

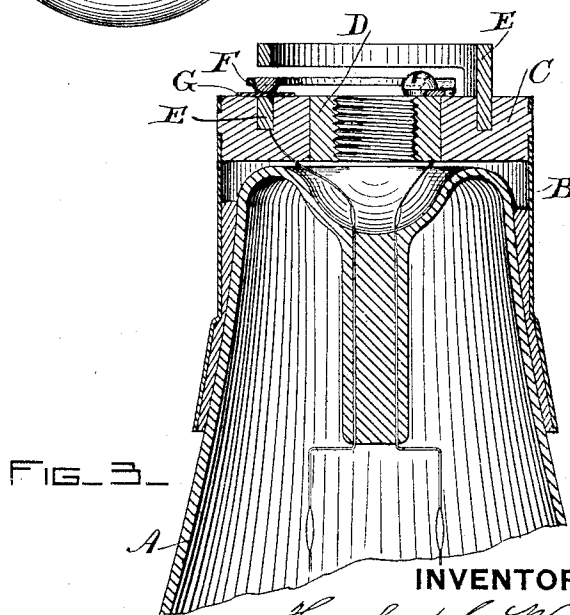
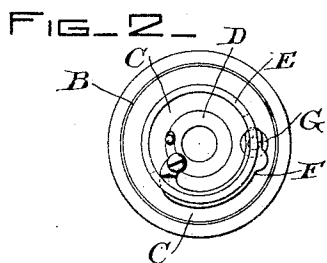
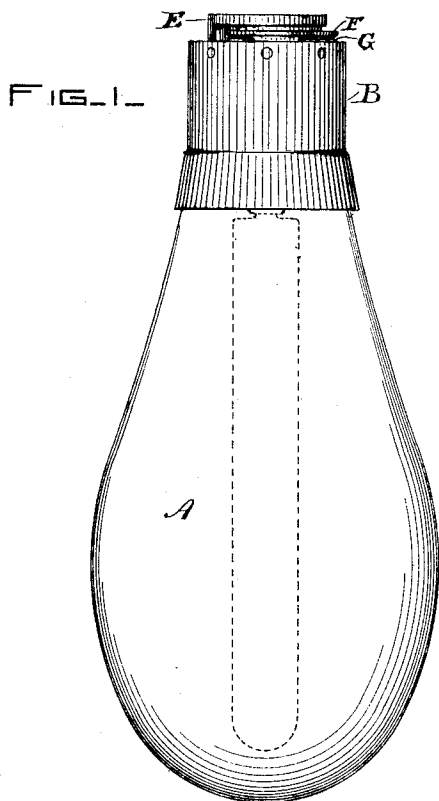
(No Model.)

2 Sheets—Sheet 1.

H. C. WIRT.
CUT-OUT FOR INCANDESCENT LAMPS.

No. 465,508.

Patented Dec. 22, 1891.



WITNESSES:

Al. Dine
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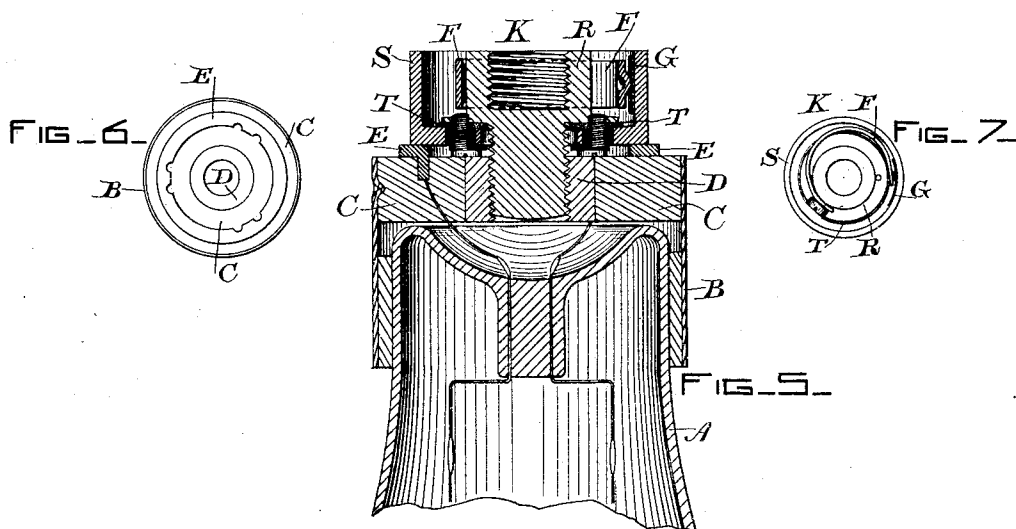
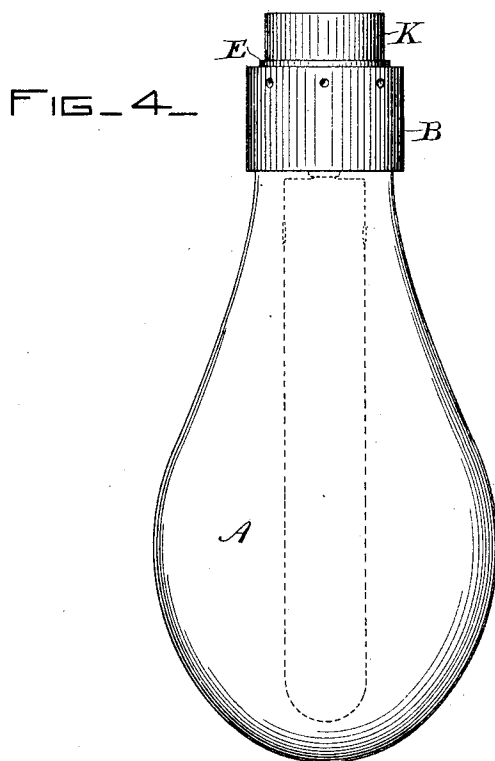
Herbert C. Wirt
by Bradley & Knight

ATTYS.

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CUT-OUT FOR INCANDESCENT LAMPS.

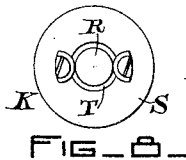
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WITNESSES:

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UNITED STATES PATENT OFFICE.

HERBERT C. WIRT, OF BOSTON, MASSACHUSETTS.

CUT-OUT FOR INCANDESCENT LAMPS.

SPECIFICATION forming part of Letters Patent No. 465,508, dated December 22, 1891.

Application filed March 28, 1890. Serial No. 345,688. (No model.)

To all whom it may concern:

Be it known that I, HERBERT C. WIRT, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Cut-Outs for Incandescent Lamps, of which the following is a specification.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 shows an incandescent lamp with my cut-out attached. Fig. 2 is an elevation of the socket end of the lamp. Fig. 3 is a transverse section thereof. Fig. 4 is an elevation of a lamp in which my cut-out is applied as an independent element. Fig. 5 is a section of the socket end of the lamp. Figs. 6 and 7 are end elevations of the lamp and of the cut-out pieces, respectively. Fig. 8 is an opposite view to Fig. 7.

The object of the device which is illustrated herein is to provide an automatic short-circuiting device for incandescent lamps operated in series.

It consists of a spring attached to one of the terminal pieces of the lamp and bearing by its resiliency against the opposite terminal, from which, however, it is normally insulated by means of a small piece of paper. This paper is a sufficient insulation under normal circumstances to prevent electrical connection between the opposite terminals of the lamp; but under abnormal conditions, occasioned by a breakage of the carbon or other accident to the lamp, this paper will be perforated by the increased potential between the parts on opposite sides of it, and the spring will then come into positive engagement with the metal and form a short circuit for the lamp. In practice I may apply such a construction to a lamp directly, or I may provide an independent piece adapted to be included between the base of the lamp and the lamp-socket, which contains the short-circuiting device or cut-out above described.

Referring to the drawings, A represents the bulb of the incandescent lamp, and B a metal base in which the bulb is set. This metal base consists of a cylinder of sheet metal having one end open to receive the lamp-bulb and the other end closed by a disk C of insulating material. In the insulating-disk C are set

two terminal pieces connected, respectively, to opposite ends of the carbon filament and adapted to make contact with corresponding pieces in the socket. These terminals consist of a central screw-socket D and a concentric ring E. The socket D is adapted to receive a screw extending from the lamp-socket, which screw forms one terminal of the circuit, and the ring E, when the lamp is placed in position, is adapted to come into contact with a corresponding ring in the lamp-socket and complete the electrical connection. Between these two terminal pieces D and E in the base of the lamp, I provide a spring F, which is curved to a radius corresponding with E, but at one end has a curve on a shorter radius, which comes in and is attached to the screw-socket D. The spring F is shown in elevation in Fig. 2 and in section in Fig. 3. Its outer terminal rests normally against the metal of ring E, but is separated therefrom by a film of paper G. The main part of the spring is protected by being held in a wide slot in ring E. This slot half-way round the ring protects the spring F, although it does not come into contact therewith on account of the interposed film of paper G. The contact end of spring F may, if necessary, consist of a small button, which, if desired, may be of fusible solder, so that in case there is not a perfect contact it may be fused by the heat and firmly connect the spring to the ring E, forming an effective short circuit across the lamp.

