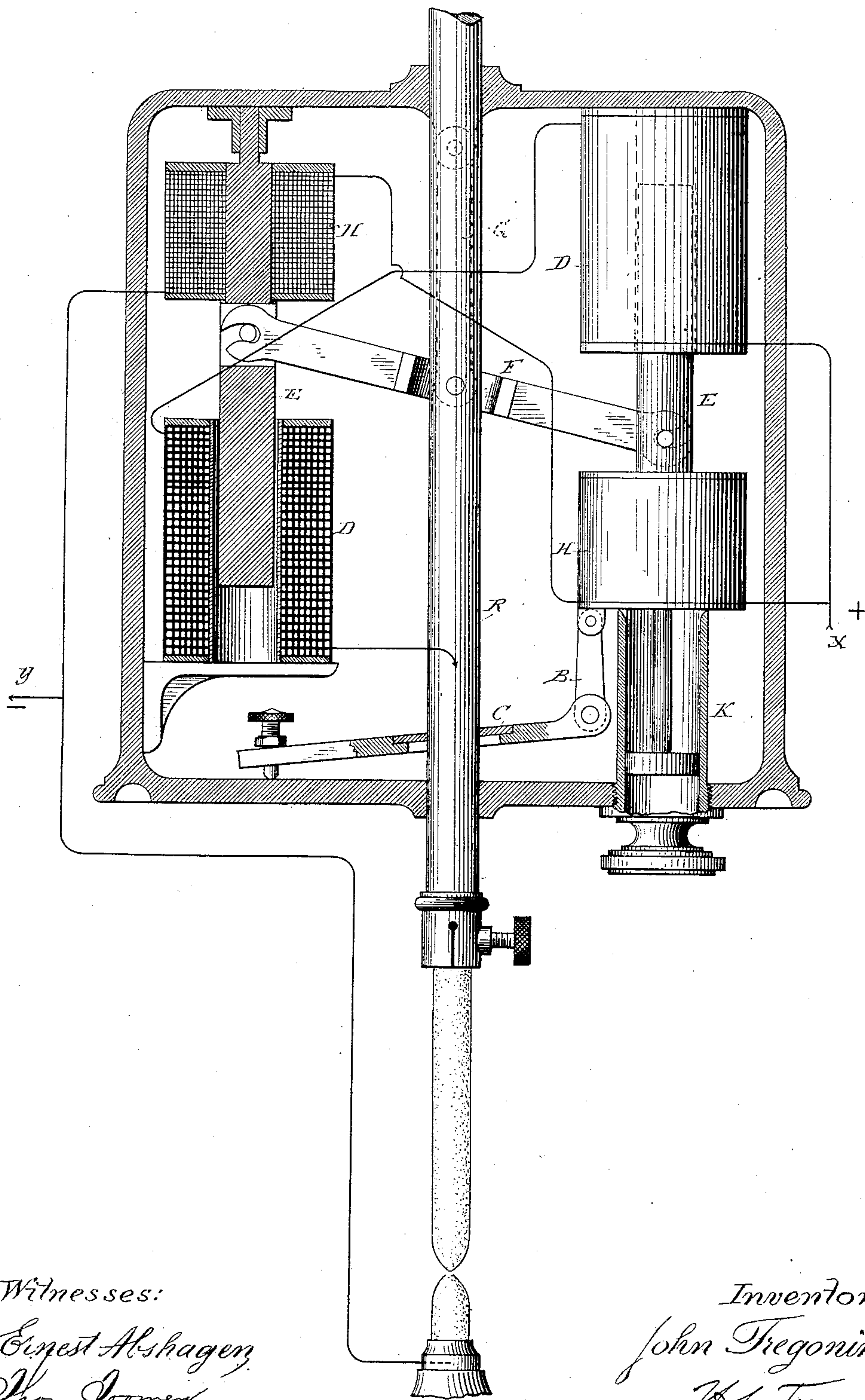


(No Model.)

J. TREGONING.
ELECTRIC ARC LAMP.

No. 336,176.

Patented Feb. 16, 1886.



Witnesses:
Eugene Alshagen
Chas. Dooney

Inventor:
John Tregoning
By his Attorney: W. B. Townsend

UNITED STATES PATENT OFFICE.

JOHN TREGONING, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE SCHUYLER
ELECTRIC LIGHT COMPANY OF NEW YORK.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 336,176, dated February 16, 1886.

