(No Model.)

J. L. KIMBALL & H. C. WIRT.

ELECTRIC CUT-OUT.

No. 407,077. Patented July 16, 1889.

Fig: 1.

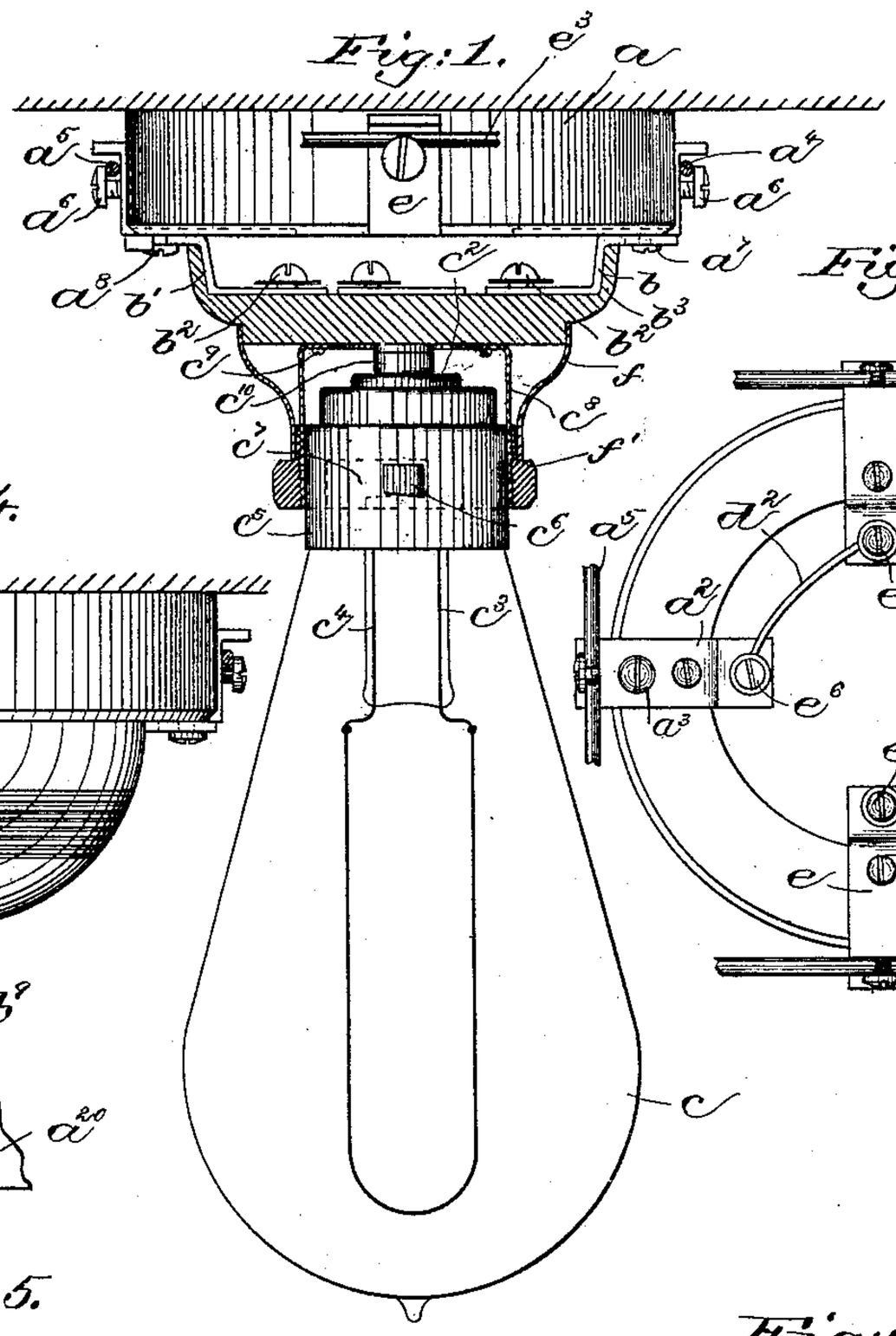


Fig: 3

Fig: 4.

