

O. F. ASBURY.
ARC LAMP SAFETY DEVICE.
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977,774.

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Fig. 1.

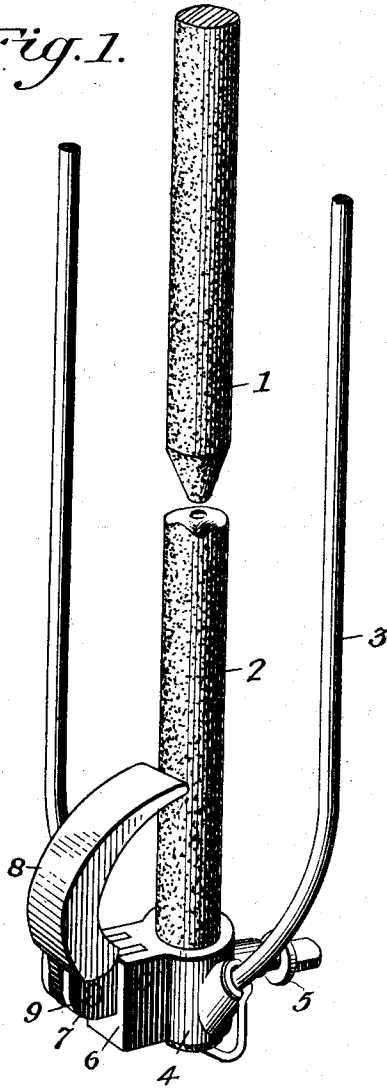
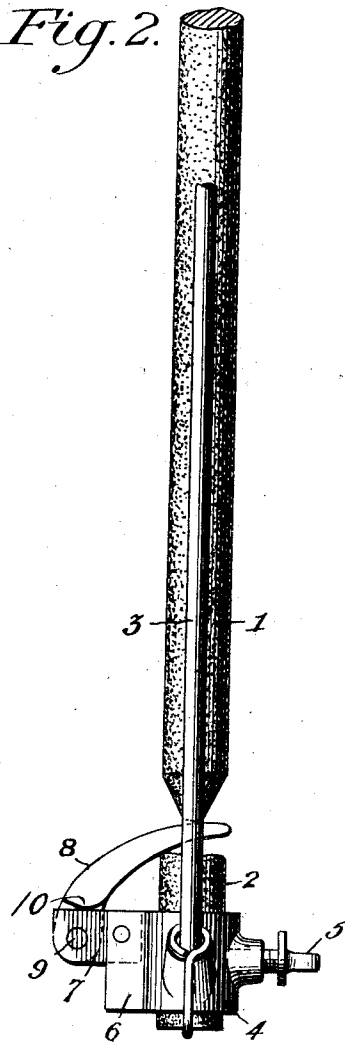


Fig. 2.



Witnesses.

E. C. Schurman.

T. B. Bunt.

Inventor.

O. F. Asbury

*by Lemuel Goldsberry and Will
Attys.*

UNITED STATES PATENT OFFICE.

ORLA F. ASBURY, OF CHARLOTTE, NORTH CAROLINA, ASSIGNOR OF ONE-HALF TO
DANIEL A. TOMPKINS, OF CHARLOTTE, NORTH CAROLINA.

ARC-LAMP SAFETY DEVICE.

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To all whom it may concern:

Be it known that I, ORLA F. ASBURY, a citizen of the United States, and resident of Charlotte, in the county of Mecklenburg and State of North Carolina, have invented certain new and useful Improvements in Arc-Lamp Safety Devices; 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.

The invention relates to improvements in arc lamps, and is particularly intended to provide means for preventing the upper or feeding carbon from short circuiting through the frame of the lamp when the lower carbon burns out or is displaced for any reason.

It frequently occurs that the lower or fixed carbon of an electric arc lamp burns out or is displaced or broken, so that the upper carbon, in its feeding movement, makes contact with the metal frame of the lamp, more particularly with the socket or holder for the lower carbon, and establishes an arc which quickly burns out the metal of the frame and renders the lamp useless.

The present invention is intended to provide an improved insulating device, which, while the lower carbon is of proper length and occupies its normal position, is held by said lower carbon in inoperative relation, but when said carbon falls below a predetermined length or is displaced from its socket, said device is automatically projected into the path of movement of the feeding carbon and between the end of the same and the frame of the lamp, thereby supporting the feeding carbon and preventing the same making electrical contact with the lamp frame.

