No. 706,545. Patented Aug. 12, 1902.

R. FLEMING.

ELECTRIC ARC LAMP.

(Application filed Nov. 23, 1901.)

(No Model.)

Fig. 1.

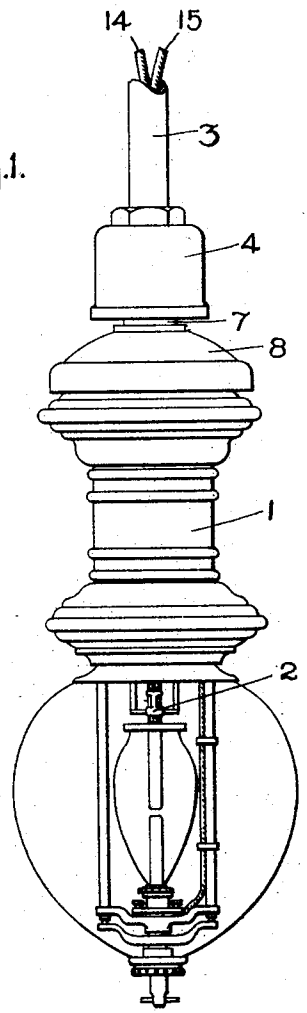
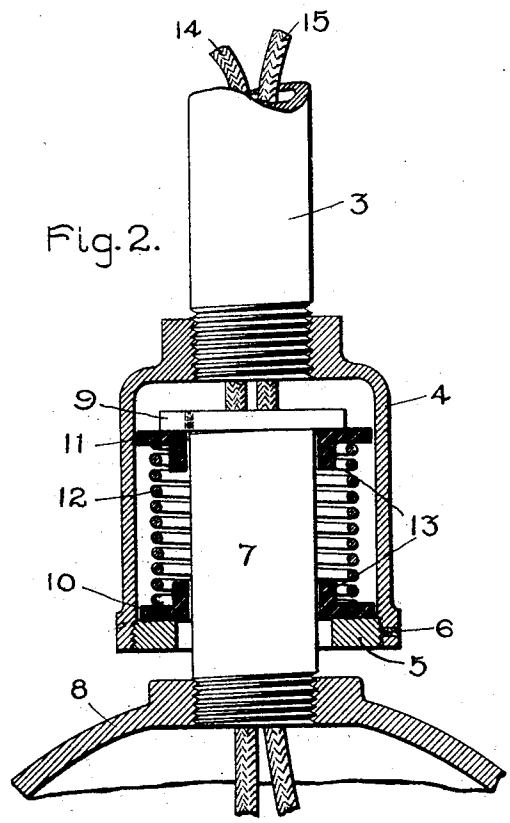


Fig. 2.



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UNITED STATES PATENT OFFICE.

RICHARD FLEMING, OF SWAMPSCOTT, MASSACHUSETTS, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 706,545, dated August 12, 1902.

Application filed November 23, 1901. Serial No. 83,401. (No model.)

To all whom it may concern:

Be it known that I, RICHARD FLEMING, a subject of the King of Great Britain, residing at Swampscott, county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Arc-Lamps, (Case No. 2,360,) of which the following is a specification.

The present invention relates to arc-lamps, more especially to their supports, and has for its object to provide a combined spring and insulating support whereby vibrations will be absorbed and all danger from short circuits or grounds prevented.

In the accompanying drawings, which illustrate an embodiment of my invention, Figure 1 is a side elevation of an arc-lamp and its support, and Fig. 2 is a vertical section of the support.

1 represents a gravity-feed lamp of ordinary construction having a clutch 2, which engages directly with the upper carbon. With lamps of this type there is a constant tendency of the upper carbon to feed, and when the lamp is subjected to vibrations for any reason it sometimes happens that the upper carbon will slip through the clutch independent of the action of the feeding-magnets. I overcome this objection by utilizing a spring-support of novel construction.