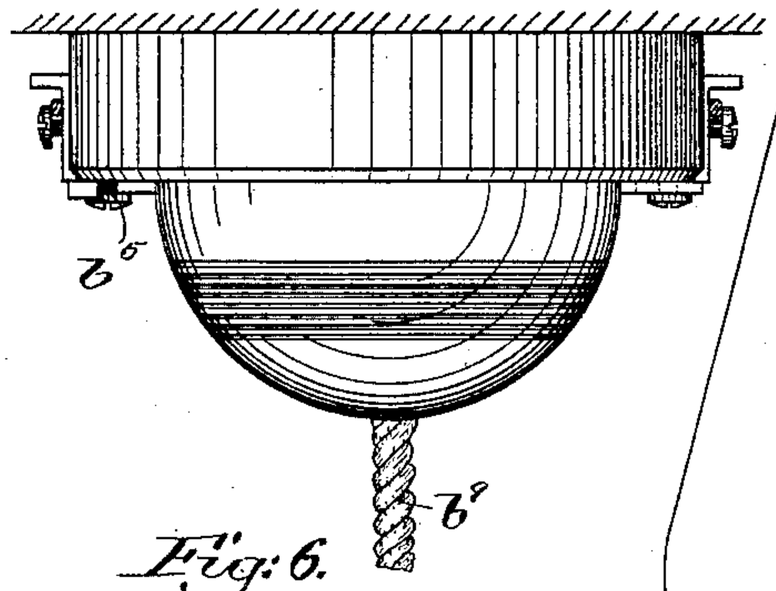


Fig: 6.

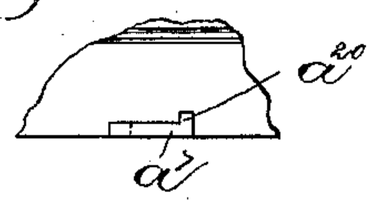


Fig: 5.

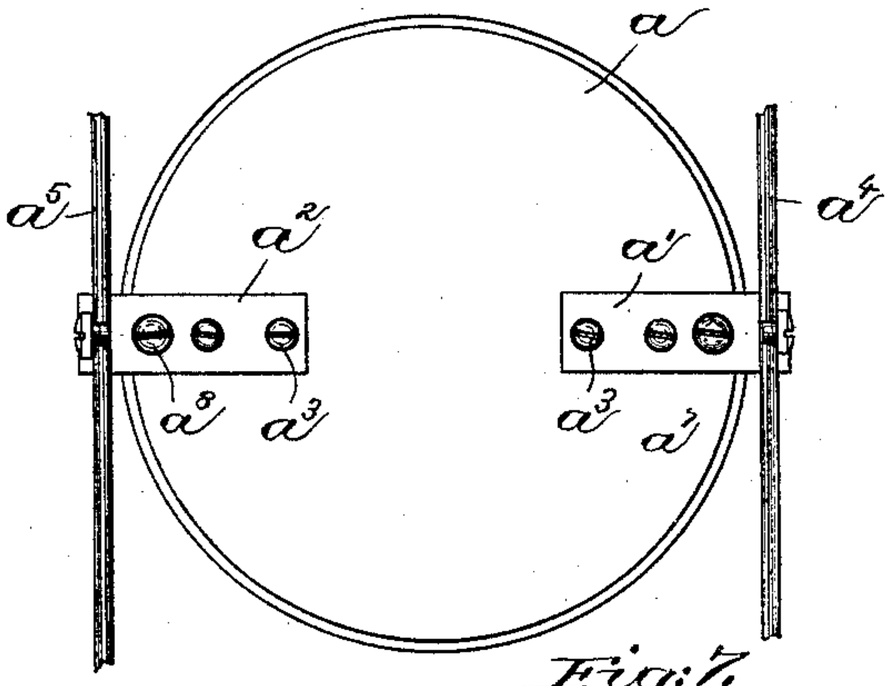


Fig: 7.

