

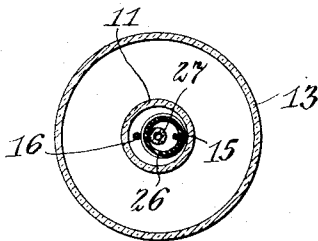
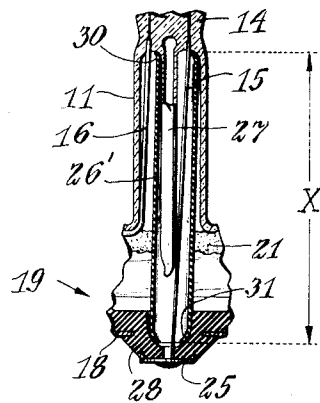
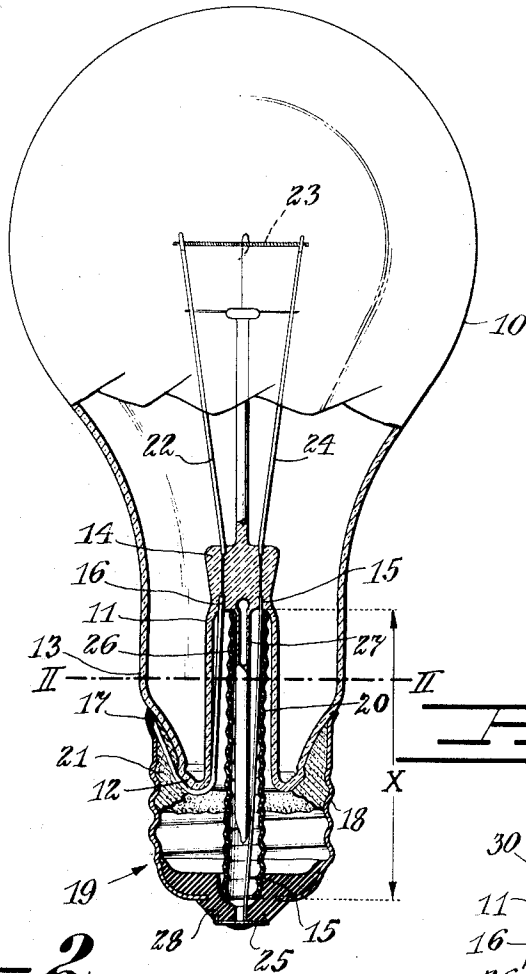
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PROTECTOR FOR LAMP FUSES

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PROTECTOR FOR LAMP FUSES

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5 Claims. (Cl. 176—30)

This invention relates to incandescent electric lamps or the like and relates 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 breaking or 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 main 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 breaks, causing considerable damage.

In practice it has been found desirable to place the lamp fuse in that portion of the lead wire extending from the bulb 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.

It is an object of the present invention to provide a fuse for a lamp with a closed chamber to prevent arcing between 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 fuse lead for a lamp with a housing capable of being adjusted to meet variations in the relative positions of the parts of the lamp.

Another object of the invention is to provide a housing of flexible material for a lamp fuse which may be varied in length to accommodate variations in the dimensions of the parts of the lamp.

The invention will be more clearly understood from the following description together with the accompanying drawing in which:

Figure 1 is a side elevational view of a lamp partly in cross section showing an embodiment of the present invention;

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

Fig. 3 shows a modification of the invention

in which a flexible housing is used having end portions bent to vary the effective length of the housing.

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 housing or tubular casing 26. This casing, in the present construction, also surrounds an exhaust tube 27 which depends from the press 14.

The tubular casing preferably surrounds the fuse lead although it could be placed around the other lead and serve its purpose. To be effective, however, the tube must cover the fusible part of the lead and provide a 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.

For the purpose of providing a practical housing for the fuse lead that could be applied irrespective of variations in dimensions, a tube of flexible material is provided preferably with one or more folds or corrugations to give a diaphragm action for adjustment between the press and the lower wall 28 of the base. This lower wall is made of an insulating material such as glass and is in the form of a web which carries the contact 25 and at the same time insulates it from the shell 18.

When applying the present tubular housing, it is slipped over the lead wire and one end is thrust against the lower side of the press. If desirable, 55

1 folds may be of such diameter as to frictionally
engage the wall of the flare tube so that when in
position the housing will remain temporarily in
position until the base 19 is applied to the bulb
5 neck. The normal length of the tube 26 may be
great enough to bring the end of the housing in
contact with the base slightly before the base is
in its final position, thus forcing the tube against
the press and permitting it to become adjusted
10 and provide a closed chamber for the fuse lead.

In the modified construction shown in Fig. 3,
the tube or housing 26' is cylindrical, but of flex-
ible or soft insulative material. Thus, when the
base 19 is in position and the base is forced against
15 the bulb neck, the ends 30 and 31 of the housing
are pressed against the web 28 and the press 14
and crimped over to shorten the housing to the
dimension necessary. As shown, the end 31 seats
in a cup or socket in the base. This construction
20 is also shown in Fig. 1.

The invention contemplates any form of hous-
ing that is automatically adjusted as the base is
applied and modifications may be made to attain
this result. For example, the housing or tube may
25 be telescopic or one end may be softened, and the
major portion may be rigid. It has been found
practical to use asbestos material for the housing
although any other insulative sheet material may
be employed.

30 By reason of the present invention, it is possible
to provide a protective sleeve which effectively
prevents arcing between the leads by providing
a chamber for confining any metallic vapor that
may form when a fuse melts, thus avoiding the
35 formation of a destructive arc.

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

What is claimed is:

1. An incandescent electric lamp comprising a
bulb, a flare tube sealed to the bulb neck, a base,
a lead wire including a fuse extending from said
flare tube to said base and a flexible insulative
housing for said fuse.

2. An incandescent electric lamp comprising a
bulb, a flare tube sealed to the bulb neck, a base,
a lead wire including a fuse extending from said
flare tube to said base and a tubular insulative
housing for said fuse, said housing having corruga-
tions in the wall thereof whereby the effective
length of said housing may be varied.

3. An incandescent electric lamp comprising a
bulb, a flare tube sealed to the bulb neck, a base,
a lead wire including a fuse extending from said
flare tube to said base, and a tubular insulative
housing having the ends thereof in compressive
relation with said flare and said base.

4. An incandescent electric lamp comprising a
bulb, a flare tube having a press sealed to the neck
of said bulb, a base secured to said bulb neck,
lead wires extending from said press to said base,
a fuse in a portion of one of said lead wires inter-
mediate said press and base, and a flexible insu-
lative tubular housing for said portion, said hous-
ing being compressed endwise between said base
and said press to provide a closed chamber for
said fuse to prevent the formation of an arc be-
tween said lead wires.

5. An incandescent electric lamp comprising a
bulb, a flare tube having a press sealed to the neck
of said bulb, a base secured to said bulb neck,
lead wires extending from said press to said base,
a fuse in a portion of one of said lead wires inter-
mediate said press and base, and a corrugated
insulative tubular housing for said portion, said
housing being compressed endwise between said
base and said press to provide a closed chamber
for said fuse to prevent the formation of an arc
between said lead wires.

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