into which the upper end of the carbon-surrounding chimney extends, there being an annular air-space between the first-named chimney and the said chimney-top, substantially as specified.

2. The combination with the carbon-supporting rods, of an arc-lamp, of a carbon-protecting chimney supported by the rods, an

annular plate adapted to support a chimney-top and having radial arms, clamping-plates for securing the arms to the rods and rods extended downward from said arms and having their lower ends adapted to engage with the bottom edge of a shade, substantially as specified.

3. The combination with a carbon-lamp frame comprising rods and a lower-carbon-holder plate and having a tubular boss to receive the carbon, a flanged collar on said boss,

a carbon-surrounding chimney supported on said flange, an annular plate clamped to the frame-rods, a chimney-top supported by said annular plate, and downwardly-extending shade or reflector supported from its lower edge by said annular plate, substantially as specified.

JOHN RAE.

Witnesses:

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