Jan. 11, 1938. P. O. CARTUN 2,105,404

INCANDESCENT LAMP AND SIMILAR DEVICE

Original Filed May 3, 1933

Fig. 1.

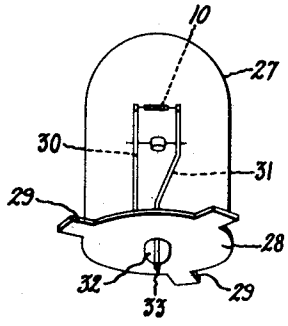


Fig. 2.

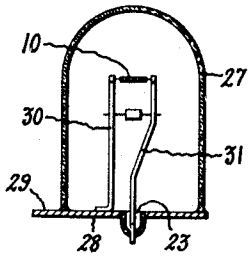


Fig. 3.

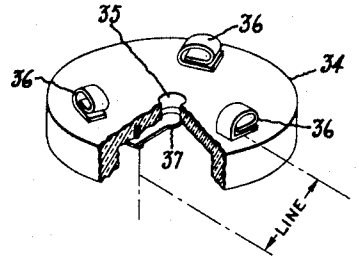


Fig. 4.

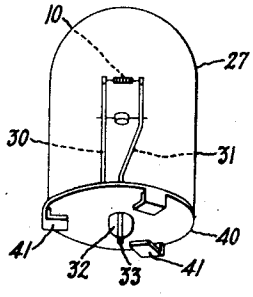
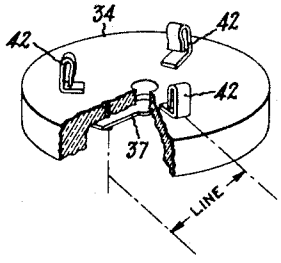


Fig. 5.



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Patented Jan. 11, 1938

2,105,404

UNITED STATES PATENT OFFICE

2,105,404

INCANDESCENT LAMP AND SIMILAR DEVICE

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Original application May 3, 1933, Serial No. 669,189. Divided and this application December 18, 1936, Serial No. 116,583

5 Claims. (Cl. 176—32)

My invention relates to electric incandescent lamps and similar devices comprising an electric energy translation element, such as a filament, enclosed or sealed in a bulb or envelope. The present case is a division of my prior application Serial No. 669,189, filed May 3, 1933, Patent No. 2,084,192.

Heretofore the practice has been to provide such a device with a separate "base" united to its hermetically sealed glass bulb or envelope by cement or other means; this bulb supporting the internal "mount" of the lamp or the like, comprising the translation element and its supporting structure inside the bulb. Typically, the unitary base structure not only serves as a means for mounting the lamp, but also includes terminals or contacts connected to conductors leading into the bulb through the glass to the translation element inside.

According to my invention, as distinguished from the practice above mentioned, the bulb neck or end is sealed to an end member on which the internal mount of the lamp is mounted independently of the attachment of the bulb. This member or disc is provided with engagement means for mounting the lamp. In this way, the member or disc becomes an integral part of the lamp,—even, indeed, a part of the enclosing envelope itself. The internal mount of the lamp is supported directly by the member or disc, instead of through the medium of the bulb, as heretofore. The current leads need no longer pass through the glass envelope; the usual separate basing operation can be eliminated; and it becomes much easier to locate the translation element accurately and uniformly with reference to the engagement means of the base. This is specially advantageous for lamps used with light projection devices such as reflectors, projectors with lenses, etc.; since by accurately locating their sockets or other lamp holding means according to definite standards, standard lamps constructed according to my invention can be efficiently used in them without any necessity or provision for focussing adjustments. Moreover, the lamp is much simpler and stronger, and less expensive to make. Various other features and advantages of the invention will appear from the following description of species thereof, and from the drawing.

In the drawing, Fig. 1 is a perspective view of a lamp embodying my invention; Fig. 2 is a vertical section thereof; Fig. 3 is a perspective view partly sectioned of a mounting for the lamp shown in Figs. 1 and 2; Fig. 4 is a perspective view of another species of lamp; and Fig. 5 is a view similar to Fig. 3 of another species of mounting.

