

Dec. 6, 1938.

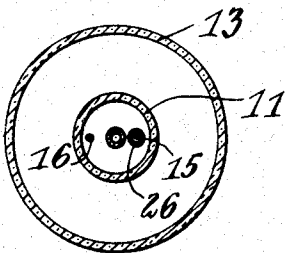
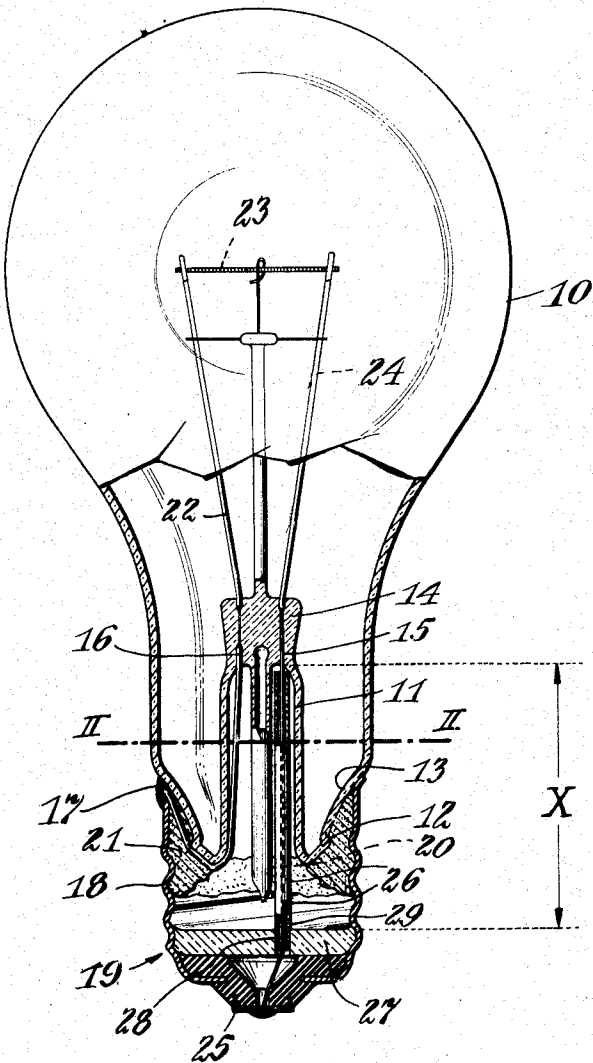
W. E. ANDERSON ET AL


2,139,252

LAMP FUSE PROTECTOR

Filed May 27, 1936

 1.



 2.

INVENTOR
W. E. ANDERSON
J. A. LINDER
BY *M. F. Reese*
ATTORNEY

UNITED STATES PATENT OFFICE

2,139,252

LAMP FUSE PROTECTOR

Waldemar E. Anderson and John A. Linder,
Montclair, N. J., assignors, by mesne assignments,
to Westinghouse Electric and Manufacturing Company,
East Pittsburgh, Pa., a corporation of Pennsylvania

Application May 27, 1936, Serial No. 81,994

6 Claims. (Cl. 176—30)

This invention relates to incandescent electric lamps or the like and more particularly to lamps in which a fuse constitutes part of a lead wire.

It is the practice in certain types of incandescent electric lamps, particularly high-wattage lamps, to provide one of the lead wires with a fuse. The fuse is provided for the reason that in some cases the burning out of the filament of an incandescent electric lamp causes an arc to form therein which may result in the bursting of the bulb and the blowing of the fuse in the main line. In some cases, the arc travels down the lead wires of the lamp and into the base and socket before the main fuse opens the circuit, causing considerable damage.

In practice it has been found desirable, therefore, to place a fuse in that portion of the lead wire extending from the stem press to the lamp base. It sometimes happens, however, that when the fuse melts the metallic vapor sets up a conductive path and an arc starts between the leads.

The present invention provides a fuse with a protective housing which serves to prevent the formation of an arc between the leads. It is necessary, however, to enclose completely the lead wire in which the fuse is incorporated, and for this purpose a tubular insulative covering is provided. The tubular covering or housing is of such character as to be adjustable as to length to meet certain variations in the dimensions which vary in different lamps, as will hereinafter be more fully described.

In copending application Serial No. 82,021, filed May 27, 1936, and assigned to the present assignee, a lamp fuse housing of flexible material to meet varying dimensions is provided. The present invention provides a rigid member, preferably a glass tube, which is held in place by means cooperating with the lamp base and which may be adjusted by a slight movement relative to the holding means.

An object of the present invention, therefore, is to provide a lamp fuse with a closed chamber to prevent arcing between the leads by reason of the conductive path resulting from the metallic vapor formed when a fuse melts.

