

A. C. FERGUSON.

ELECTRIC LIGHTING APPARATUS.

No. 334,366.

Patented Jan. 12, 1886.

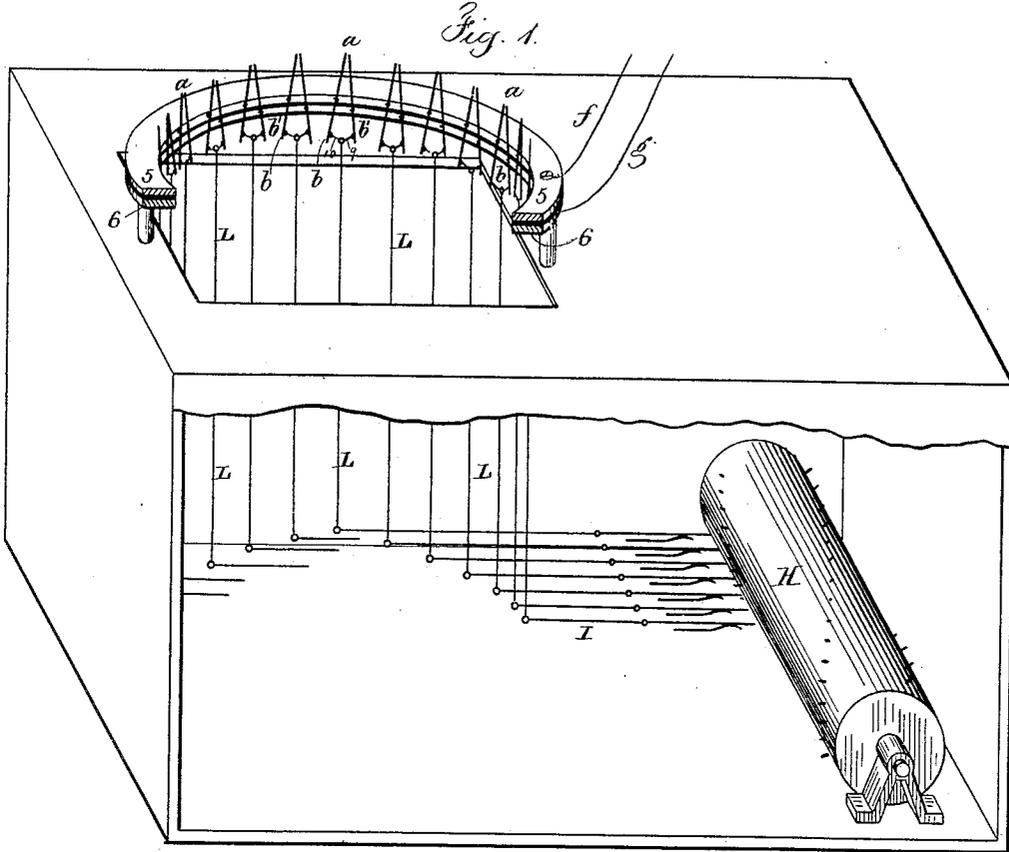


Fig. 3.

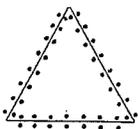


Fig. 4.

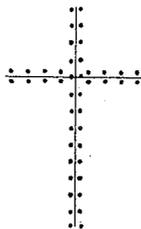


Fig. 5.

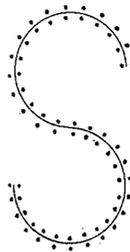


Fig. 7.

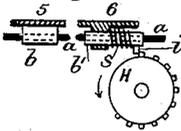
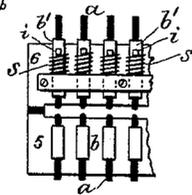


Fig. 8.



Witnesses

Chas. A. Smith
J. Stacy

Inventor

Arthur C. Ferguson
per Lemuel W. Ferrell

cut

(No Model.)

2 Sheets—Sheet 2.

A. C. FERGUSON.

ELECTRIC LIGHTING APPARATUS.

No. 334,366.

Patented Jan. 12, 1886.

