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D. S. GUSTIN ET AL
LOCOMOTIVE HEADLIGHT LAMP
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1,986,473

Fig. 1.

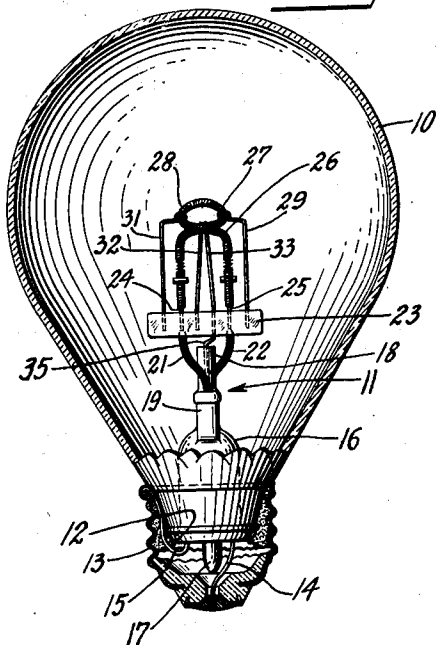


Fig. 3.

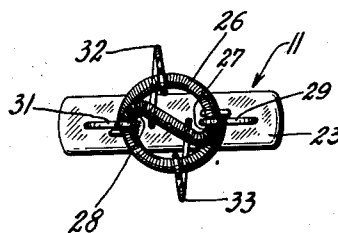


Fig. 2.

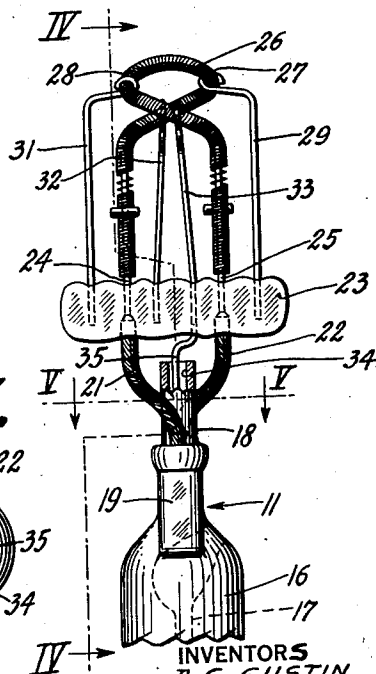


Fig. 4.

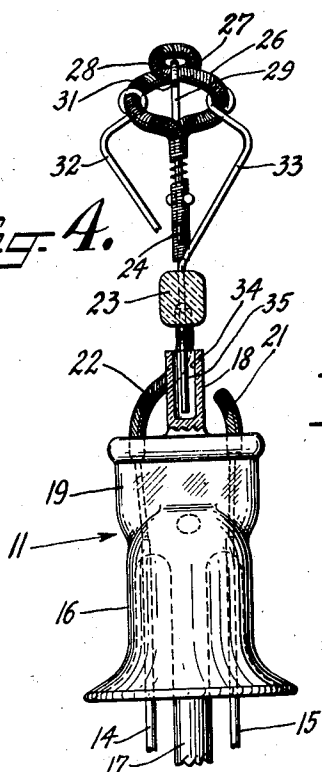
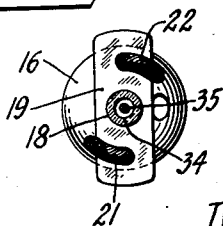


Fig. 5.



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LOCOMOTIVE HEADLIGHT LAMP

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gon, Montclair, N. J., assignors to Westinghouse
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Application December 19, 1931, Serial No. 582,014

5 Claims. (Cl. 176—39)

This invention relates to incandescent electric lamps and relates more particularly to lamps of the concentrated filament type.

It is usually the practice when manufacturing a lamp with a concentrated light source, to employ a coiled filament mounted on support wires which extend from a non-conductive pedestal or arbor. The arbor is consolidated with a flare tube and an exhaust tube, the consolidated assembly constituting a stem which is sealed to a neck of a bulb. In completing the operation the bulb is evacuated through the exhaust tube. The exhaust tube is then tipped off to seal the bulb from the atmosphere and a base is secured to the bulb neck.

A construction as outlined above gives a lamp of sufficiently rigid construction for ordinary lighting purposes. The present invention, however, contemplates an improved internal lamp structure capable of supporting a filament against breakage under severe impact and is of particular advantage in connection with locomotive headlight lamps. Locomotive headlight lamps are usually operated while positioned with their longitudinal axis disposed either in horizontal position or at an angle to the vertical. Such lamps are subjected to considerable vibration, jars and impacts and it is important that the filament or light source be so supported that the vibrations are damped or the detrimental forces attending vibration are dissipated.

In Patent No. 1,856,247 issued May 3, 1932, for Incandescent electric lamps, and assigned to the present assignee, a lamp having a filament of the concentrated type is shown and described and it is an object of the present invention to provide an improved mounting construction for such filament.

