

(No Model.)

2 Sheets—Sheet 1.

J. S. GEORGE, Jr.
CUT-OUT FOR ELECTRIC LIGHTING SYSTEMS.

No. 500,201.

Patented June 27, 1893.

FIG. 1.

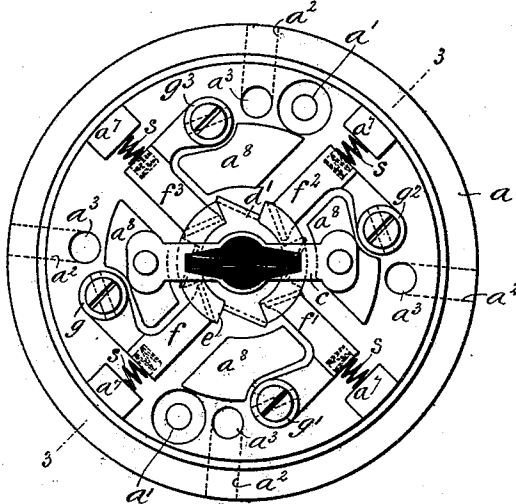


FIG. 2.

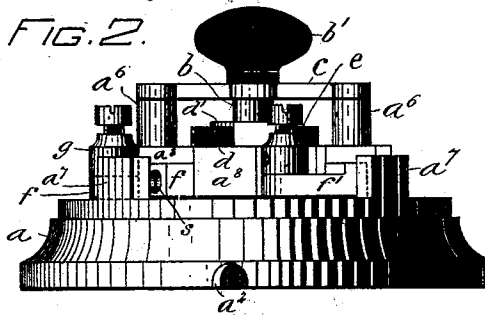
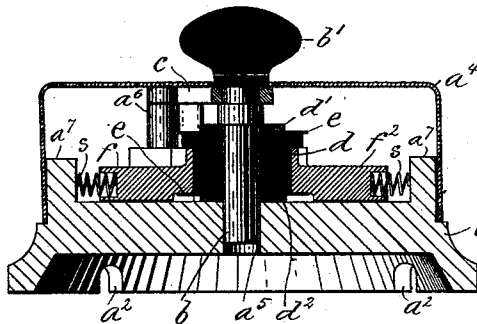


FIG. 3.



WITNESSES:

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Thomas M. Smith.

INVENTOR:

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ATT'Y.

(No Model.)

2 Sheets—Sheet 2.

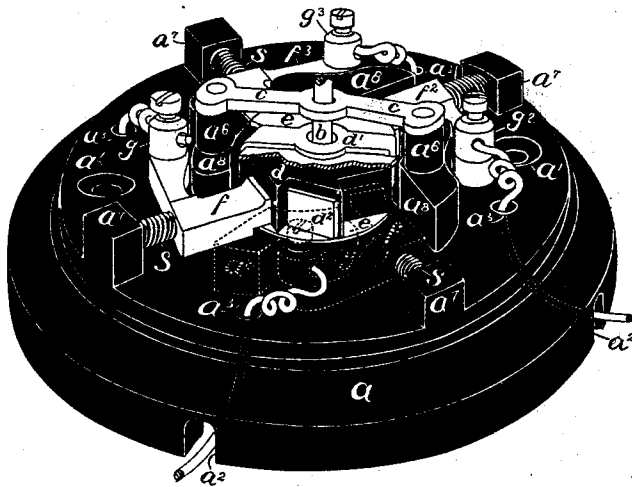
J. S. GEORGE, Jr.

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FIG. 4



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES SCOTT GEORGE, JR., OF PHILADELPHIA, PENNSYLVANIA.

CUT-OUT FOR ELECTRIC-LIGHTING SYSTEMS.

SPECIFICATION forming part of Letters Patent No. 500,201, dated June 27, 1893.

Application filed December 30, 1892. Serial No. 456,743. (No model.)

To all whom it may concern:

Be it known that I, JAMES SCOTT GEORGE, Jr., a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Cut-Outs or Switches for Electric-Lighting Systems, of which the following is a specification.

The principal objects of my invention are first to provide a neat, durable, safe, efficient and comparatively inexpensive cut-out or switch for including and excluding from a circuit the lamp or lamps of an electric lighting system; and second, to provide a cut-out or switch adapted to house electric lighting, for alternately cutting out from the house entirely, and of readily switching in, the circuit of a series or multiple arc system of electric lighting and insuring thereby more perfect safety in the use of electricity for house illumination.

My invention consists in a cut-out or switch substantially as hereinafter described and claimed.

The nature, characteristic features and scope of my invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, and in which—

Figure 1, is a top or plan view of a cut-out or switch for electric lighting systems with the cap or housing thereof removed in order to expose to view the internal parts embodying my invention. Fig. 2, is a side elevational view of the device illustrated in Fig. 1. Fig. 3, is a central sectional view of the same taken on the line 3—3, of Fig. 1, with the detachable cap or housing of the device applied thereto; and Fig. 4, is a perspective view of a cut-out or switch for electric lighting systems embodying the features of my invention with the surrounding housing thereof removed, in order to expose to view the construction and arrangement of the parts of the device, and also showing the circuit wires connected with certain of the parts thereof.