3 represents a fixed supporting-tube of any suitable construction having a screw-threaded lower end. Mounted on the lower end of the tube is a cylindrical cup-shaped casing 4, having a nut-like extension on its upper end, so that a wrench may be used in mounting it on the support. The sides of this casing are preferably closed at all points, so as to prevent the entrance of moisture or dirt, as the case may be. The lower end of the casing is screw-threaded to receive the disk 5. In order to prevent the disk from rotating, a small set-screw 6 is arranged to engage with the threads. The disk is perforated centrally to receive the short vertically-extending lamp-tube 7, which is screw-threaded to the upper end of the cover 8 of the lamp. Between the tube and the sides of the opening is a space, so that the current cannot pass from the lamp to the casing 4 and the supporting-tube 3.

The upper end of the lamp-tube 7 is provided with a head or shoulder 9. This shoulder is preferably made of a separate piece on account of the reduced cost of construction and either screw-threaded or riveted to the tube. Surrounding the tube at the lower end and resting on the disk 5 is an insulating-bushing 10, the latter being provided with an outwardly-extending flange, which makes an easy-working fit with the interior of the casing 4. The bushing also makes an easy-working fit with the tube, so that the latter is free to move up and down. By reason of the flange on the bushing the lamp-tube 7 is prevented from engaging with the disk 5 and establishing an electric circuit in case a ground exists on the lamp. The upper end of the lamp-tube is also provided with an insulating-bushing 11, which engages with the shoulder 9 and at the same time makes an easy-working fit with the interior of the casing. Located between the upper and lower bushings and surrounding the tube is a coiled compression-spring 12, which supports the entire weight of the lamp. Any vibration of the support 3 is therefore taken up by the spring instead of being transmitted to the lamp mechanism. Consequently the liability of the upper carbon to slip through the clutch independent of the action of the usual feeding mechanism is eliminated. The spring is prevented from engaging with the casing and carrying current thereto from the lamp-tube 7 by the tubular portion 13 of the bushings. Current to and from the lamp is conveyed by the flexible cables 14 and 15.

The coiled spring 12, being of the compression type, will continue to support the lamp even though it is broken. By making the head 9 greater in diameter than the opening in the disk 5 the lamp cannot drop to the ground or be accidentally displaced.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a suspension device for arc-lamps, the combination of a support which is secured to the lamp, a fixed support, a spring located between the supports and arranged to sustain the weight of the lamp, and insulating-bushings which prevent current from being trans-

ferred from one support to the other, at the same time permitting the parts to move slightly with respect to each other.

2. In an arc-lamp, the combination of a tube which is secured to the lamp, a second tube capable of being secured to a fixed support, a casing secured to one of the tubes, a lamp-supporting spring which surrounds one of the tubes and is located within the casing, and a body of insulation which separates the metallic parts of the lamp from the support, and also acts as a guide to direct the movements of the tubes.

3. In a suspension device for an arc-lamp, the combination of a support secured to the lamp which has an enlarged head, a casing which surrounds the support, and is provided with a seat, insulating-bushings which surround one of the supports, and act as guides for the parts as they move with respect to each other, and a lamp-supporting spring which is located between the bushings.

4. In a lamp-supporting device, the combination of a supporting-tube, a casing secured thereto, a perforated disk mounted on the lower end of the casing, a lamp-tube having a head, a pair of oppositely-disposed insulating-bushings, each bushing having a flange which engages the inner wall of the casing, one of said bushings resting on the head, the other on the disk, and a lamp-supporting spring which surrounds the lamp-tube and engages with the bushing and is prevented by them from making electrical contact with the tubes.

5. In a lamp-supporting device, the combination of a lamp-cover, a tube secured thereto, a supporting-tube, a casing secured thereto, a disk which is perforated centrally for closing the bottom of the casing, a head formed on the lamp-tube which is greater in diameter than the opening in the disk, and a coiled compression-spring located between the head and the disk.

In witness whereof I have hereunto set my hand this 21st day of November, 1901.

RICHARD FLEMING.

Witnesses:

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