

(No Model.)

R. SEGERDAHL.
ELECTRIC ARC LAMP.

No. 559,412.

Patented May 5, 1896.

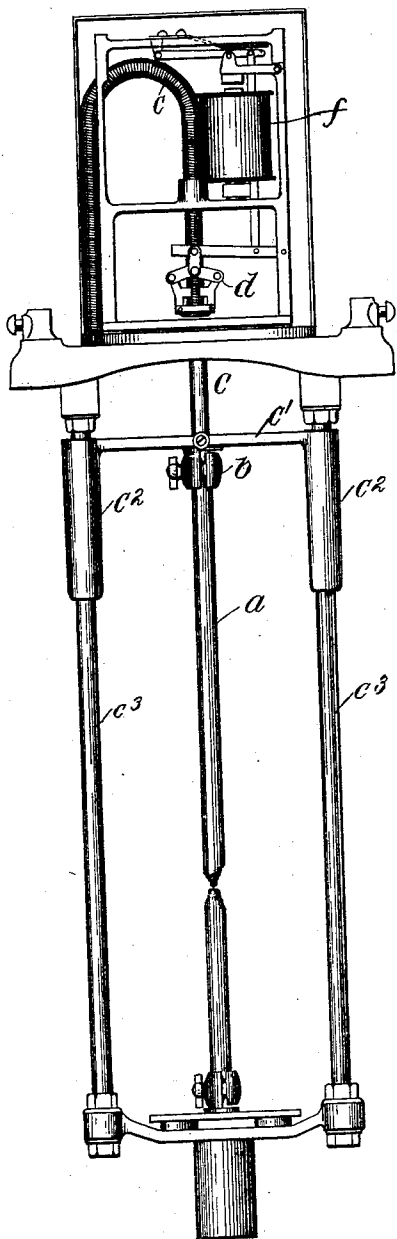


Fig. 1.

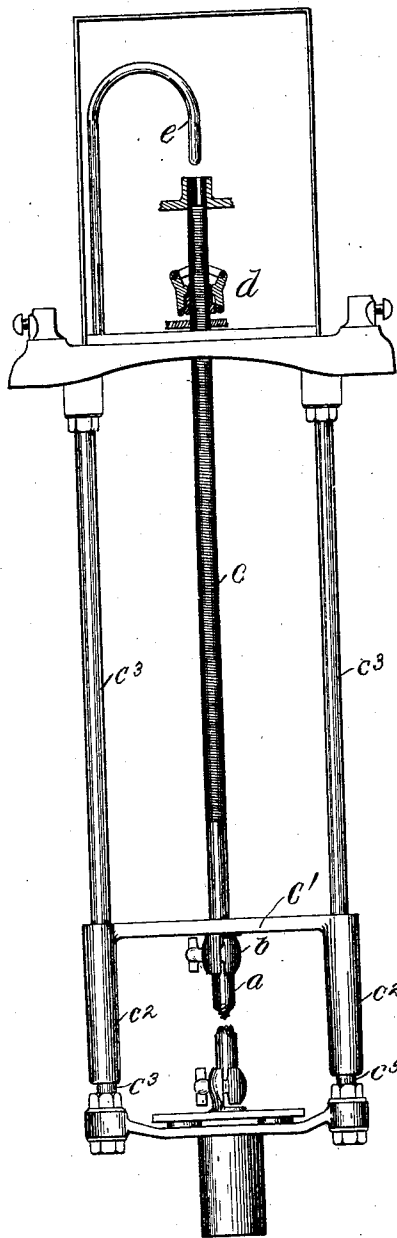


Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

RUDOLPH SEGERDAHL, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN ELECTRIC COMPANY, OF SAME PLACE.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 559,412, dated May 5, 1896.

Application filed September 10, 1895. Serial No. 562,041. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH SEGERDAHL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Flexible Carbon-Rods for Arc-Lamps, (Case No. 1,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to a flexible carbon-rod for arc-lamps, my object being to shorten the length of the lamp by dispensing with the straight carbon-rod, and in consequence with the chimney inclosing the upper end of the carbon-rod. Furthermore, my object is to construct a flexible carbon-rod that may be readily substituted for the straight carbon-rods now in use without necessitating the alteration of the clutch and feeding mechanism of the lamp.