In the drawings a , is an insulating base-plate as porcelain, rubber or other preferred material, provided with apertures a' , for the reception of screws by means of which it may be attached to a wall or other fixture.

a^2 , are notches and a^3 , are apertures molded or otherwise formed in the base-plate a , and adapted to afford means for the passage of conductors not shown.

b , is a shaft provided at its upper extremity with a button or other form of operating handle b' , that projects through a suitable housing or detachable cap a^4 , fitted or otherwise attached to the base-plate a . The lower extremity of this shaft b , is revolvably supported in a seat a^5 , formed in the base-plate a , and the upper portion thereof is similarly supported by a yoke c , attached to lugs a^6 , projecting for this purpose upward from the base-plate a .

d , is a make and break wheel comprising an insulating toothed disk keyed or otherwise attached to the shaft b , and provided upon its respective faces with diametral conducting strips d' and d^2 , that are provided at or near their respective centers with apertures which accommodate bosses or flanges projecting from the respective faces of the wheel d , and serving to insulate the strips d' and d^2 from the shaft b . The respective extremities of the conducting strips d' and d^2 , are turned over onto the faces of certain of the teeth of the wheel d , so that these projecting portions of the conducting strips alternate with the insulating teeth of the wheel d .

e , are insulating gaskets, as mica, interposed between the respective faces of the wheel d , and the conducting strips d' and d^2 , in order to afford ample protection against accidental short circuiting or sparking.

f , f' , f^2 and f^3 , are conducting triggers in electrical connection with the binding posts g , g' , g^2 and g^3 , and afford a range of radial play in respect to the insulating wheel d , and against the force of suitable springs. In the present instance these triggers f , f' , f^2 and f^3 , are of L-shape and are pivotally mounted upon the shanks of the binding posts g , g' , g^2 and g^3 . Moreover, the free extremities of these triggers are beveled and are normally pressed up against the periphery of the wheel d , by means of springs s , interposed between the shanks of the triggers and posts a^7 , projecting upward from the base-plate a .

a^8 , are guards projecting from the base-plate a , between the triggers, in order to prevent accidental short circuiting or sparking.

The mode of operation of the hereinabove described cut-out or switch is as follows:—

When the parts of the device are in the positions illustrated in the drawings all the triggers f, f', f^2 and f^3 are forced by the springs s , into engagement with the insulating teeth of the wheel d , so that the line circuit to the binding posts g and g' , and the lamp circuit from the binding posts f^2 and f^3 , are both broken. When the button or operating handle b' , is turned toward the right in Fig. 1, the spring controlled triggers f, f', f^2 and f^3 , are first forced radially outward from the shaft b , by the insulating teeth of the wheel d , and against the force of the springs s , and they are then permitted to slide off the insulating teeth, whereupon the triggers moving under the influence of the springs s , snap into engagement with the projecting extremities of the conducting strips d' and d^2 . Under these circumstances two paths for the current are afforded, one through the binding-posts g and g' , triggers f and f^2 and conducting strip d' , and the other through the binding-posts g' and g^3 , triggers f' and f^3 , and conducting strip d^2 , so that the lamp circuit is included in the line circuit. The next movement of the button or operating handle causes the triggers moving under the influence of their complementary springs to snap into contact with the insulating teeth of the wheel d , whereby the lamp circuit is excluded from the line circuit. The subsequent movement of the button or operating handle causes the triggers moving under the influence of their complementary springs to snap into contact with the projecting extremities of the conducting strips d' and d^2 , whereby the lamp circuit is included in the line circuit. In this instance the strip d^2 connects the triggers f and f^2 , and the strip d' , connects the triggers f' and f^3 , so that at successive makes the triggers are connected first by one strip and then by the other.

It will be obvious to those skilled in the art to which my invention appertains that modifications may be made in details. For example, two of the triggers may be dispensed with without departing from the spirit of my invention.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A cut-out or switch for electric lighting systems, comprising a revoluble insulating ratchet-wheel, conducting strips applied to the upper and lower portions of said wheel and having the ends thereof folded onto the faces of alternate teeth, and spring controlled triggers included in circuit and adapted to snap onto the folded portions of the strips and onto

the insulating faces of the teeth, substantially as and for the purposes set forth.

2. A cut-out or switch for electric lighting systems, comprising a base-plate having a shaft revolubly supported thereto and carrying a wheel provided with conducting strips alternating with insulating teeth, guards and back-stops formed integral with said base-plate, triggers pivotally supported to said base-plate, and springs connected with said back-stops and with said triggers adapted to be included in circuit and to snap onto the insulating teeth and conducting strips of said wheel, substantially as and for the purposes set forth.

3. A cut-out or switch for electric lighting systems, provided with a base-plate having binding and insulating posts, a revoluble wheel having conducting strips alternating with insulating teeth, triggers pivoted to the shanks of the binding posts and springs interposed between the insulating posts and the shanks of the triggers, substantially as and for the purposes set forth.

4. In a cut-out or switch for electric lighting systems, a revoluble wheel provided upon its respective faces with conducting strips alternating with insulating teeth, and insulating gaskets interposed between said strips and the faces of the wheel, substantially as and for the purposes set forth.

5. In a cut-out or switch for electric lighting systems, a revoluble shaft, a toothed-wheel connected with said shaft and provided upon its respective faces with bosses or flanges and strips having apertures for the reception of said bosses or flanges and having the extremities thereof alternating with the insulating teeth of the wheel, substantially as and for the purposes set forth.

6. A cut-out or switch for electric lighting systems, comprising a housing, a base-plate provided with binding-posts, a revoluble-shaft provided with an operating handle, a wheel attached to said shaft and provided with projecting diametral conducting strips alternating with insulating teeth, triggers pivotally attached to said binding posts, springs interposed between said triggers and posts of the base-plate, and guards projecting upward from the base-plate between the triggers, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

JAMES SCOTT GEORGE, JR.

Witnesses:

THOMAS M. SMITH,
RICHARD C. MAXWELL.