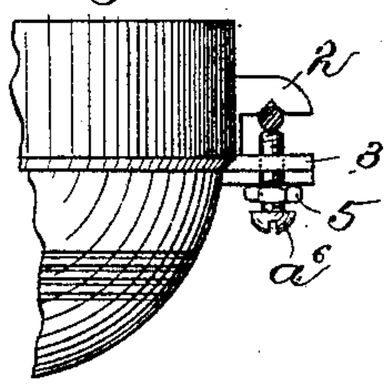


Fig: 2.

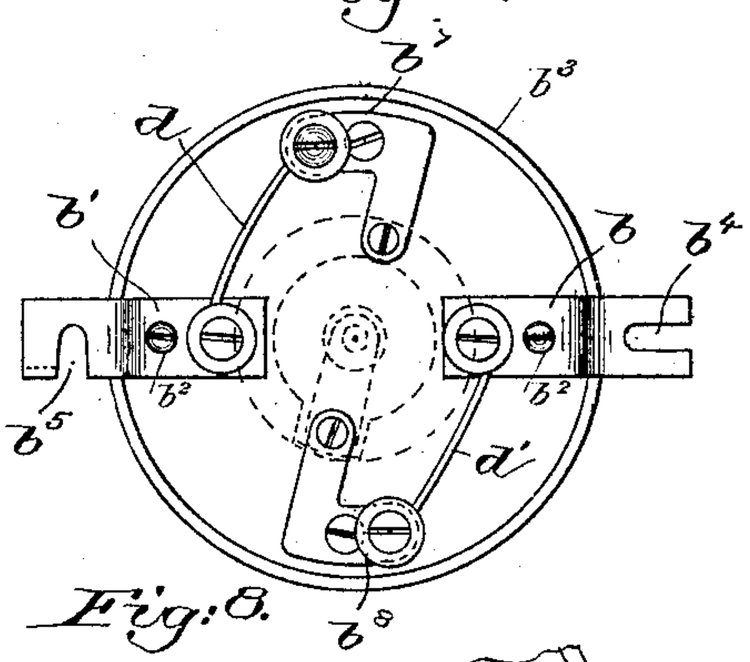
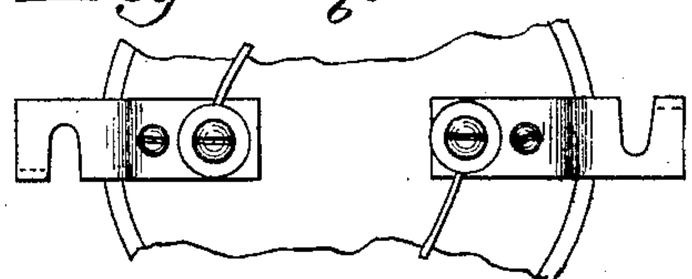


Fig: 8.



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James L. Kimball,
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by Crosby & Gregory Attys

UNITED STATES PATENT OFFICE.

JAMES L. KIMBALL AND HERBERT C. WIRT, OF BOSTON, MASSACHUSETTS.

ELECTRIC CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 407,077, dated July 16, 1889.

Application filed March 28, 1889. Serial No. 305,085. (No model.)

To all whom it may concern:

Be it known that we, JAMES L. KIMBALL and HERBERT C. WIRT, both of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Electric Cut-Outs, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to electric cut-outs especially adapted to be used with incandescent lamps, and is an improvement upon the cut-out substantially such as shown and described in our application, Serial No. 295,975, filed January 10, 1889.

One feature of our present invention consists in novel details of construction, whereby a surer and more reliable electrical connection is obtained and whereby an efficient and cheaper cut-out may be made.

Our invention therefore consists, essentially, in the combination, with a base provided with contact-arms secured thereto and to which the line-wires may be connected, of a cap or rosette provided with contact-arms extended beyond the said cap or rosette and means to secure positive electrical connection between the contact-arms of the cap and base outside of the said cap, substantially as will be described.

Other features in which our invention consists will be specifically pointed out hereinafter in the claims at the end of this specification.

Figure 1 represents in elevation and section a cut-out embodying our invention having a stationary incandescent lamp secured to it; Fig. 2, an under side view of the cap or rosette removed; Fig. 3, a top or plan view of the base-block shown in Fig. 1 to more clearly show the contact-arms secured thereto. Fig. 4 is an elevation of the cut-out shown in Fig. 1 as employed with a suspended incandescent lamp; Fig. 5, a top or plan view of the base, showing two contact-arms as secured thereto; Fig. 6, a detail to be referred to, and Figs. 7 and 8 modifications to be referred to.