In Figs. 4 and 5, K represents an independent piece adapted to be attached to lamps which have not been provided with my cut-out. It is provided on one side with contacts corresponding to the contacts of the lamp-socket, so that the lamp may be attached to it just as it is ordinarily attached to its socket. On the other side piece K has a receiving-screw socket and a contact-ring corresponding to the similar parts D and E of the lamp-base, so that it may enter the lamp-socket just as the lamp itself might do. By this means my cut-out is made as an independent piece adapted to be inserted between the lamp and its socket. In this form I have shown the piece K as composed of two short concentric cylinders R and S, separated from each other by an insulating-ring T. The part R has upon one side a screw adapted to enter the screw-socket

D in the base of the lamp, and at the other end it is formed into a screw-socket corresponding to D, and adapted to enter the lamp-socket just as the part D might do. The
 5 outer cylinder S forms a structural support, and at the same time is adapted to connect with ring E and also take the place of the said ring to make contact in the socket. The spring F in this case is attached to interior
 10 cylinder R, and is spring-pressed against cylinder S, but insulated therefrom by a paper film, as in the former case.

The device which I have thus described forms a neat and effective cut-out for a series
 15 lamp by making but a slight change in the lamp as at present constructed, and, if necessary, no change whatever.

What I claim as new, and desire to secure by Letters Patent, is—

20 1. The combination, with an incandescent lamp, of a connecting device having two concentric terminals respectively connected with the terminals of the lamp, with an insulating-piece interposed between said concentric terminals, and a cut-out spring connected to one
 25 of said concentric terminals and separated from the other by a film of insulating material, one of said terminals inclosing and protecting the said cut-out spring.

30 2. The combination, with an incandescent lamp, of a connecting device having two concentric terminals respectively connected with the terminals of the lamp, with an insulating-piece interposed between the said concentric
 35 terminals, one of said terminals having a slot or opening, and a cut-out spring connected to one of said concentric terminals and extending within said slot or opening, so as to be protected by the other terminal and separated
 40 from the other terminal by a film of insulating material.

3. The combination, with an insulating-piece in the base of a lamp, of two concentric terminals connected, respectively, to the opposite
 45 ends of the carbon filament, and a curved spring connected to one of said terminals and

pressing against the other, but separated from the latter by a suitable film adapted to be perforated by a definite difference of potential.

4. The combination, with an insulating-disk
 50 in the base of an incandescent lamp, of two concentric terminals thereon connected, respectively, to the opposite ends of the carbon filament, and an intermediate curved spring connected to one of said terminals and pressing
 55 against the other, but insulated from the latter by a suitable film adapted to be perforated by a definite difference of potential.

5. The combination, with an incandescent lamp and its socket, of an intermediate piece
 60 having terminals detachably engaging with the socket and supporting the piece and having also terminals detachably engaging with and supporting the lamp, and a short-circuiting cut-out between opposite terminals in
 65 said piece, the lamp being electrically and mechanically connected to the socket only through said piece.

6. The combination, with the base of an incandescent lamp, of a separable piece adapted
 70 to be included between the lamp and the lamp-socket and consisting of two concentric metallic pieces corresponding to the lamp-terminals and having between them an intermediate spring attached to one and pressing against
 75 the other, but insulated from the latter by a suitable film adapted to be perforated by a definite difference of potential.

7. An intermediate piece for insertion between an incandescent lamp and its socket, so
 80 as to form the support and connection for the lamp, having a set of terminals corresponding to those of the socket, and a set of terminals corresponding to those of the lamp, and a short-circuiting cut-out connected between
 85 opposite terminals of the said intermediate pieces.

HERBERT C. WIRT.

Witnesses:

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 F. O. BLOCKWELL.