Another object of the invention is to provide a simple form of fuse housing which may be held in position surrounding the lead wire in which the fuse is incorporated and which may be adjusted as to length.

A further object of the invention is to provide a fuse housing supported by an insulative wall which serves as a barrier against the formation

of an arc between the lower part of the fuse lead and the other lead or base shell of the lamp.

Other objects and advantages will be more clearly understood by reference to the following description together with the accompanying drawing in which:

Figure 1 shows an incandescent electric lamp partly in section with the present invention applied thereto and

Fig. 2 is a view taken on line II—II in Fig. 1.

The present invention may be applied to a lamp including a bulb 10, having the usual flare tube 11 sealed at 12 to the bulb neck 13. The flare tube extends into the bulb and is provided with a press 14 through which lead wires 15 and 16 extend. One end of lead wire 16 is connected at 17 to the metallic shell 18 of a base 19 which base is attached to the bulb neck by cement 21. The other end of the lead wire 16 extends into the bulb and is connected to a support wire 22 which in turn is connected to one terminal of a filament 23. The other terminal of the filament is connected to one end of a support wire 24, the other end of which is connected to one end of lead wire 15. The lead wire 15 extends to the center contact 25 of the base 19 and is of reduced diameter to serve as a fuse 20.

Surrounding the fuse is a tubular housing 26, preferably in the form of a glass tube, but it may be of any suitable insulative material. In the base 19 is disposed a disk 27 of any suitable material, such as asbestos, provided with an aperture 28 to receive one end 29 of the tube 26 which surrounds the fuse 20. The other end of the tube extends up to and contacts with the press 14. The end 29 of the tube 26 tightly, but slidably, fits the aperture 28. As the base is applied, the upper end of the tube is brought into contact with the press, and as the base is forced into position, the tube 26 will move into the aperture 28 to accommodate any variation in dimension resulting from variations in the dimensions of the parts.

The tubular casing, in the present embodiment, surrounds the fuse lead, and provides a substantially closed chamber.

It will be understood that lamps of the character to which the present invention relates are made at a high rate of speed and certain variations occur in the dimensions of the parts and in their relative positions. For example, distance X indicated on the drawing may vary by reason of the position of the press with relation to the bulb neck or the diameter of the bulb neck may vary, thus changing the position of the base with

respect to the flare tube. On the other hand, the length of the flare tube may vary.

When applying the present tubular housing, the disk 27 is forced into the bottom of the base, and the end 29 of the tube 26 is thrust into the aperture 28. The lead wire with the fuse is then threaded through the tube and the base is applied in the usual manner. As the base is moved to position against the bulb neck, the upper end of the tube is engaged by the under side of the press 14 and, as the bulb and base are moved together, the tube can be forced further into aperture 28, thus providing for a variation in the effective length of the tube to accommodate variations in the distance indicated by the reference character X.

Although a preferred embodiment of the invention is shown and described herein, it is to be understood that modifications may be made therein without departing from the spirit and scope of the invention as set forth in the appended claims.

We claim:

1. A vacuum device comprising a bulb, a flare tube having a press and sealed to the bulb neck, a base secured to said neck, a lead wire in said tube, a fuse in a portion of said lead wire, said lead wire extending in said flare tube to said base, a tubular housing for said lead wire extending from press to base, held at one end by said flare tube, and means carried by said base for supporting the other end of said housing.

2. A vacuum device comprising a bulb, a flare tube sealed to the bulb neck, a base secured to said neck, a lead wire, a fuse in a portion of said lead wire, said lead wire extending from said flare tube to said base, a tubular housing for said lead wire, and a disk in said base having an aperture to receive one end of said housing.

3. A vacuum device comprising a bulb, a flare tube sealed to the bulb neck, a base secured to said neck, a lead wire, a fuse in a portion of said lead wire, said lead wire extending from said flare tube to said base, a tubular housing for said lead wire, and a disk in said base, said disk having an aperture slidably receiving one end of said housing, whereby said housing may be adjusted longitudinally and held in an adjusted position.

4. A base for a vacuum device comprising a tubular housing for enclosing a lead wire, a disk secured in said base, and means for adjustably supporting said housing on said disk.

5. A base for a vacuum device comprising a tubular housing for enclosing a lead wire, a disk secured in said base, said disk having an aperture to receive one end of said housing to support said housing for adjustment relative to said disk.

6. A base for a vacuum device comprising an open-ended tubular housing, a fuse wire therein with its ends extending beyond said housing, and apertured means in said base for supporting and slidably receiving one end of said housing.

WALDEMAR E. ANDERSON.
JOHN A. LINDER.