

E. L. BERRY & F. HARRISON.
APPARATUS FOR USE WITH ELECTRICALLY ILLUMINATED SIGNS
OR ADVERTISEMENTS.

No. 540,480.

Patented June 4, 1895.

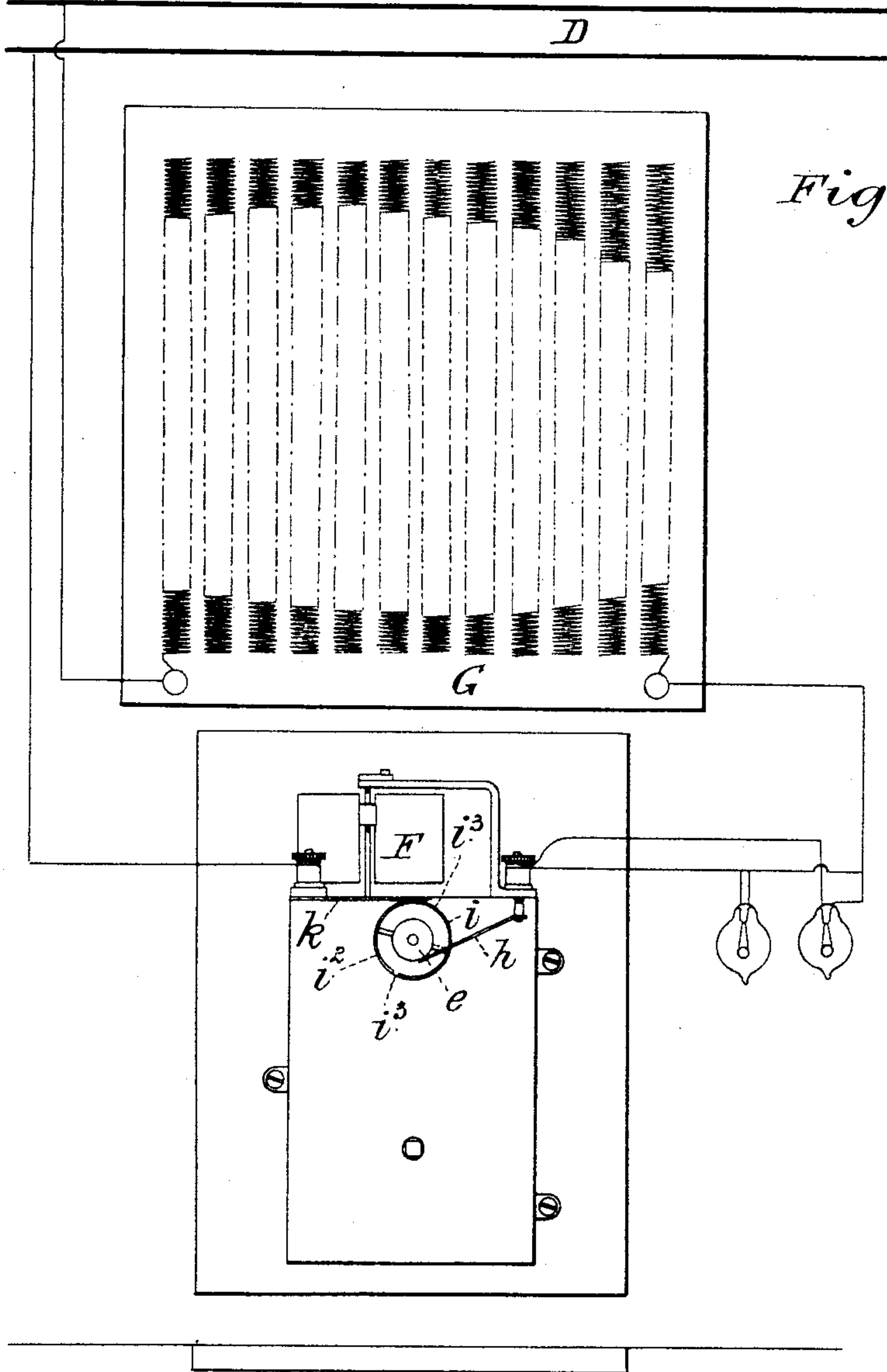


Fig. 2.

