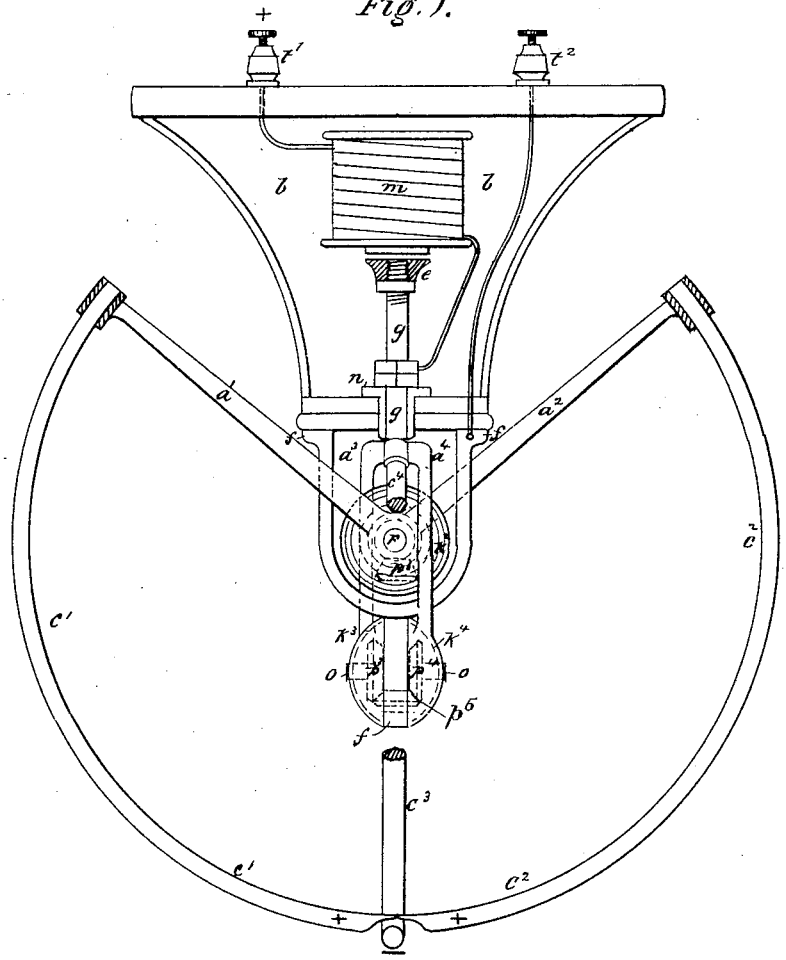
(No Model.) 2 Sheets—Sheet 1.

C. F. HEINRICHS.

ELECTRIC LAMP.

No. 266,363. Patented Oct. 24, 1882.

Fig. 1.



— WITNESSES —

Philip M. Justice

Allen S. Ives

— INVENTOR —

Charles F. Heinrichs.

(No Model.)

2 Sheets—Sheet 2.

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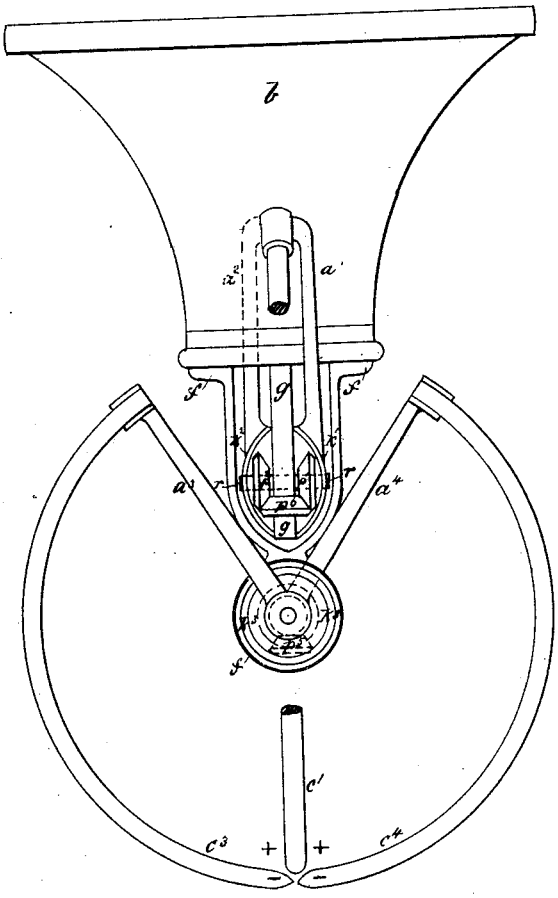
Fig. 2.



