

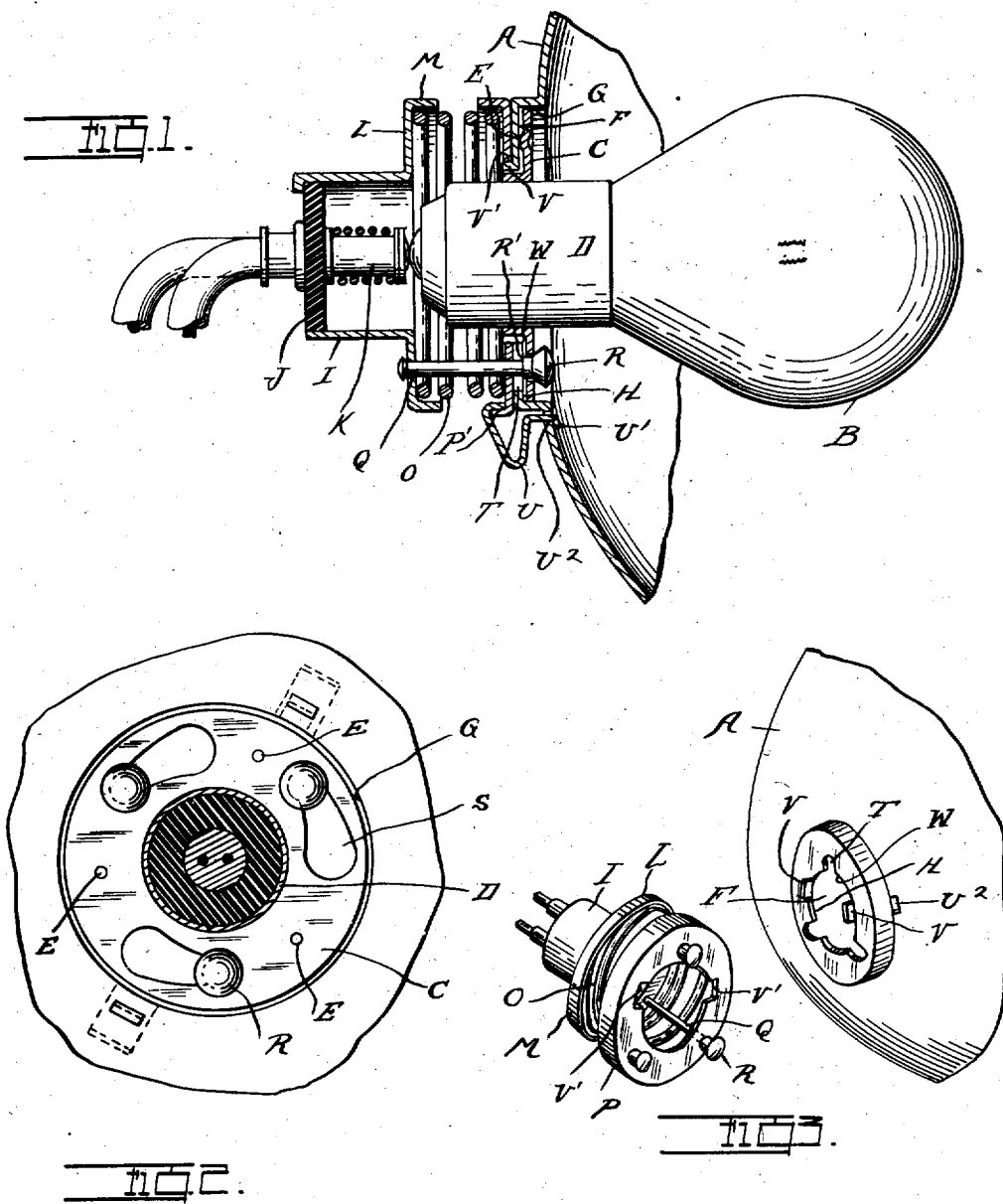
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2,110,131

ATTACHABLE SOCKET FOR FIXED FOCUS LAMPS

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ATTACHABLE SOCKET FOR FIXED FOCUS LAMPS

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13 Claims. (Cl. 240-41)

The invention relates to lamps, and more particularly to vehicle head lamps of the so-called fixed focus type where the lamp is non-adjustably mounted in fixed relation to the reflector.

