(No Model.)

A. G. BROWN.

CIRCUIT CONTROLLING KEY FOR INCANDESCENT ELECTRIC LAMPS.

No. 346,020. Patented July 20, 1886.

Fig. 1.

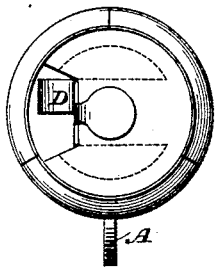


Fig. 2.

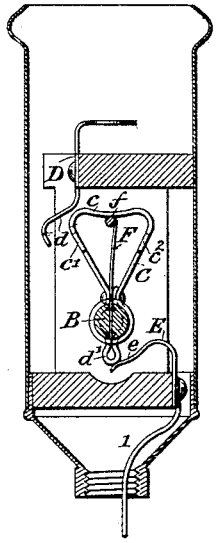


Fig. 3.

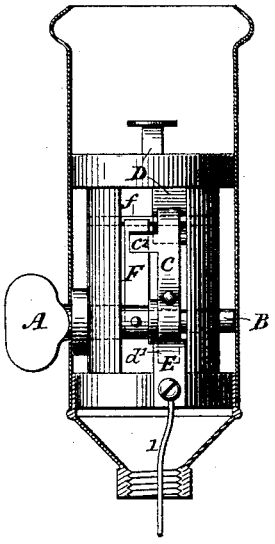


Fig. 4.

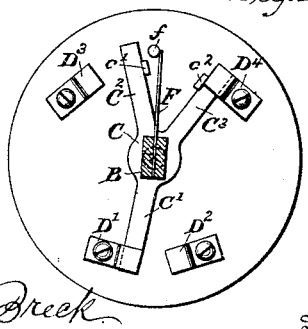
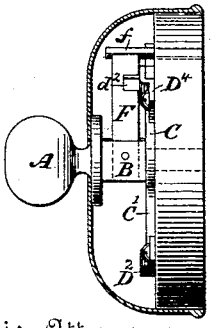


Fig. 5.



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CIRCUIT-CONTROLLING KEY FOR INCANDESCENT ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 346,020, dated July 20, 1886.

Application filed February 10, 1886. Serial No. 191,402. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR G. BROWN, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Circuit-Controlling Keys for Incandescent Electric Lights, of which the following is a specification.

My invention relates to the class of devices employed for manually placing in and cutting out of circuit various classes of electrical apparatus—such, for instance, as electric lights, to which the invention is especially applicable.

The object of the invention is to provide a convenient device for securing reliable electrical connections between the conductor leading from the main or supply and the leading-in wire of an incandescent lamp or other translating device, and insuring a positive operation.

The invention is applicable to various forms of circuit controllers or switches; but it will be described more particularly in its application to incandescent electric lights.

The invention consists in constructing a switch or circuit-closer in substantially the following manner: Attached to a shaft capable of being revolved by a suitable handle or key there is a resilient arm or spring. This spring extends upon one side or the other of a stationary pin, but is capable of being sprung past the pin by turning the shaft. A loosely-mounted contact-plate is designed to be thrust in one direction or the opposite, according as this spring, when it escapes past the pin, strikes against one or the other of two projections carried thereby. The plate is thereby turned quickly upon its pivot and placed in contact with a suitable circuit-closing point. The play of the spring will insure that the movable contact plate or arm shall in this manner be thrust firmly into contact with the circuit-closing point or plate.

In the accompanying drawings, Figure 1 is a plan view, and Fig. 2 is a vertical section, of an electric-light holder illustrating the application of the invention. Fig. 3 is a front elevation of the same. Figs. 4 and 5 illustrate the application of the invention to a hand-switch for other purposes.

