(No Model.)

B. F. GREENE.

ELECTRIC ARC LAMP.

No. 588,822. Patented Aug. 24, 1897.

Fig. 1.

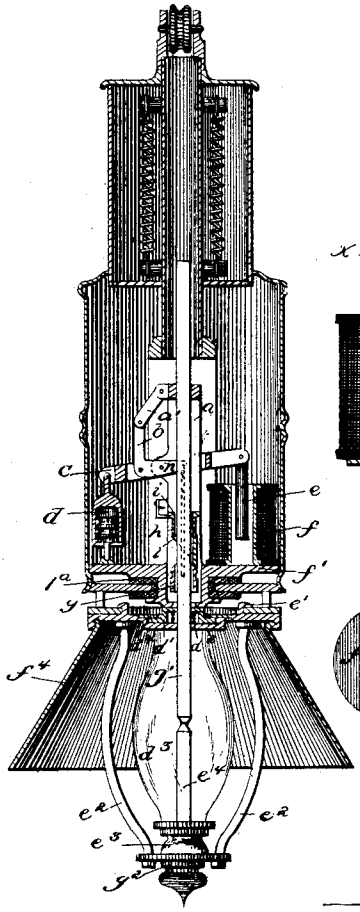


Fig. 3.

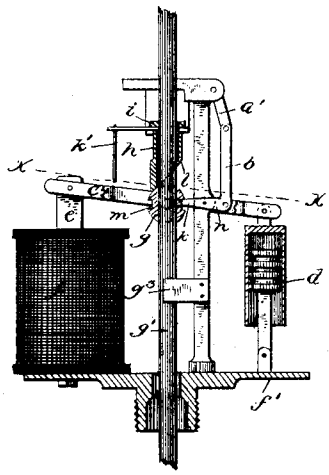


Fig. 4.

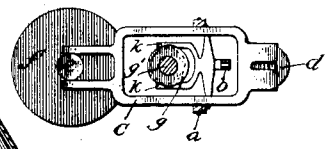


Fig. 5.

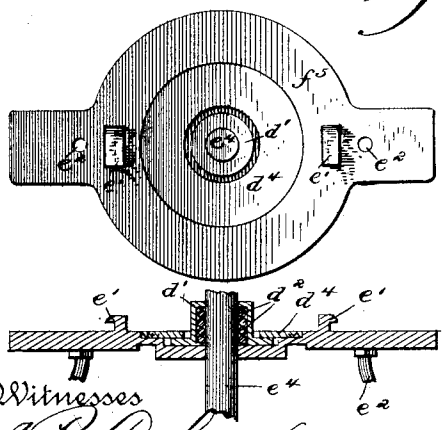


Fig. 6.

Fig. 2.

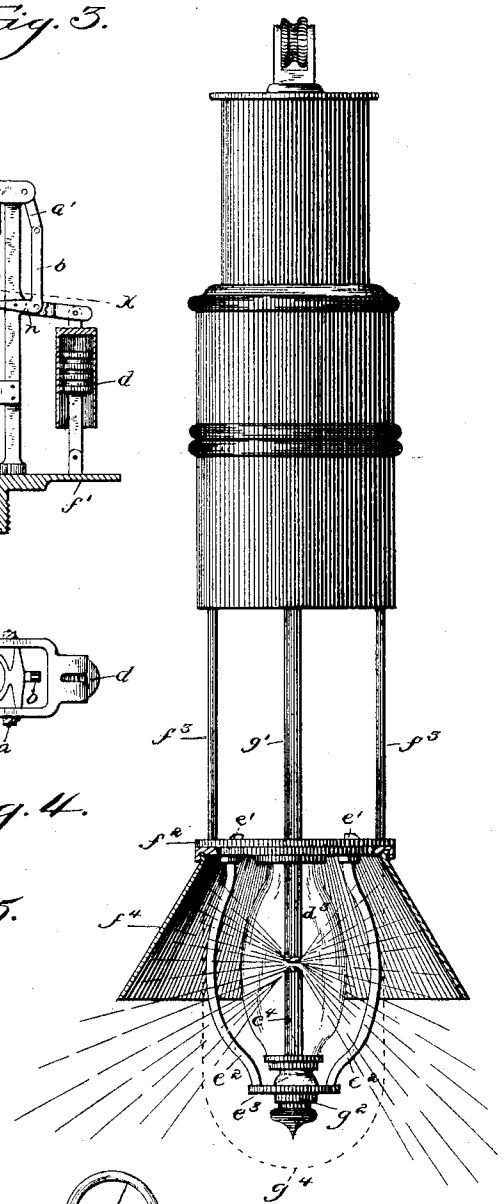
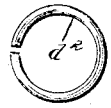


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

BENJAMIN F. GREENE, OF SHERIDAN, PENNSYLVANIA.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 588,822, dated August 24, 1897.

Application filed April 22, 1897. Serial No. 633,296. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. GREENE, a citizen of the United States of America, residing at Sheridan, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Arc-Lights, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in arc-lamps, and has for its object to construct a lamp of this type wherein the gas generated by the combustion of the carbons will be retained and the life of the carbon thereby increased.

A further object of the invention is to provide means for automatically feeding the carbon in order to insure a steady and even light therefrom and to obviate the flickering and fluctuating of the light ordinary discernible in lamps of this character.