The lamp shown in Figs. 1 and 2 comprises a glass bulb or envelope 27 abutting endwise and sealed against an apertured sheet metal disc 28 which itself forms the terminal device or base of the lamp. This disc 28 has securing wings, ears, or blades 29 formed by integral extensions of the metal from the generally circular disc periphery, for engaging suitable mounting means. The internal lamp mount comprising a filament 10 and lead wires 30, 31 is supported by the disc 28. The wire 30 is welded to the disc, one of whose wings 29 serves as a base contact, and the wire 31 is secured and insulated in the fused glass tip or "spur" 32 sealing the disc opening, and projects therefrom as a central bottom contact 33.

The bulb 27 is preferably made of soft glass, and the disc 28 of a metal or alloy (such as an iron alloy containing about twenty-five per cent of chromium) which has the same thermal coefficient of expansion as glass, and to which glass is readily sealable. In the sealing operation, the end of the bulb 27 may be pressed while hot against the heated disc 28 and thereby sealed thereto. In mounting the filament supporting structure on the disc 28, the wire 30 may be attached by welding it to the disc, and the wire 31 may extend through an opening 23 in the disc, and be embedded and secured in the fused body of glass 32 which closes and seals the opening. The seal 32 may be formed from the residue of a glass exhaust tube (not shown) sealed to the disc at the opening 23, and sealed off (after use) around the wire 31. The portion of the wire 31 embedded in the glass 32 is preferably made of material similar to the disc 28, or such as heretofore used for incandescent lamp leads sealed in glass.

Fig. 3 shows a mounting device for the lamp of Figs. 1 and 2, comprising an insulative base plate 34 with a central socket hole 35 for the base spur 32, spring contact clips 36 for receiving and gripping the disc wings 29, and a spring finger 37 for abutting against the center contact 33. Current supply conductors are connected to one (at least) of the clips 36 and to the finger 37. To mount the lamp in this device, its bottom spur 32 is inserted or pressed home in the hole 35 with the wings 29 intermediate the clips 36, and the lamp is then turned clockwise about the spur 32 as a pivot sufficiently to force the wings 29 into the clips, which yield resiliently to receive and grip the wings. The wings or blades 29 underlock with the upper portions of the clips 36.

Fig. 4 shows a lamp similar to that of Figs. 1 and 2, but with a larger iron-chromium sheet metal disc 40, having its integral peripheral wings or blades 41 retroverted under the disc 40 with clearance between sufficient to take the upper members of the clips 36 in Fig. 3; so that when the lamp is mounted, the securing means and connections are all concealed under the disc.

Fig. 5 shows another mounting device, with (three) upstanding inward-shouldered spring contact clips 42 amongst which the discs 28 or 40 of Figs. 1 and 4 may be inserted and peripherally engaged. Otherwise, this device is like that of Fig. 3. With this Fig. 5 device, the wings 29 of Fig. 1 would be superfluous, and the wings 41 of Fig. 4 would act as mere spacers to augment the effective thickness of the discs with reference to its edge engagement under the clip shoulders.

The iron chromium alloy (hereinbefore referred to) which I prefer is one marketed by the Allegheny Steel Company as "Allegheny 55", of which the following is a typical percentage-by-weight analysis:

Iron	67.6 to 71.5
Chromium	26 to 30
Manganese	Under 1
Nickel	Under .6
Silicon	Under .6
Carbon	Under .25
Sulphur	Under .025
Phosphorus	Under .025

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

1. An electric device comprising a glass bulb; and a metal disc sealed to the end of said bulb as an end wall therefor, and provided with a bottom pivot and contact spur and with securing blades engageable and disengageable by turning the lamp.

2. An electric device comprising a glass bulb; and a metal disc sealed to the end of said bulb as an end wall therefor, and provided with a bottom pivot and contact spur and with peripheral mounting wings retroverted beneath the disc.

3. An electric device comprising a glass bulb; and a metal disc sealed to the end of said bulb as an end wall therefor, and provided with a bottom contact insulated therefrom and with underlocking securing blades.

4. An electric device comprising a glass bulb; and a sheet metal disc abutting and sealed against the end of said bulb, and provided with a bottom spur and contact and with underlocking securing blades formed by extensions of the disc sheet.

5. An electric device comprising a glass bulb; and a metal disc sealed to the end of said bulb as an end wall therefor, and provided with a bottom contact insulated therefrom and with integral peripheral securing means, and a filament in said bulb connected to said disc and to said bottom contact.

PAUL O. CARTUN.