Another object of the invention is to provide a lamp filament support wherein the filament may be free to move as a unit and wherein the supporting means are free from fatigue.

Another object of the invention is to provide a filament supporting structure capable of limited movement under impact and in so supporting the said structure as to avoid deterioration of the support means.

Other objects and advantages of the invention will be apparent from the following description together with the accompanying drawing in which

Fig. 1 is an elevational view partly in section showing an embodiment of the present invention;

Fig. 2 is an enlarged elevational view of the interior filament carrying structure;

Fig. 3 is a plan view of the structure shown in Fig. 2;

Fig. 4 is a view taken on line IV—IV in Fig. 2;

Fig. 5 is a view taken on line V—V in Fig. 2.

The illustrated embodiment of the invention comprises a bulb 10 having a stem 11 sealed thereto at 12. A base 13 is secured to the neck of the bulb in the usual manner and lead wires 14 and 15 are connected to the base. The stem 11 comprises the usual flare tube 16 having an exhaust tube 17 and a hollow arbor consolidated therewith at a press portion 19. Imbedded in the press and extending therefrom, are flexible support members 21 and 22 having their upper ends secured to a non-conductive cross bar 23. The flexible supports 21 and 22 serve as conductors and are connected to the lead wires 14 and 15. The upper ends of the flexible members 21 and 22 pass thru the cross bar 23 and are connected with rigid extensions 24 and 25.

Filament 26 in the form of an electric coil is arranged with its terminals disposed about the rigid members 24 and 25. The loop portions 27 and 28 of the filament are held in position by support rods 29 and 31 secured to and extending upwardly from the cross bar 23. Additional support rods 32 and 33 are provided to support other opposite portions of the filament. The filament, cross bar and supports thus described constitute a movable unit which is supported on the flexible members 21 and 22. The said unit is thus free to move relative to the bulb structure.

Ordinarily, the unit thus supported would move freely and beyond the elastic limit of the flexible support members which in time would become fatigued and break. It has been found that only a relatively small movement of the filament is necessary to permit it to give and not impose the force necessary to overcome its inertia which would otherwise jar the filament and then would rupture it. In accordance with the present invention, means are provided to permit the movement of the said unit to a limited extent. Such means may comprise the arbor 18 which may be formed with a pocket 34 to receive a pin or stop rod 35. One end of the stop rod may be secured in the cross bar 23 of the unit while the free end of the rod may extend into the pocket 34.

It is obvious that, if desirable, the structure may be reversed and the cross bar may be pro-

vided with a pocket and a pin may extend from the press into the pocket or the cross bar may be provided with an extension formed in one piece thereof and extending into the pocket 34.

5 The present invention, however, contemplates such modifications since the inventive idea consists in so providing a unit or filament carrier with flexible support members and in controlling or limiting the movement of the unit so as to 10 prolong the usefulness of the support members.

In lamps of the construction to which the present invention relates, the resilient support members serving as conductors are preferably made of stranded nickel in order to obtain the 15 desired degree of conductivity. A material such as nickel is relatively soft but by reason of the present construction in which the movement of the supported structure is limited, the unit is prevented from being deflected past the elastic 20 limit of the nickel support members, thus permitting their use thereby attaining the desired operating improved structural arrangement.

It has been found that the present construction reduces failures and increases the useful 25 life of the lamp and permits the use of a filament such as non-sag or other filament wire which would ordinarily be too brittle to withstand shocks in other types of mounting.

30 Altho 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 ap- 35 pended claims.

What is claimed is:

1. A lamp mount comprising a press, flexible support members extending from said press, a rigid member carried by said flexible members, 40 a filament supporting structure, a filament mounted on said structure, and means depending from said structure cooperating with means on said press for confining the movement of said

rigid member within the elastic limit of lateral movement of the said flexible member.

2. A lamp mount comprising a press, a movable structure, means extending from said press for flexibly supporting said structure, a filament 5 mounted on said structure for movement therewith and means on said structure cooperating with means on said press for confining the movement of said structure within the elastic limit during lateral movement of said first named 10 means.

3. A lamp mount comprising a press, flexible conductors extending from said press, a rigid cross-bar mounted on said conductors, support 15 members extending from said cross-bar, a filament held by said support members and connected to said conductors and means on said cross-bar cooperating with means on said press for confining the movement of said cross-bar 20 within the elastic limits of said conductors during lateral movement.

4. A lamp mount comprising a press, a rigid insulative cross-bar disposed above said press, flexible conductive support wires extending from 25 said press and secured to said cross-bar, means for mounting a filament on said cross-bar, means connecting said filament with said conductive support wires, and means on said cross bar co-operating with means on said press for limiting 30 the movement of said cross-bar to such degree as to be within the elastic limit of said flexible support wires during lateral movement of said wires.

5. An incandescent lamp comprising a press, flexible support members extending from said 35 press, an insulative cross bar secured to said support members, rigid support members extending from said cross-bar, a filament carried on said support members and means on said bar co-operating with means on said press to limit 40 the lateral movement of said bar.

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