Witnesses

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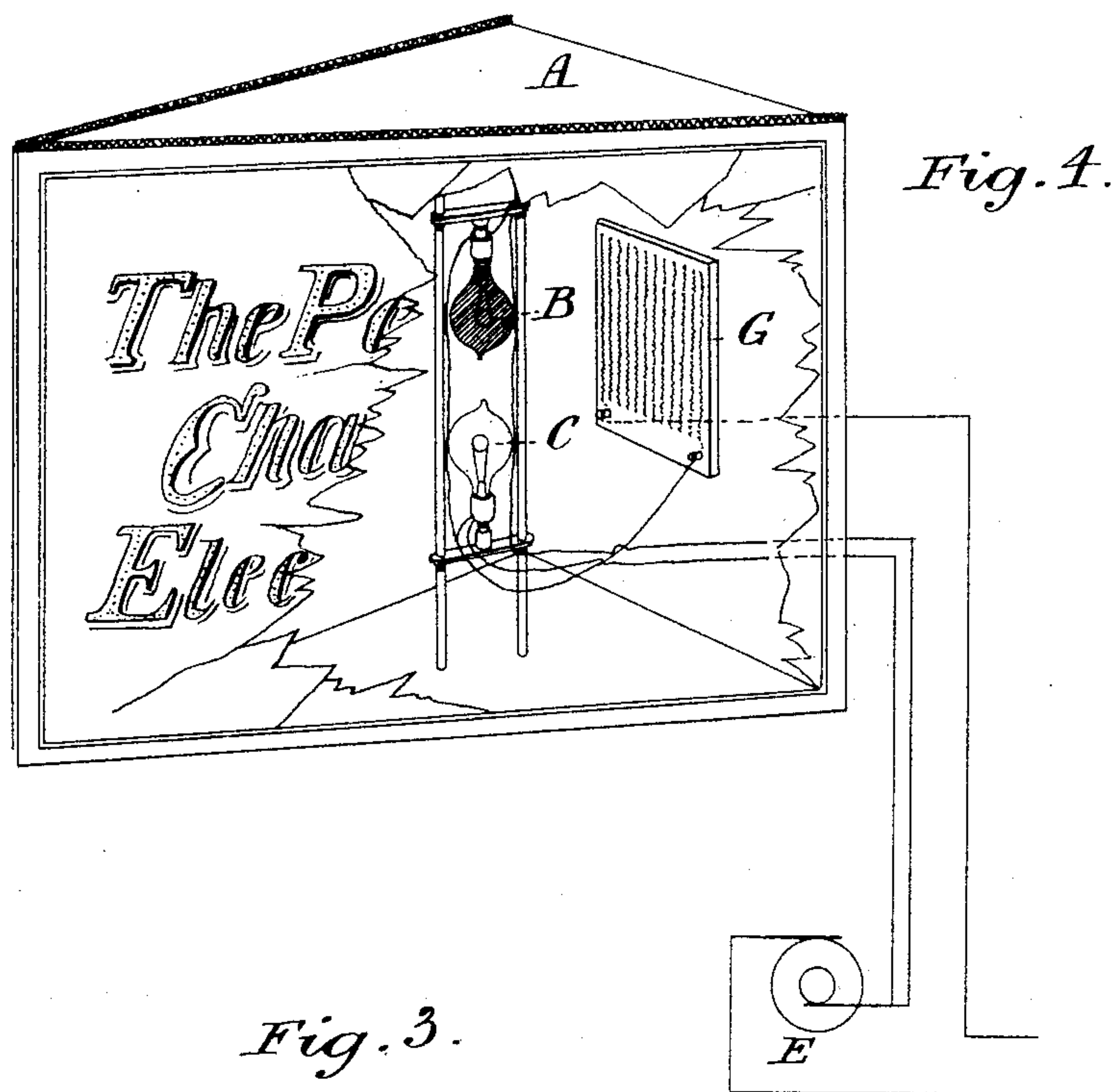


Fig. 3.