Application filed January 11, 1884. Serial No. 117,114. (No model.)

To all whom it may concern:

Be it known that I, JOHN TREGONING, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Electric-Arc Lamps, of which the following is a specification.

My invention relates to electric arc lamps, and is designed more especially to improve the sensitiveness and certainty of action of the magnet system by which the carbon-adjusting or feed-controlling mechanism is operated.

My invention consists in a feed-regulating magnet system composed of a main-circuit coil or helix, a movable core therefor connected to the feed mechanism, and a high-resistance derived-circuit coil wound upon an extension of said core exterior to the main circuit coil or helix and carried by the core. In the operation of this system the main-circuit coil draws the core up within it to separate the carbons, while the derived-circuit coil, instead of exerting any positive pull upon the magnet system, simply counteracts the magnetism induced in the core by the main-circuit coil, so that gravity or a spring may pull the core down out of said coil and produce the feed.

In my system the derived-circuit coil can under no circumstances exert a pull upon the core or armature, and my lamp is therefore free from the difficulty attaching to some lamps in which upon an abnormal arc the derived-circuit coil may carry a current sufficient to entirely overbalance the effects of the main-circuit coil, and may itself in addition exert a sufficient pull on the magnet system to keep the carbons apart when it should permit them to feed. This is a difficulty belonging to lamps in which the main and derived circuit coils are stationary and wound over one another upon the same core, or in which the cores of the main and derived circuit helices move with relation to one another, as well as to other systems.

In my system, when no current or a very weak current passes in the main-circuit coils, the derived-circuit coils are powerless to produce any movement of the magnet system no matter how strong a current they may carry,

and under no circumstances do they act positively on the system.

In the accompanying drawing, I have shown in elevation a lamp embodying my invention.

R indicates the usual carbon rod or carrier, and C a clutch, or any other suitable feed-regulating mechanism, that separates the carbons when moved in one direction and permits them to feed toward one another when moved in the opposite direction. Said clutch or clamp is connected by a link, B, with the magnet system, and is raised and lowered by the latter to produce the desired movements of the rod R. The magnet system is herein shown as virtually duplicated; but one portion or side thereof may be dispensed with.

D D indicate main or principal circuit coils in the circuit of the carbons, as indicated, and E E movable cores therefor supported on opposite ends of a lever, F, pivoted on a link, G, hung from the lamp frame or box. Upon magnetic extensions of the cores E E are wound the usual derived-circuit coils, H H, in a derived circuit of high resistance around the carbons. These coils are supported by the cores and move with them. The link B moves with the magnet system through attachment to the head of a derived-circuit coil, as indicated.

K indicates a suitable dash-pot, to check sudden movements of the magnet system. The weight of the cores and other parts assisted, if need be, by a spring holds the mechanism normally in the position shown to permit the carbons to come together. In this position the coils H are evidently powerless to produce any effect of themselves upon the mechanism.

When current passes, the coils D act upon their cores, draw them within their centers, and lift the carrier to form the arc. The current in the derived-circuit coils tends to neutralize the magnetic condition of the cores, and thus determine the distance to which the magnet system shall lift the controlling mechanism. When the arc lengthens abnormally, the effect of coils H increases, and the weight of the parts or a spring retracts the cores and produces a feed. If the arc become unduly attenuated, the current in coils D becomes unduly weak, and that in coils H very strong; but as the lifting power depends primarily on

the coils D, and the relation of the coils H to the cores never changes, since they move with them, the said coils H cannot exert a lifting action that would tend to keep the carbons
5 separated, and the only effect can be to permit the weight or other retractor to perform its function of pulling the cores out of the main-circuit coils and allowing a release of the carbon.

10 It is obvious that the coils and core to the left of the carrier in the drawing might be dispensed with.

What I claim as my invention is—

The combination, in an electric arc lamp,

of a main-circuit coil or helix, a movable core 15 therefor, feed-regulating mechanism connected with said core, and a high-resistance derived-circuit coil carried and wound upon a portion of the core extending outside of the main-circuit coil or helix, as and for the purpose de- 20 scribed.

Signed at New York, in the county of New York and State of New York, this 24th day of December, A. D. 1883.

JOHN TREGONING.

Witnesses:

THOS. TOOMEY,
LEONARD MORSE.