In the accompanying drawings, Figure 1 is a perspective view of the carbons and the lower portion of an arc lamp, involving the invention. Fig. 2 is a side elevation of the same.

Referring to the drawings, 1 indicates the upper or feeding carbon of an arc lamp, and 2, the lower or stationary carbon. It will be understood that the upper carbon is secured in the lamp by the usual clutch mechanism to effect the striking of the arc and trimming of the lamp in the usual manner. The lower carbon 2 is supported in a socket 4, at the lower end of the metal frame work 3,

said carbon 2 being rigidly held within the socket by means of a set screw 5. Electrical contact is established between the lower carbon and the socket 4 in the well known way and this under ordinary conditions has the result that should said lower carbon burn down to the socket or become accidentally displaced while the current is on in the lamp, the upper carbon would establish a circuit and draw an arc between its lower end and the socket 4, or the adjacent metal frame work of the lamp, which would quickly destroy the lamp frame or damage the same to such an extent as to render it incapable of further use. In order to obviate this contingency, I provide a pivoted finger 8 which is preferably given a longitudinally curved form and tapers toward its free end, which is broad and flat. Said finger 8 is pivoted in a vertical plane in a lug or extension 6 formed on or secured to one side of the socket 4, the pivoting being effected by means of a pin 9 passing through two ears 7 set into the lug 6, and a single ear on the lower end of the finger 8. The finger is made of some refractory material best adapted for the purpose, such as porcelain, indurated fiber or the like, and when applied to its proper position on the lamp frame normally tends to assume the position indicated in Fig. 2 with its forward end overlying the socket and interposed in the path of movement of the feeding carbon 1. When the lower carbon is in position, the forward edge of the finger 8 engages the side of the said lower carbon so that the finger is held in the position indicated in Fig. 1.

Should the lower carbon burn to a point so that its upper edge falls below the forward edge of the finger 8, or should the lower carbon be broken off or accidentally displaced, said finger 8 swings on its pivot under the influence of gravity until its forward imperforate end is projected between the lower end of the upper carbon and the upper end of the lower carbon, thereby shutting off the carbons from each other and rupturing the arc, whereby further downward movement of the upper carbon is prevented. Should the lower carbon be displaced or broken off flush with the socket 4, the finger 8 swings below the upper carbon, and because of the fact that the movement of the finger 8 is limited by the engagement

of shoulder 10 with the ears 7, as indicated in Fig. 2, the upper carbon will be held sufficiently far away from the socket or the adjacent metal work of the lamp frame to prevent an arc being established between said upper carbon and the metal work.

It will be noted that the device is entirely automatic in its operation and will be absolutely effective in preventing the establishment of electrical contact between the feeding carbon and the lamp frame.

Although I have illustrated a simple and preferred form of the device to effect the result stated, it will be understood that the device is not limited to the form shown, but is capable of proper changes without departing from the spirit of the invention.

What I claim is:—

1. In an arc lamp, the combination with the carbons, and a fixed part of the lamp, of a vertically swinging member pivoted to said fixed part and operative to intercept the feeding carbon on the burning away or breaking of the fixed carbon.

2. In an arc lamp, the combination with the carbons, and a fixed part of the lamp, of a vertically swinging intercepting member pivoted to said part and having its free end arranged to rest against and be supported by the fixed carbon.

3. In an arc lamp, the combination with the holder of the fixed carbon, of a finger pivoted thereto to move in a vertical plane, and shiftable automatically into the path

of the feeding carbon when the fixed carbon is displaced or burned beyond a predetermined limit.

4. In an arc lamp, the combination with the upper and lower carbons, of a pivoted finger movable in a vertical plane and arranged to rest in inclined position with its free end uppermost and against the lower carbon.

5. In an arc lamp, the combination with the carbons, of a safety device comprising a pivoted finger mounted to extend at its free end between the carbons and thereby intercept the feeding carbon, said finger being curved longitudinally and tapered toward its free end.

6. In an arc lamp, the combination with the holder of the fixed carbon, of a finger pivoted thereto to move in a vertical plane, said finger being curved longitudinally and tapered toward its free end.

7. In an arc lamp, the combination with the carbons, of an intercepting finger fixedly pivoted and freely movable about its pivot, the free end of said finger being arranged to rest against the lower carbon, with said end above the pivot.

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

ORLA F. ASBURY.

Witnesses:

GEO. L. KRUEGER,

H. A. HUNTLEY.