A further object of the invention is to provide an arc-lamp that will be applicable for use either within a building or for street use, and a still further object is to construct a lamp extremely simple in construction, strong, durable, effectual in its operation, and comparatively inexpensive to manufacture.

The invention finally consists in the novel construction, combination, and arrangement of parts to be hereinafter more specifically described, and particularly pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like letters of reference indicate similar parts throughout the several views, in which—

Figure 1 is a vertical sectional view of my improved arc-lamp as constructed for indoor use. Fig. 2 is a side elevation of the long lamp as employed for outdoor use, showing globe in section. Fig. 3 is a side view, partly in section, of the feeding mechanism. Fig. 4 is a cross-sectional view taken on the line X X of Fig. 3. Fig. 5 is a plan view of the check-plug, supporting-plate for globe, and hanger carrying the lower carbon. Fig. 6 is a longitudinal sectional view of the same. Fig. 7 is a plan view of one of the packing-rings employed in the check-plug.

Referring now to the drawings by reference-letters, a indicates the inner frame, to the top cross-bar of which is fulcrumed an arm a', having its lower end pivotally secured to an elbow-lever b, which is journaled in a swinging frame c, said frame being in turn pivotally supported by the inner frame a and carries in its one end an armature e, operating in a magnet f, which is supported by a bed-plate f', and on its other end is connected to a dash-pot d. Said elbow-lever b is provided with a bifurcated end, the arms k of which engage within a circumferential groove m, formed in the clutching-ring g on the upper carbon-rod g', said clutching-ring g being provided with a beveled upper face which engages a sleeve h, having a mitered end l and a flange i, which extends downward into close proximity with the swinging frame c.

In Fig. 1 I have shown in dotted lines an elbow-arm n, which connects the elbow-lever b with the clutching-ring g. As in this form of lamp the clutching-ring lies at the bed-plate f', while in a long lamp, which is the construction shown in Fig. 3, the clutching-ring will be at a point above the magnet. The base-plate f' is connected to the plate f^2 by rods f^3, said plate f^2 being adapted to support the shade f^4 and the hanger for the lower carbon, which is accomplished by a ring or plate f^5, carrying lugs e', which engage in grooves formed in the plate f^2, said ring f^5 being turned so as to cause the lugs to engage the ring or plate f^2. Rods e^2 are connected to the ring or plate f^5 and carry the holder or hanger e^3, which supports the lower carbon e^4. Located within the ring f^5 is a check-plug d', from which the carbon passes and has arranged around the carbon a series of packing-rings d^2, which serve to prevent the gas that is generated within the globe d^3 from escaping, and thus increasing the efficiency and life of the carbon, the seat for the check-plug being sufficiently large to admit of this plug adjusting on its seat to keep the upper carbon in perfect contact with the lower carbon, said plug being held in its position by means of an annular ring d^4. Insulation l^a is provided at the plate f', and insulation g^2 is also provided at the base of the holder or hanger e^3, the contact from the frame a to the upper-carbon rod being shown in Fig. 3 at g^3, and in Fig. 2 I have shown in dotted outlines the globe g^4, which sur-

rounds the inner globe when the lamp is used for outdoor lighting. The carbon-rods being secured in their proper positions the armature will be in complete engagement with the magnet and the inclined face of the clutching-ring will be in engagement with the projecting end of the sleeve, which will serve to hold the clutching-ring in firm engagement with the carbon-rod, and as the carbon becomes consumed the rising of the armature operates the oscillating frame and causes the same, while vibrating, to engage the pin k', lifting the sleeve from its close engagement with the clutching-ring and permitting the rod to descend, so as to allow the upper carbon to drop into engagement with the lower carbon, when the rod is again engaged by the ring and the carbon thus fed automatically until the entire carbon is used, thus materially increasing the life of the carbon, as the same is fed evenly and is used until the entire carbon is consumed, and by reason of the check-plug located at the top of the globe d^3 the gas, which is generated within the globe, is prevented from escaping, and is thus consumed to add to the brilliancy of the light.

It will of course be observed that by changing the magnet so as to conform thereto the same mechanism may be employed for an alternating current and the lamp used thereon, and it will also be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In an arc-lamp the combination with a clutching-ring of a sleeve having a mitered end engaging said clutching-ring, and a swinging frame carrying an elbow-lever to engage the ring, said swinging frame connected to an armature and dash-pot to operate the clutching-ring and automatically feed the carbon as required.

2. In an arc-lamp the combination with the inner frame a rod operating in said frame and engaging the carbon, a clutching-ring and sleeve carried by said rod, an elbow-lever having one arm connected to the frame by a link, the opposite end engaging in a circumferential groove in the clutching-ring, a swinging frame pivotally connected to said elbow-lever and electrical means for automatically feeding the carbon, substantially as shown and described.

3. In an arc-lamp the combination of the inner frame, an elbow-lever pivotally attached to said frame, a swinging frame pivoted to the supporting-frame, said elbow-lever fulcrumed to said swinging frame and having a bifurcated end, a rod sliding in said inner frame, a sleeve having a mitered end operating on said rod, a clutch-ring having a circumferential groove engaging the bifurcated end of the elbow-lever and operating to retain the sleeve in position, means whereby the clutching-ring is released to automatically feed the carbon, a lamp-globe surrounding the carbon, a check-plug in the top of said lamp-globe to retain the generated gas, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

BENJAMIN F. GREENE.

Witnesses:
W. H. TIMMERMANN,
GEO. B. PARKER.