In arc-lamps as generally constructed the upper carbon is suspended from the lower end of a straight carbon-rod which passes through a clutch operated by the feeding mechanism, the clutch controlling the movement of the carbon-rod to effect the regulation of the arc. When the carbon-rod is in its uppermost position, its upper end extends for a considerable distance above the body of the lamp, some six or eight inches, and a chimney inclosing the upper end of the carbon-rod is mounted upon the casing which surrounds the feeding mechanism.

It is the object of my invention to shorten the length of the lamp by dispensing with the chimney and the straight carbon-rod which necessitates its employment, and in accordance with my invention a flexible carbon-rod is provided, to the lower end of which the upper carbon is secured, the flexible carbon-rod passing through the clutch in the same manner as the straight carbon-rod heretofore employed. A guide or support is provided, about which the upper end of the flexible carbon-rod is adapted to be bent.

In the form of my invention which I preferably employ the flexible carbon-rod is formed by winding wire into a spiral or helical coil, the coil having the diameter of the usual carbon-rod, whereby it may be readily

engaged by the clutch. A guide or support is provided, preferably in the form of a bent rod, the carbon-rod being adapted to surround and move longitudinally upon the bent rod. By this construction the carbon-rod is maintained at all times within the casing inclosing the feeding mechanism.

Referring to the accompanying drawings, Figure 1 is a view in elevation of an arc-lamp embodying my invention, the carbon-rod being shown in its elevated position. Fig. 2 is a similar view showing the carbon-rod in its lowered position.

Like letters refer to like parts in both figures.

The upper carbon *a* is secured in a clamp *b*, carried upon the end of the flexible carbon-rod *c*, which passes through the feeding-clutch *d* and is bent about the J-shaped guide or supporting-rod *e*. Upon the lower end of the carbon-rod is provided a cross-head *c'*, carrying guides *c² c²*, adapted to slide upon the side rods *c³ c³* of the lamp. As the carbons burn away the clutch *d* is operated by the feeding and regulating mechanism *f* of the lamp to permit the descent of the upper carbon *a*, the flexible carbon-rod *c* thus moving longitudinally upon the guide *e*. The carbon-rod *c* is formed from wire wound into a spiral or helical coil of a size to fit the clamp or clutch *d*. The surface of the carbon-rod is preferably filed away slightly, so that a more or less cylindrical surface may be presented to the clutch, whereby the rod may be more readily engaged. When the carbon-rod is in its uppermost position, it will be noted that the maximum length of the rod is bent about the guide *e*, and as the carbon-rod descends the portion of the rod which is bent about the guide decreases. In consequence the friction between the flexible carbon-rod and its support is greatest when the lamp begins to burn, and as the weight of the upper carbon decreases, due to burning away, the friction opposing the downward movement of the carbon also decreases. This feature is advantageous in promoting the uniformity of the arc. When the carbon-rod is made in the form of a coil or helix, the rod possesses more or less resiliency, and this further contributes to the smooth burning of the lamp.

Instead of making the guide *e* J-shaped, it may be made in any other curved form, as may be desired, and instead of having the flexible carbon-rod move upon the exterior of the guide the guide may be otherwise disposed.

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

10 1. In an arc-lamp, the combination with a flexible carbon-rod, of a clutch through which said carbon-rod is passed and by means of which the same is fed forward, and a guide or support around which the flexible carbon-rod is adapted to be bent; substantially as described.

15 2. In an arc-lamp, the combination with a

clutch adapted to receive a round carbon-rod, of a flexible carbon-rod having a round cross-section and adapted to pass through said clutch, and a guide or support around which said carbon-rod is adapted to be bent; substantially as described.

3. In an arc-lamp, the combination with a flexible carbon-rod formed from a spirally-coiled wire, of a guide or support around which the flexible carbon-rod is adapted to be bent; substantially as described.

In witness whereof I hereunto subscribe my name this 27th day of August, A. D. 1895.

RUDOLPH SEGERDAHL.

Witnesses:

JOHN W. SINCLAIR,

W. CLYDE JONES.