

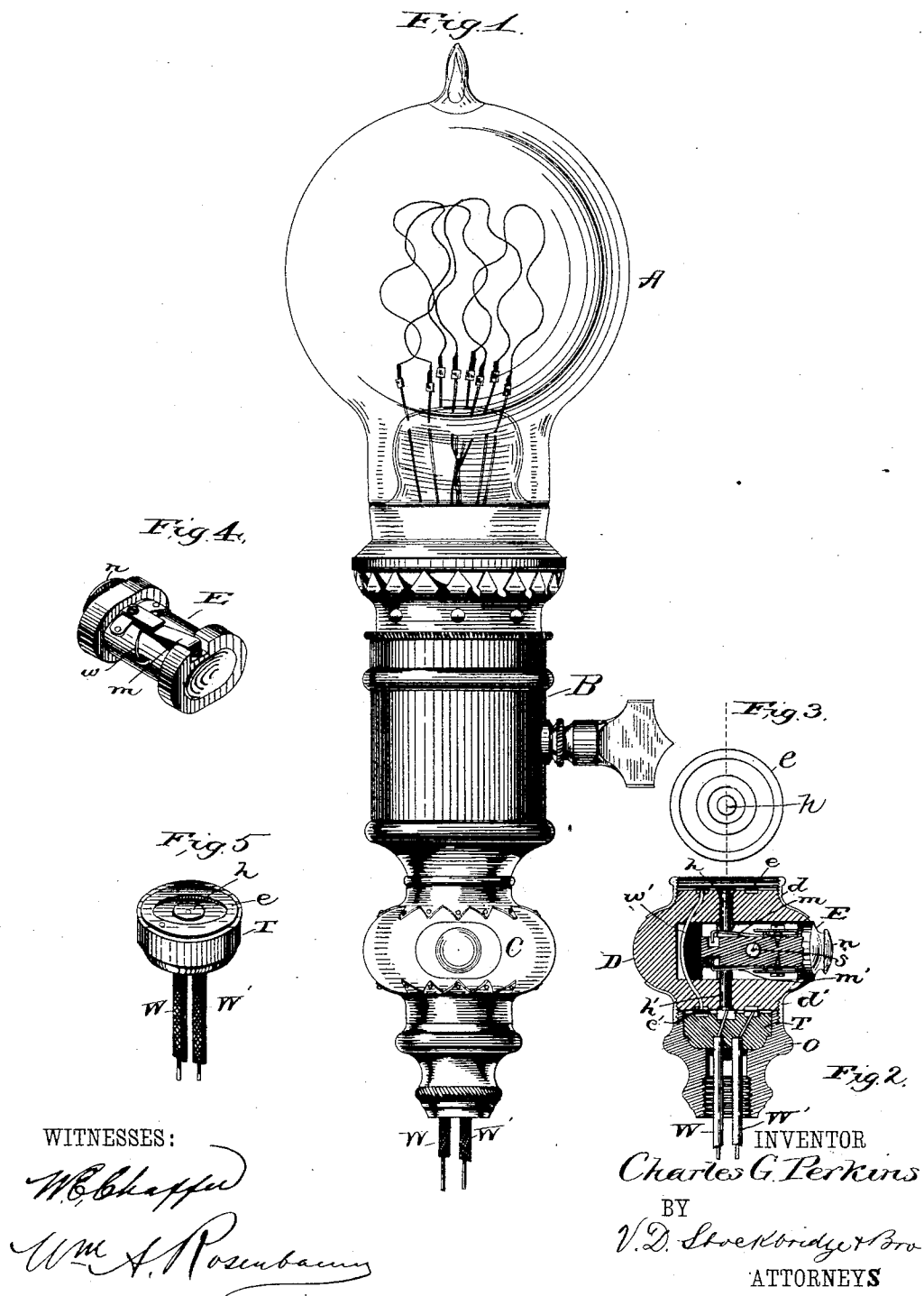
(No Model.)

C. G. PERKINS.

FUSIBLE CUT-OUT FOR INCANDESCENT ELECTRIC LAMPS.

No. 348,049.

Patented Aug. 24, 1886.



UNITED STATES PATENT OFFICE.

CHARLES G. PERKINS, OF NEW YORK, N. Y., ASSIGNOR TO THE IMPERIAL
ELECTRIC LIGHT COMPANY, OF SAME PLACE.

FUSIBLE CUT-OUT FOR INCANDESCENT ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 348,049, dated August 24, 1886.

Application filed November 25, 1884. Serial No. 142,787. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. PERKINS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Fusible Cut-Outs for Electric Incandescent Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to fusible cut-outs for electric incandescent lamps, and has for its object, in common with other inventions of its class, to provide, in connection with every lamp and in close proximity thereto, means whereby the lamp is automatically cut out when there is an excess of current on the line.

My improvement consists, mainly, in so constructing such cut-outs that it shall be mechanically impossible to push the safety-plugs into place without making the proper electrical contacts; that the contacts, when made, shall be electrically good, and that the safety-plugs shall be easy of restoration in case of destruction in use or from any cause whatever.

A secondary object of my improvement is to make a necessary attachment to an electric incandescent lamp serve also as an ornament when mounted for use.

