(No Model.)

C. J. VAN DEPOELE.

SAFETY CUT-OUT FOR ELECTRIC LAMPS.

No. 288,682. Patented Nov. 20, 1883.

Fig. 1.

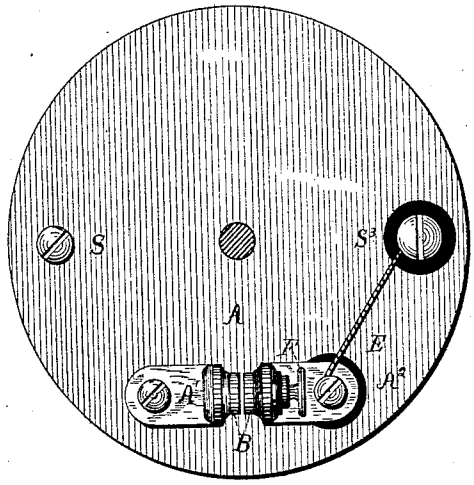
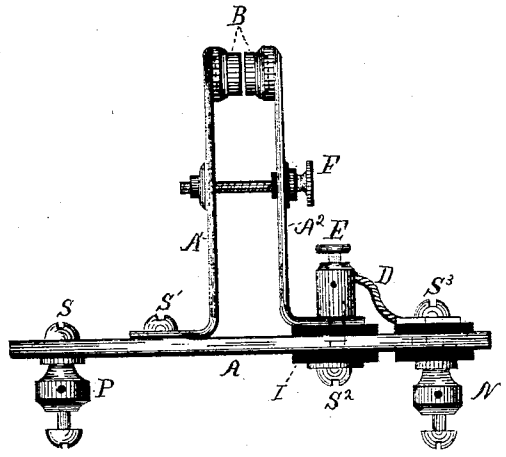


Fig. 2.



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CHARLES J. VAN DEPOELE, OF CHICAGO, ILLINOIS.

SAFETY CUT-OUT FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 288,682, dated November 20, 1883.

Application filed May 24, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. VAN DEPOELE, of Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Safety Cut-Outs for Electric Lamps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

The nature of this invention relates to certain new and useful improvements in devices to be used in connection with electric lamps, whereby such lamps are automatically cut out of circuit; and the invention consists in a device, which will be hereinafter more particulay described, and pointed out in the claims, by means of which, in the case of an electrode failing to feed or of its breaking, or through other cause which should break the circuit and extinguish all the lamps therein, said device will automatically and instantly cut out of circuit such defective lamp without interfering at all with the functions of all the other lamps in the circuit.

Figure 1 is a plan of the device as applied upon the bottom plate of an electric-lamp top, and Fig. 2 is an elevation of the same.

In the form shown in the accompanying drawings, A represents the bottom plate of a lamp-top. A′ is an L-shaped spring attached by the screw S′ to such plate, and this spring is in electrical contact with the positive pole P through said bottom plate and the screw S. A^2 is a similar spring, secured to such plate A by means of the screw S^2; but the parts are entirely insulated by the vulcanite I, or by other suitable material.

E is a binding-post, and D a conductor, by means of which the spring A^2 is electrically connected with the negative pole N by means of the screw S^3.

F is an adjusting-screw, to regulate the position or the distance between the springs A′ A^2 or the contact parts thereof.

B B represent two metallic contacts, preferably in the form of buttons or their equivalents for the purpose, and one of these contacts or buttons is secured in a socket or otherwise to the inner face of each of the springs A′ A^2.

It will be seen readily that by this construction (to which, however, I do not desire closely to confine myself, as various other arrangements can be made which will produce the same effect) a very weak point is made, so that when the resistance between the two carbons of the lamp, being one lamp of many in a circuit, becomes too great, a current will then readily pass through the buttons B, which will fuse together and make contact to the next lamp, and the like result would occur if the lamp were extinguished from the breakage of the electrodes. The current would then immediately take the direction through the device, fusing the buttons together, and pass freely on to the next lamps in the circuit; while if the proper relations between the two carbons or electrodes of the lamp are maintained, the device I have above described will remain inert and inoperative, and the current will follow its usual course through the different parts of the lamp; but let the carbon-carrying rod stick and refuse to feed, or if from any other cause the distance between the carbons becomes too great, thus augmenting the resistance between the two electrodes to such an extent that the current will be unable to overcome the great distance it has just then to pass, as the distance between the buttons B is very slight, the current will pass that way to the next lamp. When it is discovered that the lamp has thus been automatically cut out of circuit, it can immediately be put into use again by compelling the carbon to feed or replacing the same, if burned out, and as soon as this is done and the carbons brought into contact and the contact between the buttons B destroyed or broken, the current will pass through the lamp as before. The buttons or contacts B should be so secured to the spring-arms that they can be taken out and replaced when they are burned or stuck together. So, whenever an undue resistance between the carbons of any lamp happens to exist, a weak spot being between the buttons B, the current will immediately jump between these two buttons, and fuse them together, thus putting the positive and negative terminals in electric current and allowing the current to pass on.

I may sometimes interpose a non-conducting substance like paper between the buttons

B, for the same result would be obtained as adjusting the distance between them. In this case the spark burns the paper and then melts the buttons together, which, after the lamp has been put into shape again for use, would only require that such buttons be replaced by another pair.

What I claim as my invention is—

1. A safety cut-out for lamps, provided with two contact points or surfaces arranged in immediate proximity and directly facing each other, one being connected to the positive and the other to the negative pole of the lamp, said points being carried by devices constructed to be held at all times a regulated distance apart, whereby said points are held apart without an intervening substance and are adapted to melt and unite together by the passage of the current between said points caused by an abnormal resistance of the arc, substantially as described.

2. A safety cut-out for lamps, provided with two removable contact points or surfaces arranged in immediate proximity and directly facing each other, one being electrically connected to the positive and the other to the negative pole of the lamp, and adapted to melt and unite together by the passage of the current between said points caused by the abnormal resistance of the arc, substantially as described.

3. A safety cut-out for lamps, provided with two removable buttons set facing each other in cups, one of said cups being electrically connected to the positive and the other to the negative pole of the lamp, and adapted to melt and unite together by the passage of the current between said points caused by the abnormal resistance of the arc, substantially as described.

4. In a safety cut-out for electric lamps, the springs A′ A^2, carrying poles B B at their upper ends, in combination with a suitable adjusting set-screw for regulating the distance between said poles and for normally keeping them from touching, substantially as described.

5. In a safety cut-out, the springs A′ A^2, each connected with the lamp-circuit and each carrying a socket at its upper end, in combination with the poles B, fitting in said sockets, and the screw F, for regulating the distance between said poles, substantially as described.

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Witnesses:

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