Nov. 7, 1933. G. LESSMANN 1,934,435

CUT-OUT DEVICE FOR ELECTRIC LAMPS

Filed Oct. 28, 1929

Fig. 1

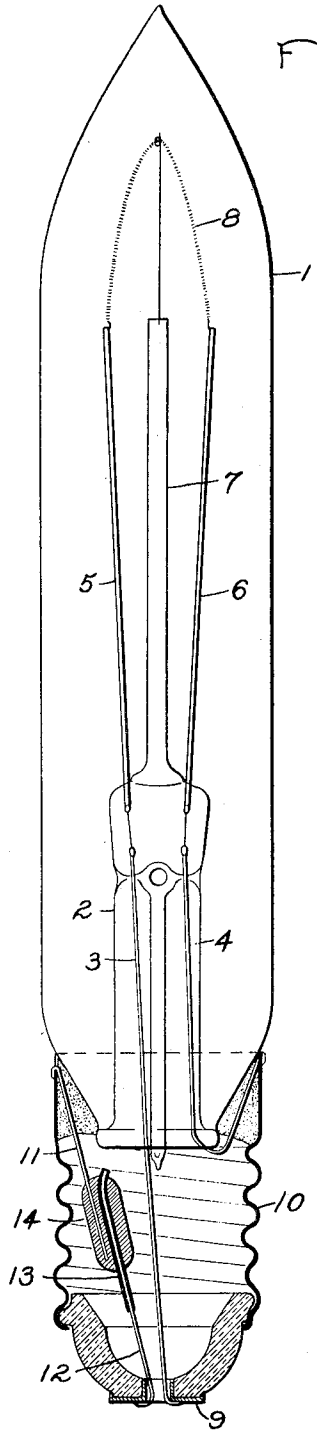
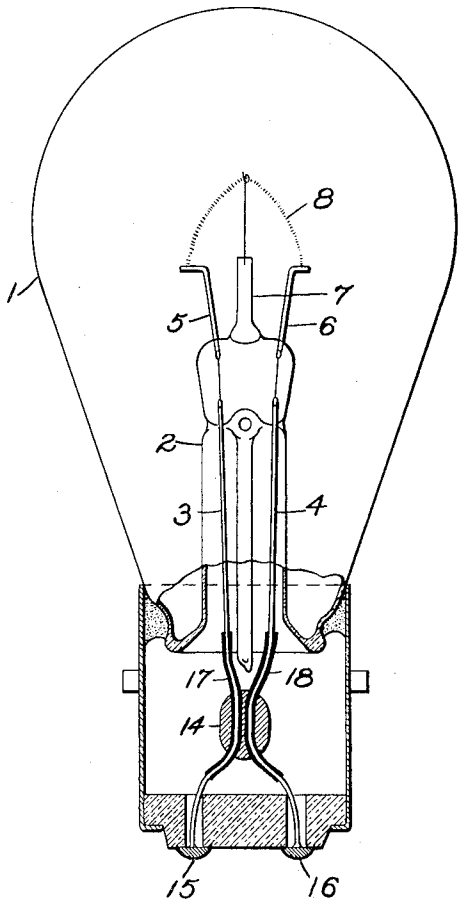


Fig. 2



INVENTOR:
GOTTFRIED LESSMANN,
BY Charles V. Mullan
HIS ATTORNEY

Patented Nov. 7, 1933 1,934,435

UNITED STATES PATENT OFFICE

1,934,435

CUT-OUT DEVICE FOR ELECTRIC LAMPS

Gottfried Lessmann, Rehbrucke, Germany, assignor to General Electric Company, a corporation of New York

Application October 28, 1929, Serial No. 402,820, and in Germany November 13, 1928

3 Claims. (Cl. 176—24)

My invention relates to electric incandescent lamps and more particularly to lamps to be connected in series. Still more particularly my invention relates to short-circuiting devices comprised in such lamps for cutting out a particular lamp upon failure thereof. It has been proposed, heretofore, to provide a short-circuiting means by bringing portions of the outer leads close together, separating them by a film of an oxide such as aluminum oxide or copper oxide. I follow that practice but I also surround said portions of the leads, one or both of which are provided with normally insulating coatings, with a fused mass of material, to hold them in definite relation to each other. I prefer to constitute said mass of an easily fusible metal such as lead although an easily fusible non-metal such as synthetic resin may serve. The object is to fix the leads in proper position without injuring the insulation and at the same time to exclude foreign materials.

In the drawing, Figs. 1 and 2 are elevations partially in section of electric incandescent lamps embodying short-circuiting devices comprising my invention.

The lamps shown in Figs. 1 and 2 consist of the usual bulb 1 with stem 2 into which are embedded portions of the current supply leads 3 and 4 and support wires 5 and 6. The stem shown is of the tipless lamp type disclosed in Mitchell and White Patent No. 1,423,956. The glass support rod 7 and the filament 8 are supported by said stem. In the lamp shown in Fig. 1, the lead 3 is connected to the eyelet 9 of the base and the lead 4 to the threaded shell 10. The short-circuiting device comprises the wires 11 and 12, the former being connected with the shell 10 and the latter to eyelet 9 and the opposite end portions are in juxtaposition. These wires may be of any metal such as copper or aluminum, and one of them, 12, is coated with a film of normally insulating material such as an oxide of the metal. Preferably the wire 12 is of aluminum with a coating of aluminum oxide 13. Enclosing and holding the wires in place at their parallel section is the mass of easily fusible material 14.

The mass 14 may be made of lead or some other easily fusible metal or of some insulating material such as a synthetic resin. The metal mass does not require an extremely close placing of the overlapping sections as is required when using an insulating material. The insulating material, if used, must be excluded from between the wires as it would vary the breakdown voltage. The metal mass allows the wires to be spaced as shown, in view of the conductivity of said metal. In other words, a metal is particularly desirable because if insulating materials are used care must be taken that the wires are placed very close together so that the said insulating material does not get between the said wires since this would unduly increase the breakdown strength of the device.

The lamp shown in Fig. 2 is made up of the same parts as those shown in Fig. 1 except for a different type of base which calls for a modified form of short-circuiting device. The leads 3 and 4 are brought close together and the contiguous portions are surrounded by the mass 14. The leading-in wires are each covered with an insulating oxide film 17 and 18, respectively, for that portion thereof which is surrounded by the said mass.

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

1. In an electric lamp, the combination of a pair of leads having portions thereof juxtaposed, a film of normally insulating material surrounding at least one of said portions and a mass of easily fusible metal fused around said portions including said film and holding them in definite relation to each other.

2. In an electric lamp, the combination of a pair of leads having portions thereof juxtaposed, a film of metallic oxide surrounding at least one of said portions and a mass of easily fusible metal fused around said portions including said film and holding them in definite relation to each other.

3. In an electric lamp, the combination of a pair of leads having portions thereof juxtaposed, a film of metallic oxide surrounding at least one of said portions and a mass of lead fused around said portions including said film and holding them in definite relation to each other.

GOTTFRIED LESSMANN.