The base a, of wood or other suitable material, of round or other desired shape, is preferably made of a block having its outer face flat and provided with slots to receive contact-arms a' a^2, the said slots being of such depth as to bring the upper face of the contact-arms substantially flush with the outer face of the block or base a.

The contact-arms a' a^2 are secured to the base a, as herein shown, preferably by countersunk screws a^3, and are extended beyond the side or circumference of the base and bent upward and then outward, as shown in Figs. 1 and 4, to receive against them the line-wires a^4 a^5, the latter being secured in contact with the contact-arms by screws a^6, substantially as in the application referred to. The contact-arms a' a^2 preferably have inserted into them screws a^7 a^8, which in practice are engaged by, preferably, slotted contact-arms b b', (see Fig. 2,) secured to a hollow cap or rosette b^3, as by screws b^2. The contact-arms b b' are extended beyond the circumference or sides of the cap or rosette, and one contact-arm, as b, is provided preferably with a longitudinal slot b^4 (see Fig. 2) to engage one screw, as a^7, while the other contact-arm b' is preferably provided with a transverse slot, as b^5, to engage the screw a^8.

When it is desired to secure the cap or rosette to its base, the contact-arm b, provided with the longitudinal slot b^4, is slid under the head of the screw a^7 and the cap then swung in a circle with the screw a^7 as a pivot to bring the transverse slotted contact-arm b' under the head of the screw a^8, and when in this position the said screws may be tightened to securely fasten the cap to its base and obtain a sure and reliable electrical connection between the cap or rosette and base.

The cap or rosette on its inner side will be provided with the contact-plates b^7 b^8, (see Fig. 2,) to which the wires of the cord b^9, connected to the lamp, may be secured when the cut-out is to be used with a suspended lamp, the cord being passed through the usual hole in the center of the cap or rosette.

The contact-arms may both be provided with transverse slots b^5, as shown in Fig. 8, and to prevent the said arms from being worked out from under the heads of the screws a^7 a^8 the said contact-arms are provided, as herein shown, with a flange or lip a^{20}, turned substantially at right angles to the said arms, as clearly shown in Figs. 1, 4, and 6 and in dotted lines in Figs. 2 and 8.

In practice it might happen that the screws

would become loose by jarring—as, for instance, in a mill—and in this case the lip a^{20} would act to prevent the slotted arms from being disengaged from the screws.

As shown in Fig. 1, the cap or rosette is adapted to have connected directly to it the incandescent lamp c, which is provided, as herein shown, with the usual metallic plate c^2, in electrical connection with one electrode, as c^3, the other electrode, as c^4, of the lamp being in electrical connection with the metallic collar c^5 about the base of the said lamp, all as usual.

The collar c^5 is provided, as herein shown, with, preferably, wedge-shaped lugs c^6, which co-operate with slots c^7 (indicated by dotted lines, Fig. 1) in a shell or case c^8, secured to the cap or rosette in any suitable manner, herein shown as fastened by small screws c^9.

The shell or case c^8 is in electrical connection with one of the contact-plates—as, for instance, b^7—and the cap or rosette has secured to its outer face or surface a contact button or member c^{10}, electrically connected in any suitable manner to the contact-plate b^8, the button c^{10} co-operating with the plate c^2 to establish the electrical connection through the lamp when the lugs c^6 on the collar c^5 are inserted into their slots c^7, the said lugs and slots, as herein shown, forming a bayonet-joint, by which the lamp is securely fastened to the cut-out.

The cut-out shown in Fig. 1, with its attached incandescent lamp, may be used on the side or wall of a building, or in any other place where it is desired to employ a stationary or fixed electric lamp.

If it is desired to employ a suspended lamp, the cap or rosette shown in Fig. 1, with its attached lamp, may be disconnected from the base a, and a cap or rosette having a like construction to the cap or rosette shown in Fig. 1, with the exception that a hole is provided for the cord b^9, may be then connected to the base a.