In order to enable others to make and use my invention, I will now describe its construction, reference being had to the accompanying drawings, in which—

Figure 1 represents an incandescent lamp and lamp-socket, together with my improved cut-out and a device for coupling it to an electrolier or bracket. Fig. 2 is a vertical section of my improved cut-out, and it also shows in section the coupling device mentioned above. Fig. 3 is a plan of my improved cut-out. Fig. 4 is a perspective of the safety-plug which forms a part of my cut-out, and Fig. 5 is a detail of one part of the coupling device.

The lamp A and the socket B may be of any ordinary construction, though I have shown my multiple carbon lamp and my socket having switch-operating mechanism projecting through its side.

The lamp and the socket form no part of

my present invention, and are not claimed in this application.

C is my cut-out, and it consists of an inclosing insulating-ball, D, and a removable safety-plug, E, contained within a cavity in the same. The insulating-ball carries the usual circuit-terminals, and has secured to it the screw-threaded top and bottom pieces, *d d'*, for attachment, respectively, to the lamp-socket and the lamp fixture or support. The terminals consist in this instance of the rings *e e'*, connected by the wire *w'*, and the pins or screws *h h'*, which make contact, when the cut-out is in position, with corresponding rings and pins in the socket and support. The safety-plug E carries the contact-springs *m m'* for making electrical contact with the pins *h h'* when the plug is pushed into place. The pins *h h'* project into the space occupied by the safety-plug E far enough to make contact with the springs. A thumb-piece, *n*, on the safety-plug E furnishes convenient means for withdrawing it or putting it into its place at will. A fusible wire, *w*, joins the two springs *m m'*, and is held in place by the same screws which attach the springs to the plug. To give greater length and resistance to the safety-wire it may be passed, as shown, through a perforation, *s*, extending through the body of the plug. It will of course be understood that the pins *h h'* and the rings *e e'* form parts, respectively, of the direct and return circuits of the lamp, which, being understood, it is also clear that the safety-wire *w* normally forms a part of the lamp-circuit, and that it will be fused or melted in case the current on the lamp-circuit becomes excessive. The plug E has notches on opposite sides, as shown, and these notches receive the ends of the springs *m m'* and those of the pins *h h'*, the plug having suitable depressions to allow the springs some play. The notches serve as guides to carry the springs always into contact with the pins *h h'*, as the plug cannot be pushed into place until the notches come into line with the said pins. The rings *e e'* are in reality springs which are attached at one end to the insulating-ball countersunk in the same for the greater part of their length, and raised at the opposite end to form a spring contact with countersunk

rings on the socket and fixture, respectively. The shading in Fig. 3 shows the raised end of the spring.

The top and bottom pieces, d d' , will usually be made after an ornamental pattern, and these, taken in connection with the ball, will form an ornamental lamp attachment which will also serve the functions of an automatic cut-out. It is obvious that the form of what is termed the "ball" may be varied without departing from the principle of my invention.

The means which I employ for attaching the combined lamp, socket, and cut-out to their support are best illustrated in Figs. 2 and 5. W W' are lamp-circuit wires running through an arm of an electrolier or other electric-lamp fixture. O is an inclosing metallic ring provided with means of attachment to the end of a bracket-arm and to the bottom of the cut-out. T is an insulating-piece adapted to fit into the upper part of the ring O , and having the pin or disk terminal h and the counter-sunk ring terminal e , to the former of which the wire W is attached, and to the latter the wire W' . To make the connection, the ring O is first secured in place on a fixture, and the insulating-piece T fitted loosely in the ring. The cut-out is then screwed down, and the circuit is complete through wire W , pin h , pin h' , spring m' , safety-wire w , spring m , pin h , up through the lamp, when the switch is in the right position, and back through ring e , wire w' , ring e' , ring e , and wire W' .

The coupling device above described is not claimed herein, as it forms the subject of a distinct application filed at the same time herewith, and covering a coupling device for electrical conductors.

I have represented my ring O as being provided with screw-threads for joining it to the lamp-support and to the cut-out; but any

other suitable means of attachment may be employed, if preferred.

So far as my present invention is concerned I do not desire that it be limited by the fact that I show it in connection with my coupling device, as my cut-out may be used with other coupling devices or it may be joined directly to the end of a fixture-arm, if the arm is suitably constructed. In fact, my coupler, when secured in position, becomes the end of the supporting-arm, and for present purposes may be regarded as a permanent part thereof.

Owing to the fact that the pins or screws h h' extend into the notches in the plug, that is extend beyond the outer surface thereof, the plug cannot be thrust into place until it has been turned so as to bring the notches into line with the pins or screws. When it has been so turned, it can easily be pushed in, as the springs will yield on being pushed against the rounded ends of the pins. By reason of their resiliency they will then preserve good electrical contact with the pins.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is--

The combination, with a safety-plug having notches, substantially as described, of contact-springs located within the notches and circuit-terminals adapted to project into the notches, whereby the plug is prevented from being pushed into place until the contacts are in line, and whereby spring connection is preserved between the contacts when the plug is in position.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES G. PERKINS.

Witnesses:

GEO. C. COFFIN,
GEO. C. WILDE.