

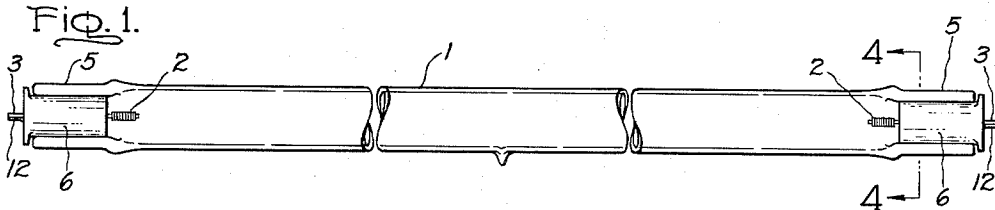
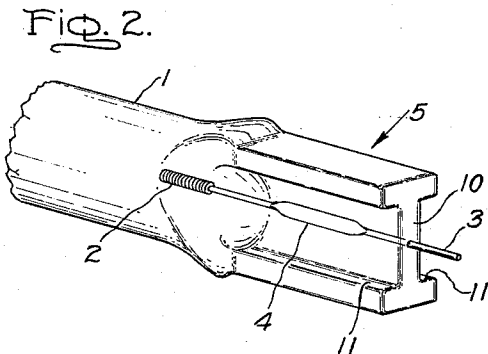
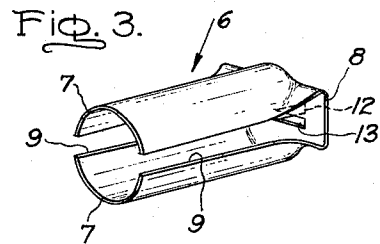
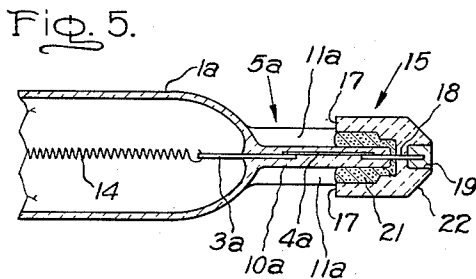
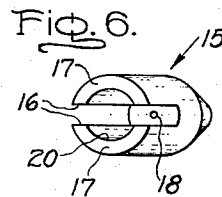
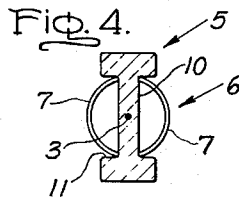
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LAMP BASE AND TERMINAL STRUCTURE

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LAMP BASE AND TERMINAL STRUCTURE

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This invention relates generally to electric lamps or similar devices comprising a sealed envelope of vitreous material containing electrical energy translation means such as a filament or electrodes. More particularly, the invention relates to base and terminal structures for such devices, especially for devices of the double-ended type having a base at each end for supporting the device in spaced holders or sockets and conducting current thereto.

It is among the objects of the invention to provide a base and terminal structure of low cost, high strength, ease of assembly and accurate location of the base on the envelope.

In accordance with one aspect of the invention, the envelope is formed at an end thereof, and at both ends in the case of a double-ended device, with an external pinch seal of I shape in cross section through which extends a lead-in conductor, and the terminal structure comprises a base member having leg portions which snugly straddle the web portion of the I-shaped pinch seal and fit snugly within and between the sides of the channel portions at each side of said web portion. The said base member may be of cylindrical shape, with the said leg portions defined by a diametral slot extending longitudinally of the member from one end thereof. The base is thereby positioned properly on the confined pinch seal, and the I-shaped seal possesses a high degree of strength.

Further features and advantages of the invention will appear from the following detailed description of species thereof and from the drawing wherein:

FIG. 1 is a plan view of a double-ended gaseous electric discharge lamp having a terminal and base structure comprising the invention;

FIG. 2 is a fragmentary perspective view of an end of the lamp showing the pinch seal;

FIG. 3 is a perspective view of the base member;

FIG. 4 is a section through the assembled base member and pinch seal along the line 4—4 in FIG. 1;

FIG. 5 is a plan view in section of an incandescent lamp having a modified terminal structure; and

FIG. 6 is a perspective view of the base structure shown in FIG. 5.

Referring to FIG. 1 of the drawing, the lamp illustrated therein comprises an elongated tubular envelope 1 of vitreous material, such as quartz or glass, containing an ionizable gaseous atmosphere for supporting a gaseous electric discharge between a pair of electrodes 2 at the ends of the envelope. Each of the electrodes 2 is carried by a lead-in conductor 3 having a very thin flattened or foliated intermediate portion 4 hermetically sealed in a pinch seal portion 5 at the end of the envelope. The conductor 3 may be formed of molybdenum when the envelope 1 is of quartz.