The contact-plates b^7 b^8 will be respectively connected to the contact-arms b' b, as in the application referred to, by fusible pieces d d', constituting a safety cut-out for the lamp.

As shown in Fig. 5, two contact-arms a' a^2 are secured to the base; but if so desired a second set of contact-arms e e', similar in construction to the contact-arms a' a^2, may be secured to the said base substantially at right angles to the arms a' a^2, as shown in Figs. 1 and 3, so that the line-wires e^3 e^4, secured to the said contact-arms e e', run substantially at right angles to the main line a^4 a^5. The contact-arm a' is connected to the contact-arm e by a fuse-wire d^3, while the contact-arm a^2 is connected to the contact-arm e' by a fuse-wire d^2.

As shown in Fig. 3, the base a is made hollow for a slight depth to receive the inner ends of the contact-arms referred to, the latter being bent so that the screws e^6, which secure the fusible strips d^2 d^3 to the contact-arms, may come substantially flush with the remaining portions of the contact-arms, and thus obviate danger of short-circuiting when the cap is applied to the base.

The upturned portions of contact-arms e e' are made longer than the upturned portions of the contact-arms a' a^2, as herein shown, so that when the line-wires are secured to their respective arms one circuit, as e^3 e^4, will be out of horizontal line with the circuit a^4 a^5, whereby danger of short-circuiting is obviated.

We prefer to employ headed screws a^7 a^8, to be engaged by the contact-arms b b'; but we do not desire to limit ourselves to this particular construction, as it is evident a headed projection or stud might be formed upon the contact-arms instead of the said screws.

The socket c^8 is protected from injury, as herein shown, by a metallic shield or guard f, fitted upon the said cut-out and secured in place by the ring f', of insulating material, inserted between the said guard and socket, the said ring being secured to the said socket in any suitable manner.

Instead of making the contact-arms a' a^2 as shown in Fig. 1, they may be made as now commonly practiced and shown in Fig. 7, wherein the said contact-arm has its end made in two parts 2 3.

The line-wire is secured to the part 2 by a binding-screw a^6, inserted through the part 3 of the said contact-arm, and, if desired, the slotted contact-arms b b' may be secured to the said screws by a nut 5 thereon.

In cut-outs as now commonly constructed the cap is secured to the base by spring contact-arms concealed from sight within the cap, and it frequently happens in practice that the electrical connection is not made, even when the cap is secured to its base, for one spring contact-arm of the cap might be engaged with a spring contact-arm of the base and the other spring contact-arm of the cap disengaged from its co-operating spring contact-arm of the base, and the cap would thus be insecurely held to the base, so that the entire weight of the lamp and shade would be sustained by one spring contact-arm, and any considerable jarring would readily disengage the cap from its base. By extending the contact-arms on the cap outside the same and securing the said arms to the arms on the base, as by screws, a positive and reliable electrical connection is made and danger of the cap being detached from its base by jarring is reduced to a minimum.

We claim—

1. In an electric cut-out, the combination, with a base provided with contact-arms secured thereto and to which the line-wires may be connected, of a cap or rosette provided with contact-arms extended beyond the said cap or rosette and means to secure positive electrical connection between the contact-arms of the cap and base outside of the said cap, substantially as described.

2. In an electric cut-out, the combination, with a flat base *a* and contact-arms secured thereto and to which the line-wires may be connected, of screws a^7 a^8, secured to said contact-arms, and a cap or rosette provided with contact-arms *b b'*, extended beyond the sides of the cap and provided, respectively, with slots to engage the screws a^7 a^8 on the contact-arms secured to the base, substantially as described.

3. In an electric cut-out, the combination, with a base provided with two sets of contact-arms secured thereto to form a main line and a branch line or circuit and fuse-wires secured directly to the said sets of contact-arms to establish electrical connection from the main to the branch line, of a cap or rosette provided with contact-arms extended beyond the sides of the cap and adapted to be secured to said base outside of the said cap, substantially as described.

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

JAMES L. KIMBALL.
HERBERT C. WIRT.

Witnesses:
JAS. H. CHURCHILL,
FREDERICK L. EMERY.