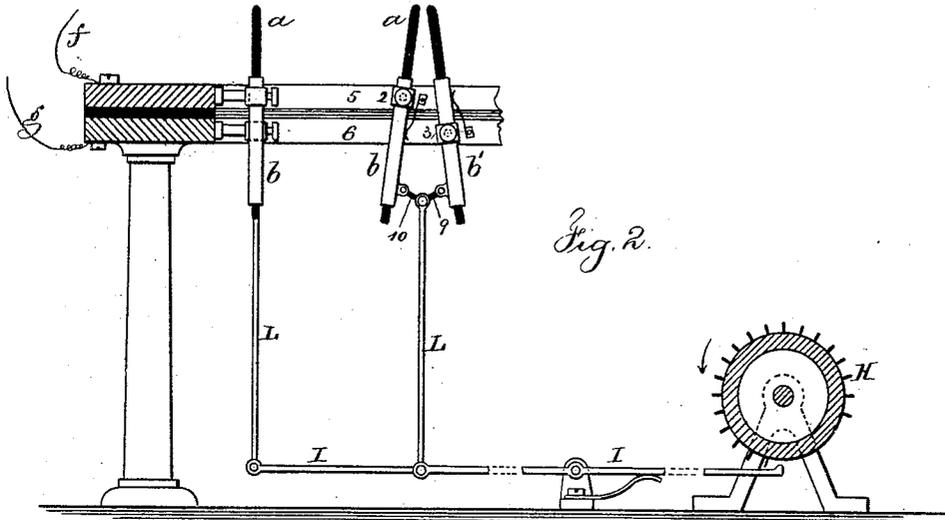


Fig. 2.

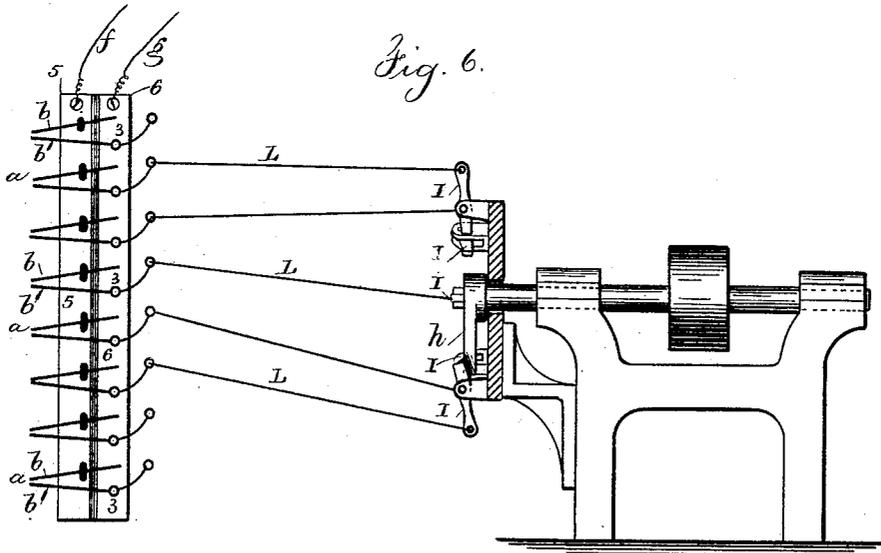


Fig. 6.

Witnesses

Chas. H. Smith
J. Stair

Inventor

Arthur C. Ferguson.

per Lemuel W. Ferrell atty

UNITED STATES PATENT OFFICE.

ARTHUR C. FERGUSON, OF SARATOGA, NEW YORK.

ELECTRIC-LIGHTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 334,366, dated January 12, 1886.

Application filed October 12, 1885. Serial No. 179,607. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR C. FERGUSON, of Saratoga, in the county of Saratoga and State of New York, have invented an Improvement in Electric-Light Appliances for Signs, of which the following is a specification.

The object of this invention is to obtain a series of flashes between carbon or other electrodes, and to arrange these in a circle or in zigzag lines, or in lines corresponding to letters of the alphabet, or to designs, so that by the flashes of electricity words or designs may be produced for advertising or ornamental purposes.

I mount the electrodes in pairs and move one or both of them for making and then breaking contact and developing sparks, and I arrange these pairs in the lines to be illuminated and close and separate the same successively along such lines, so that the flashes follow each other with sufficient rapidity to cause a line of illumination and produce an image on the optic nerve.

