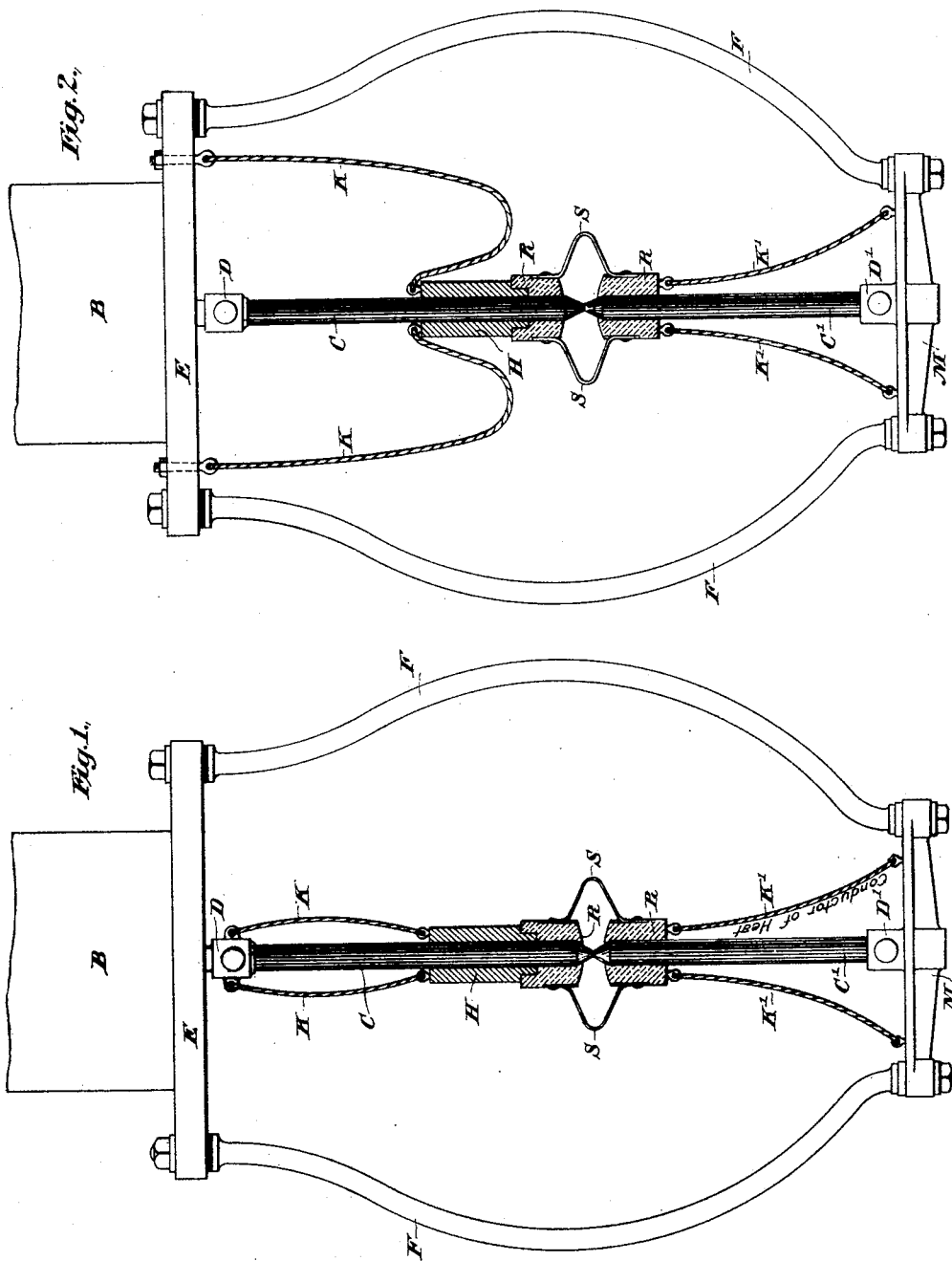


(No Model.)

N. M. GARLAND.
ELECTRIC ARC LAMP.

No. 458,388.

Patented Aug. 25, 1891.



Witnesses
Geo. W. Bruck
Edward Thorpe.

Inventor
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UNITED STATES PATENT OFFICE.

NATHAN M. GARLAND, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO
CLIFT WISE, OF SAME PLACE.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 458,388, dated August 25, 1891.

Application filed December 29, 1890. Serial No. 376,158. (No model.)

To all whom it may concern:

Be it known that I, NATHAN M. GARLAND, a citizen of the United States, residing at New York, county of New York, and State of New York, have made a new and useful Improvement in Arc Lights, of which the following is a specification.