WITNESSES

Philip M. Justice

Allen P. Jones

INVENTOR

Charles F. Heinrichs

UNITED STATES PATENT OFFICE.

CHARLES F. HEINRICHS, OF LONDON, ENGLAND.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 266,363, dated October 24, 1882.

Application filed March 23, 1882. (No model.) Patented in France May 13, 1879, No. 130,646; in England November 11, 1879, No. 4,589, and in Germany May 21, 1880, No. 14,648.

To all whom it may concern:

Be it known that I, CHARLES FREDERICK HEINRICHS, a citizen of the United States, temporarily residing at London, England, have invented certain new and useful Improvements in Electric Lamps, of which the following is a specification.

My invention consists of the combination, in and with an electric lamp in which four movable circular carbon pencils are employed, of the parts or mechanism for automatically operating and regulating said lamp, the invention being an improvement in the mechanical details of the lamp described in my British specification, No. 4,595, of 1878.

To clearly explain my present invention, reference is made to the accompanying drawings and letters of reference marked thereon.

Figure 1 represents an elevation of a lamp. Fig. 2 represents a side elevation of Fig. 1.

The two circular carbon pencils c' c^2 are held at their upper ends by the two metal conducting-arms a' a^2, their lower ends being kept in contact with each other by the weight of said arms. The two circular carbon pencils c^3 c^4 are held and kept in contact with each other by the two metal conducting-arms a^3 a^4. To the ends of the four metal arms are secured four beveled pinions, p' p^2 p^3 p^4, which are surrounded by the four metal covers k' k^2 k^3 k^4, which prevent dust being carried into the beveled pinions. Between pinions p' p^2, I keep in gearing a third pinion, p^6, which will prevent the arms a' a^2 from falling unequally, and between p^3 p^4, I place pinion p^5 for the purpose of equalizing the fall of arms a^3 a^4. The pinions p^5 and p^6 not only act as above described, but also keep the crossing-point of the two sets of carbons constantly at the same point, although said sets are entirely independent of and insulated from each other. The one set of metal arms a^3 a^4, with their connected pinions p^3 p^4, are pivoted on the common center o in the frame f f, which is secured to but insulated from the lamp-base b. The other set of arms, a' a^2, with their pinions p' p^2, are pivoted on their common center r in the movable frame g. Said frame passes through the lamp-base and terminates at its upper extremity in the armature e. This armature, when attracted to the electro-magnet m, will raise the one set of carbons, c' c^2, from the second set of carbons, c^3 c^4, as hereinafter described. When no current passes through the lamp both sets of carbons rest in contact at their crossing-point. When a current is sent through the lamp in order to start the light the positive current enters the lamp through the terminal t', passes through the electro-magnet m, and to the metallic conducting-boss n, which is in contact with the movable frame g, and from thence into and through the arms a' a^2 to the carbons c' c^2. The negative current enters the lamp through the terminal t^2, thence to and through the frame f f, metal arms a^3 a^4, and carbons c^3 c^4. When the circuit is complete and the arc is formed the electro-magnet m will attract and draw up armature e and its connected set of carbons c' c^2. So long as the current passes through the lamp the armature e will continue to be attracted and held up by the electro-magnet m, and the arc will be maintained at the same distance between the two sets of circular carbon pencils at their crossing-point, the carbons being automatically fed by the weight of the arms a', a^2, a^3, and a^4.

Instead of the magnet m, a solenoid may be used.

Having described the nature of my invention and how the same may be practically employed, what I claim, and desire to secure by Letters Patent, is—

In an electric lamp in which four movable circular carbons are employed, the combination, with the two sets of carbons, of the carbon-holder, arms, gear, and regulating-pinions, frame, armature, and magnet, all as and for the purposes described.

CHARLES F. HEINRICHS.

Witnesses:

PHILIP M. JUSTICE,

ALLEN P. JONES.