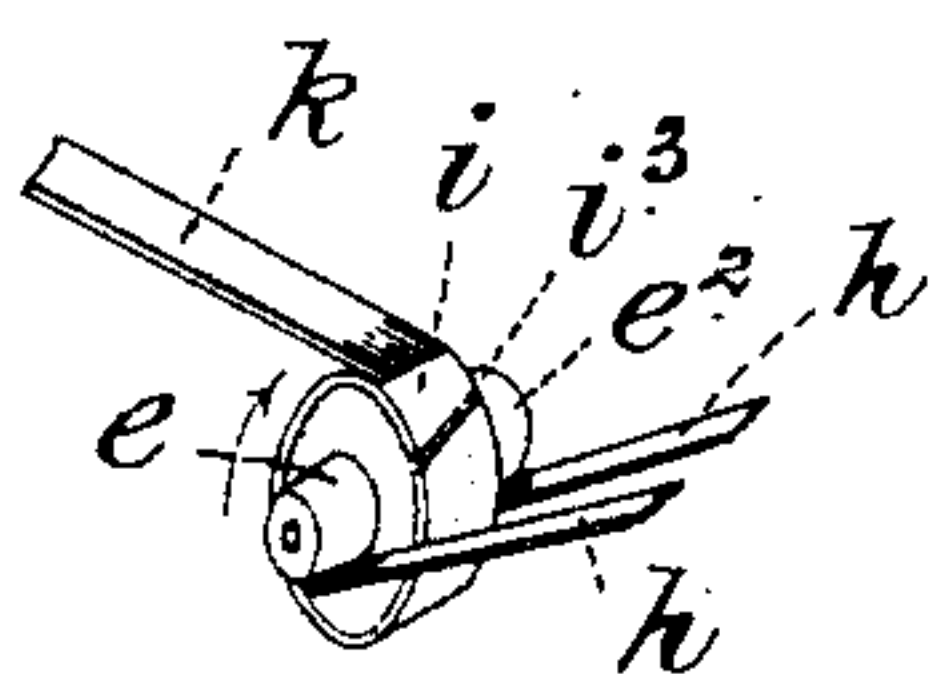
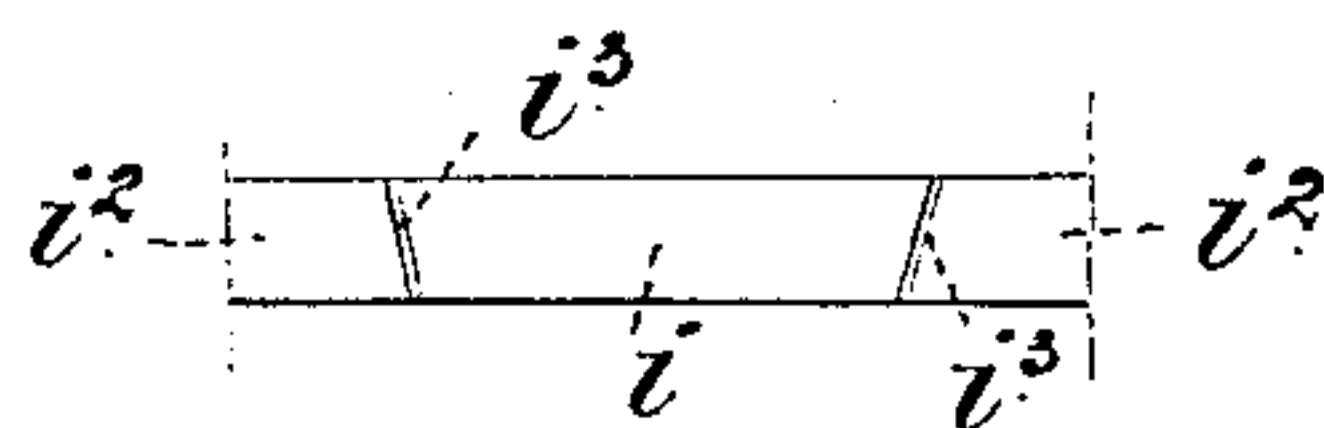


Fig. 2^A.



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UNITED STATES PATENT OFFICE.

ERNEST L. BERRY AND FREDERICK HARRISON, OF LONDON, ENGLAND.

APPARATUS FOR USE WITH ELECTRICALLY-ILLUMINATED SIGNS OR ADVERTISEMENTS.

SPECIFICATION forming part of Letters Patent No. 540,480, dated June 4, 1895.

Application filed November 21, 1894. Serial No. 529,469. (No model.)

To all whom it may concern:

Be it known that we, ERNEST LOWER BERRY and FREDERICK HARRISON, electrical engineers, subjects of the Queen of Great Britain and Ireland, and residing at Lyric Chambers, Whitcomb Street, in the county of London, England, have invented certain Improvements in Apparatus for use with Electrically-Illuminated Signs or Advertisements, or in other cases where frequent changes of electric circuits are to be made, of which the following is a specification.