My invention is directed particularly to arc lights of the type in which two or more carbons are fed toward each other in alignment either by the action of gravity or through the medium of various forms of well-known devices, the arc being produced at the juncture of the carbons; and it has for its objects, first, an increased length of life of the carbons; second, the prevention of the combustion thereof through the combined effects of atmospheric air and the intense heat produced at the arc; third, the utilization of means which travel with the moving carbons as they are consumed for decreasing the resistance offered to the electrical current as it passes through the lamp; fourth, the diffusion of heat created at the arc, whereby a decrease in the general temperature of the entire lamp and of the space in its immediate vicinity is effected. I accomplish these objects by the use of the apparatus hereinafter described, but particularly pointed out in the claims which follow this specification.

Referring to the drawings, Figure 1 represents a side elevational view of an arc lamp of well-known form, showing my improvement attached thereto, partly in elevation and partly in section. Fig. 2 represents a similar view of a modified form of my improvement.

In another pending application filed by me in the United States Patent Office of even date herewith, and denominated as "Case A," I have described and claimed, broadly, methods of and apparatus for accomplishing the several results above enumerated, and the present application is directed especially to a modified form of apparatus for accomplishing these general results, so that I make no claim herein to either the methods or generic apparatus for accomplishing such methods, said claims being embraced in the aforesaid application.

Referring to the drawings in detail, a well-known form of arc-light frame is shown, con-

sisting of a base M, top E, and side supporting-rods F, provided with a carbon-holder D' of the usual pattern for sustaining the lower carbon, and a movable carbon-holder D, adapted to sustain the upper carbon, said carbon-holder being geared or connected to regulating and feeding mechanism inclosed in a housing B, such regulating and feeding mechanism being of any preferred form, and the electrical connections through the feeding mechanism to the binding-posts of the lamp being such as is well-known to those skilled in the art.

R represents a pair of caps or hoods made of porcelain or non-friable refractory material, or any similar material which will readily withstand the intense heat of the arc, said caps having interior diameters substantially the same as those of the carbons C and C', and provided with cone-shaped bearing-surfaces adapted to the coned ends of the two carbons, as shown.

H represents a metallic conducting-sleeve fixedly secured to the upper hood R and having substantially the same internal diameter as the carbon C, the upper portion of said sleeve being connected by a pair of conducting-cords K with the upper-carbon carrier D, while the lower cap or hood R is similarly connected by a pair of conducting-cords K' with the metallic base M of the lamp. The two hoods R are connected together by one or more resilient springs s, said springs being of such diameter as to afford little or no obstruction to the light of the arc and of such resiliency as to just permit the carbons to touch under the normal pressure of the upper-carbon holder and its attached parts, so that the entire weight of the upper hood R and its sleeve H will be carried by the springs s and hood R resting on the coned shoulder of the lower carbon.

In the modified form shown in Fig. 2 the upper conducting cords or chains K are connected directly to the frame of the lamp, so as to give large heat conducting and radiating capacity thereto, and it will be noted that there is a slight difference in the construction of the upper refractory hood or cap R, in that its interior diameter is throughout the same as that of the largest diameter of the carbon

C in order to permit said carbon to slide freely therethrough, so that the lower hood or cap R and its connecting-springs S will never be called upon to sustain a greater weight than that of the upper hood R and its attached sleeves H.

I am aware that a protecting cap or hood has heretofore been devised for giving increased length of life to a carbon in an arc lamp, and I make no claim, therefore, broad enough to include this generic feature.

I am also aware that it is old in the art to surround the ends of the electrodes of an arc lamp with a protecting-shield and to combine the electrodes of an arc lamp placed end to end with the shield which surrounds the lower portion of the upper carbon, said protecting-shield being supported by a device suspended upon the lower carbon, the arrangement being such that as the carbons burn away the shield is caused to follow the arc, and I make no claim herein to such a construction.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. An arc light having a protecting cap or

hood for each carbon, said hoods being mechanically connected together by a resilient or yielding support, and provided each with one or more conductors of heat for dissipating or conducting away as far as possible the surplus heat evolved at the arc, substantially as described.

2. An arc light having a pair of protecting caps or hoods, one for each carbon, made of refractory material, in combination with a conducting-sleeve attached to one hood, and conductors of heat connecting the sleeve and both hoods to the frame of the lamp, said hoods being united together by one or more sustaining-springs, substantially as described.

3. A pair of protecting caps or hoods for the carbons of an arc lamp, said caps being united together by a resilient or yielding support and each seated or resting against the coned end of the carbon it protects, substantially as described.

NATHAN M. GARLAND.

Witnesses:

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