Referring to the figures, A represents a handle or key, and B a shaft to which the same is attached. A spring, F, is rigidly attached to the shaft B, and extends outward beyond a stationary contact-pin, *f*, which is preferably of non-conducting material. A movable contact plate or frame, C, is provided with a contact-surface, *c*. This is designed to rest against a contact-plate, D, when the frame is in position to complete the connections of an electric circuit. A second contact-surface, *d'*, is provided for the frame, which, in like manner, is designed to be pressed against a contact-surface, *e*, upon a plate, E. The plate C is frictionally supported upon the shaft B, and capable of moving independently thereof. The plate C is moved into contact with the plate D, not by the movement of the shaft directly, but by means of a spring, F, which, when the key-shaft is turned a sufficient distance, is bent sufficiently to allow its end to escape past a pin, *f*. It will be evident that the shaft must be turned a considerable distance before this can be accomplished; but when the spring is released its resilience will cause it to strike against a projection or lug, *c'*, upon the frame, and thus turn the frame quickly, and cause the contact-surfaces *c* and *d'* to strike against their respective contact-plates D and E, insuring reliable electric connections. The plates D and E are preferably somewhat resilient, and are curved so that as the respective contact-surfaces are sprung into contact therewith the frame C will be held until forcibly turned in the opposite direction. When the shaft B is turned in the opposite direction, the frame C remains at rest until the spring F passes the pin *f*, and by striking against a projection, *c''*, similar to the projection *c'*, it turns the frame in the opposite direction, thus separating the contact-surfaces from their respective contact points or plates. It is designed that the plate E shall be connected with a supply-conductor, 1, and the plate D with a contact-surface, against which one of the leading-in wires of the lamp is placed when the latter is inserted in the holder or socket. The plate E might in some instances be dispensed with, and the conductor 1 led directly to the frame C.

Another method of employing the invention

is illustrated in Figs. 4 and 5, which show a form of switch or circuit changer adapted to purposes where it is required to substitute one electrical connection for another. In this instance four contact-plates, D′, D², D³, and D⁴, are employed, and the contact plate or frame C is formed with three contact-arms, C′, C², and C³. The arm C′ plays between the contact-plates D′ and D², and the arm C² is designed to make contact with the plate D³, and the arm C³ with the plate D⁴. The spring F, when the shaft is turned toward the left hand, strikes against the projection c' upon the arm C² and drives that arm against the plate D³, and at the same time moves the arm C′ against the plate D². This movement of the plate C causes the connections previously established between the plates D′ and D⁴ through the plate C to be interrupted. When the shaft is moved in the reverse direction, the spring F strikes against a projection, c^2, upon the arm C³, and, by moving the plate C, causes the last-named connections to be re-established, and the connections with the plates D² and D³ are interrupted. The arms C′, C², and C³ pass beneath the projecting ends of their corresponding plates D′, D², D³, and D⁴, and either the latter or the arms being slightly resilient, the plate C will be held in whatever position it is thrust by the spring F.

I claim as my invention—

1. The combination, substantially as hereinbefore set forth, with a contact-plate, of a movable support, a spring carried upon said support, means for bending said spring by turning said support, means for suddenly releasing the same and causing it to turn said plate upon its axis, and a contact-point against which said contact-plate is carried by the impingement of said spring.

2. The combination of a flexible spring, a key-shaft carrying the same, a stop intercepting the path of said spring, a movable contact-frame, a lug upon the same, against which the spring may strike when bent sufficiently to escape said stop, a contact-surface against which the contact-frame is thereby driven, and means for holding the frame in contact with said surface.

3. In an electric-light socket or holder, a switch or key consisting of a key-shaft, two contact-points, two contact-surfaces with which the points are respectively designed to make contact, a flexible spring carried by the key-shaft, means for bending said spring by turning said shaft and for releasing it by turning the shaft still farther, and a striking-point upon said frame, against which said spring impinges when so released, thereby moving said frame, substantially as described.

In testimony whereof I have hereunto subscribed my name this 31st day of December, A. D. 1885.

ARTHUR G. BROWN.

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