In accordance with the invention, the pinch seal 5 is accurately formed to an I-shaped cross section (FIG. 2) to snugly receive and properly position a base member 6 such as that shown in FIG. 3. The said base member 6 is formed of sheet metal to what may be described as a U shape with cylindrical leg portions 7 and a flat base or end portion 8. The said member 6 may also be described as a cylindrical shell having a diametral slot 9 extending longitudinally from one end thereof to define the leg portions 7. The slot 9 is of a size such that the legs 7 snugly straddle the web portion 10 of the I-shaped seal 5 and fit snugly between the sides of the chan-

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nel portions 11 at each side of the web portion 10, as seen in FIG. 4.

The lead-in conductor 3 is electrically connected in any suitable manner to the base member 6. As herein illustrated, the end 8 of the base member 6 has a tab 12 stamped out at right angles thereto, and the outer end of the rigid lead wire 3 extends through the resulting aperture 13 and is secured, preferably by welding, to the tab 12. The base member 6 is thereby held securely in place on the seal portion 5, and it may be fitted into a clip-type contact holder or socket such as that used for cartridge-type fuses.

In FIG. 5 there is shown an incandescent electric lamp of double-ended tubular type comprising a vitreous envelope 1a containing a tungsten filament 14 which is connected at each end to a lead-in conductor 3a having an intermediate foil section 4a which is hermetically sealed in a pinch seal portion 5a of I-shaped cross section like that shown at 5 in FIG. 2. The terminal structure comprises a cylindrical metal base member 15 having a diametral slot 16 (FIG. 6) extending longitudinally from one end thereof and defining leg portions 17 which straddle the web portion 10a of the I-shaped pinch seal 5a and are of a width to fit snugly in the channel portions 11a at each side of said web portion. The outer end of the lead-in wire 3a extends through an axial aperture 18 in the base member 15 and into a recess or aperture 19 in the end thereof which is filled with silver solder to electrically connect the base 15 with the filament.

The leg portions 17 of the base 15 may be hollowed out by a bore 20 to provide room for a basing cement 21 when desired. Also, when desired, the end of the base 15 may be tapered as shown at 22 to provide for accurate prefocusing of the lamp for mounting in a socket of suitable design. The axis of the base 15 is accurately aligned with that of the filament 14 when attaching the base to the seal portion 5a, and the lamp is supported between opposed tapered socket terminals at least one of which is resiliently biased toward the other. It will be understood that the cement 21 may be omitted and the base 15 pressure fitted by relying on the web and flanges of the I-beam seal for alignment of the base.

While the invention has been illustrated by the above description of species thereof, it will be understood that the base and terminal structure may be widely varied and modified within the spirit and scope of the invention.

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

1. An electrical device comprising a sealed envelope of vitreous material containing electric energy translation means and having an external pinch seal portion at an end thereof and a lead-in conductor extending there-through from said electric energy translation means, said seal portion having substantially an I shape in cross section with accurately formed channels at each side of the web portion of the I-shaped section, and a terminal structure mounted on said end of the envelope and comprising a base member having leg portions snugly straddling the said web portion of the pinch seal and fitting snugly between the sides of the said channel portions.

2. An electrical device comprising a sealed envelope of vitreous material containing electric energy translation means and having an external pinch seal portion at an end thereof and a lead-in conductor extending there-through from said electric energy translation means, said seal portion having substantially an I shape in cross section with accurately formed channels at each side of the web portion of the I-shaped section, and a terminal structure mounted on said end of the envelope and comprising a cylindrical base member having leg portions defined by a diametral slot extending longitudinally of the member from one end thereof and snugly straddling the

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said web portion of the pinch seal and fitting snugly between the sides of the said channel portions.

3. An electrical device comprising an elongated sealed envelope of vitreous material containing electric energy translation means and having an external pinch seal portion at each end thereof and a lead-in conductor extending therethrough from said electric energy translation means, said seal portion having substantially an I shape in cross section with accurately formed channels at each side of the web portion of the I-shaped section, and a terminal structure mounted on each said end of the envelope and comprising a base member having leg portions snugly straddling the said web portion of the pinch seal and fitting snugly between the sides of the said channel portions.

4. An electrical device comprising a sealed envelope of vitreous material containing electric energy translation means and having an external pinch seal portion at an end thereof and a lead-in conductor extending there-through from said electric energy translation means, said

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seal portion having substantially an I shape in cross section with accurately formed channels at each side of the web portion of the I-shaped section, and a terminal structure mounted on said end of the envelope and comprising a metallic base member having leg portions snugly straddling the said web portion of the pinch seal and fitting snugly between the sides of the said channel portions, said lead-in conductor being electrically connected to said base member.

References Cited in the file of this patent

UNITED STATES PATENTS

669,306	Howell	Mar. 5, 1901
1,578,358	Penin	Mar. 30, 1926
1,731,832	Terrill	Oct. 15, 1929
2,705,310	Hodge	Mar. 29, 1955

FOREIGN PATENTS

922,064	Germany	Jan. 7, 1955
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