The object of our invention is to provide a simple and efficient arrangement whereby the requisite changes of contact which are necessary to be made in electrically illuminated signs or advertisements in which differently colored lamps are lighted and extinguished and in other cases where frequent changes of electric circuits are to be made can be effected without the rapid burning of the contacts owing to heavy sparking which has hitherto been an objection in many instances where solid metallic contacts in series with the main circuit are made and broken at frequent intervals.

According to our invention we provide the circuits which are to be made and broken alternately with a switch so constructed and operated that the contact for the one circuit is made before the contact for the other circuit is broken and we interpose a resistance in the circuit as hereinafter described.

The following is a description of an arrangement according to our invention as applied for instance to an electrically illuminated sign or advertisement in which changes from one color to another are effected alternately.

Figure 1 is a diagram showing the general arrangement of the apparatus. Fig. 2 is a plan of the clockwork-motor and switch, and Fig. 3 is a perspective view of the switch. Fig. 4 shows an arrangement of the apparatus in combination with a transparent case on which the advertisement is placed, the transparent or semi-transparent sign or advertisement which is to be displayed forming the front or side or any suitable portion or portions of any suitably-shaped box or casing A, provided inside with two lamps B and

C, one being of the one color and the other of the other color.

One terminal of each of the lamps is connected with the main D through the resistance G and the other terminals are in electrical connection by the brushes *h* with two circular contact pieces *e e*² which are respectively connected to the two contact pieces *i i* upon the periphery of the wheel or rotating switch E which is rotated by a clockwork or other motor F. A brush or the like *k* bears upon the said periphery this brush being connected to the other main, or the resistance may be between the switch and the main as may be most convenient. The said resistance is such as to limit the energy passing through it to the amount required by one lamp or circuit. The contact pieces *i i*² on the periphery of the wheel are separated by insulating strips or spaces *i*³ which are so inclined or arranged that the brush *k* comes into contact with the succeeding contact piece before it leaves the preceding one. By reason of this the current passes through one lamp or the other (B or C) in accordance with which contact piece (*i* or *i*²) the brush *k* is in contact but when the brush *k* is changing from one contact piece to the other owing to the brush then being in contact with both contact pieces *i* and *i*² the current is divided so that while the complete change from one contact piece to another is being made the said current passes through both lamps B and C and as when the change from the one contact piece to the other is finally completed the breaking is only that of a current equal to the difference between the divided current passing through two lamps and the full current passing through one lamp the spark made at the break of each contact is very small.

The insulating strips or spaces *i*³ which separate the contact pieces are preferably arranged in opposite directions as shown on the development of the periphery in Fig. 2^a so that the break in passing from one strip whereby the wear of the brush will be uniform is made at the side of the brush opposite to that at which the break is made in passing from the other strip.

The box containing the lamps and with the

transparent or semi-transparent advertisement or sign may be of any suitable shape. For instance it may have a doubly inclined or wedge shaped back diverging toward the
5 said front, the lamps being placed one above the other at the angle formed by the inclined surfaces, which are used as reflectors to disperse the light from the lamps, the lamps having in front of them if desired a shield
10 which will further disperse the light and prevent its direct radiation on to the transparent or semi-transparent front which would give unequal illumination of the transparency; but we do not limit ourselves to any
15 particular arrangement or shape of the box or sign or other device with which our invention is used.

Although we have shown but one lamp of each kind they may of course be in sets of
20 any suitable number, and although we have described only two kinds of lamps there may be three or more different kinds the number of circuits thereto and of contact pieces on the switch being made to correspond.

25 Having now particularly described and as-

certained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is—

1. The combination with an electric sign or the like, of two or more circuits, and a switch 30 provided with contacts arranged to break contact with the brush alternately at opposite edges of the brush, all substantially as hereinbefore described.

2. The combination of a brush with a rotating switch on which the brush rests, the said switch having on its periphery contact pieces with insulating strips or spaces between them, the said spaces or strips being inclined and running in opposite directions 40 to each other successively, substantially as and for the purposes set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

E. L. BERRY.
F. HARRISON.

Witnesses:

WILLIAM F. UPTON,
WM. JOHN WEEKS.