In the drawings, Figure 1 is a diagram illustrating my improvement, and Fig. 2 is a vertical section of the cylinder and of the holder for the electrodes, the connecting mechanism and some of the holders being in elevation, and Figs. 3, 4, and 5 represent some of the shapes in which the electrodes may be arranged. Fig. 6 is a section representing the connections from a range of electrodes to levers operated by a revolving arm. Fig. 7 is a section, and Fig. 8 is a rear elevation showing a range of stationary electrodes and a range of sliding electrodes.

The electrodes *a* are by preference of carbon held in the tongs or levers *b b'*, and they are kept out of contact normally by the action of gravity or by springs, and the levers *b b'* may both swing upon one or two pivots; or one lever may be fixed and the other movable.

I employ automatic mechanism for closing and then separating the electrodes and drawing the spark, and for this purpose I prefer a barrel, *H*, with pins projecting from its surface, and levers *I* between such pins and the levers of the electrodes, and cords or other connections, *L*, so that as the levers are moved in succession the carbons or electrodes are brought together and then separated and the spark produced.

I remark that the electric conductors *f* and *g* are led to the rings or plates 5 and 6, that are insulated, so that the current passes to the respective levers and electrodes, and the action of the automatic moving devices is to close contact and then instantly separate the electrodes, in order that the sparks may be developed in succession and the letter, figure, or design illuminated or formed by the sparks between the ranges of rapidly-moving electrodes. Usually it is the most convenient to allow the electrodes to be drawn apart by the weight of the levers, and when either lever is lifted by one of the pins upon the spring-barrel the electrodes close into contact with each other by the action of their weight or a spring, and when the pin upon the spring-barrel *H* passes clear of the end of the lever *I* the weight of the lever instantly separates the electrode and causes the spark to be developed.

I have represented in Fig. 2 carbon-holding levers and their respective strings and actuating devices made in the form which I find advantageous, the levers *b* and *b'* being pivoted, respectively, at 2 and 3 upon the insulated conducting bars or strips 5 and 6. The weight of the carbon electrodes will cause them to fall into contact with each other as soon as the lever *I* is raised, and when the lever falls the cords 9 and 10, or non-conducting bars acting as toggles, will separate the carbons and draw the spark.

Fanciful and attractive figures can be obtained by the electric-light flashes by arranging small carbon-holders in the desired lines of illumination, as illustrated by the diagrams, Figs. 3, 4, and 5.

If desired, one of the electrodes may be a strip of sheet metal and the other electrodes swing into and out of contact with the same, and I prefer to employ a range of levers in a circle, as seen in Fig. 6, with a central arm, *h*, having an inclined or beveled end that moves the levers *I* in succession, and these levers are connected by strips *L* or otherwise with the swinging electrodes *b'*.

The carbon-holders are to be constructed in any desired manner. Usually they will be tubular, of a size to allow the carbons to be slipped through them, as shown.

When desired, the plates 5 and 6, that support the electrodes, may be placed edge to

edge, with an opening between them of the shape desired for the line of illumination, as seen in Figs. 7 and 8, and the carbon-holders *b b'* are upon the backs of these plates. The holders *b* may be stationary and the holders *b'* slide through loops upon the plate 6, there being projections *i* upon the holders *b'*, against which the pins upon the barrel H act in succession to force the carbons together, and then the springs S separate the same and draw the sparks.

In cases where electric lamps have been arranged at distances apart they have sometimes been brought into action by closing separate circuits in succession by a rotating device; but the mechanism did not move the light-giving electrodes or carbons.

I claim as my invention—

1. A series of light-giving electrodes ar-

ranged adjacent to each other in the form of letters or figures, in combination with automatic mechanism, substantially as specified, for closing and separating the electrodes successively, substantially as set forth.

2. The combination, with a revolving cylinder having pins, of levers acted on by said pins, carbons and carbon-holders in pairs, and connections between the respective levers and carbon-holders for moving one or both electrodes successively and producing ranges of flashes in straight or curved lines, substantially as set forth.

Signed by me this 9th day of October, A. D. 1885.

A. C. FERGUSON.

Witnesses:

GEO. T. PINCKNEY,
WILLIAM G. MOTT.