In order to increase the accuracy of the fixed focus head lamps it has heretofore been proposed to provide the lamp with an annular flange arranged in very accurate relation with the filament or filaments of the lamp and adapted to seat within a recess in the reflector itself.

It is the primary object of the present invention to obtain an improved construction of socket adapted for a head lamp using the aforementioned type of lamp and reflector.

Another object of the invention is to provide a lamp socket attachable and detachable from the reflector as a unit.

A further object of the invention is to provide a lamp socket adapted to insure very accurate registration of the lamp with respect to the reflector.

These and other objects are attained with the construction as hereinafter more fully described. In the drawing:

Fig. 1 is an axial section through a portion of a head lamp to which my improvement is applied;

Fig. 2 is a front elevation thereof;

Fig. 3 is a perspective view of the reflector and the lamp socket detached therefrom.

As illustrated, A is a portion of a paraboloidal reflector and B is a lamp provided with exactly positioned locating means. As specifically shown, the locating means for the lamp B comprises an annular flange C which surrounds the metallic lamp base D, and which is provided with three embossed bearing points E on the rear side thereof. In the manufacture of this lamp the flange C is so positioned that its periphery is exactly concentric with a longitudinal axis through the lamp having a predetermined relation to the filaments. Also, the bearing points E are in a plane perpendicular to this axis and spaced from the filaments an exactly predetermined distance.

To simplify the construction, and also to obtain the exact positioning of the lamp filaments with respect to the reflector, I have provided the latter with a central recess F formed integral therewith. The peripheral wall G of this recess is concentric with an axis passing through the focal point of the reflector, and is of a dimension to exactly fit the periphery of the flange C. Also the bottom H of the recess is in a plane perpendicular to this axis and spaced from the focal point an exact distance. Thus by merely plac-

ing the lamp with the flange C engaging the recess F, it will be properly positioned in relation to the reflector. The bottom H of the recess F is here shown as provided with a central aperture W large enough to leave free the adjacent parts of the structure of the flange C and the lamp base in general.

For retaining the lamp in this position, and for providing electrical connections therewith, I have devised a lamp socket which, however, is detachable from the reflector, the construction being as follows:

I is a cylindrical socket member within which is arranged the insulator plug J for supporting the spring contact members K of any suitable construction. The member I is provided with a radially outwardly extending flange L terminating in a longitudinally extending flange M forming the cup for receiving a coil spring O. P is a cupped member for engaging the opposite end of the spring O and centrally apertured to provide clearance for the lamp base D. The members I and P are secured to each other by a plurality of headed pins Q. The heads R, at the forward ends of these pins, have a shouldered engagement with the member P, as indicated at R', and are adapted to pass through the large ends of tapering segmental slots S in the lamp flange C.

To mount the socket on the reflector the latter is provided with apertures T through which the heads R of the pins Q may pass, and the member P is then locked by a plurality of spring clips U having hooked ends U' passing through slots U' in the reflector. When thus attached, the lamp may be readily secured in position by engaging the large ends of the slots S with the heads R and then turning the flange C to engage the heads with the tapering portion of said slot. This action will cam outward the heads R, so as to separate the shoulder R' from its bearing on the member P and place the tension of the spring O on the pins Q. This will hold the bearing points E on the flange C, in firm contact with the bottom H of the recess. To hold the socket from any rotative displacement with respect to the reflector, the rear face of the recessed portion of the latter is provided with struck out prongs V which engage registering recesses V' in the member P. Thus when the flange C is turned to bring the heads R to the limit of the tapering slots S, the filament or filaments will be accurately positioned with respect to the focal point of the reflector.

The construction above described has the advantage that the lamp socket is a separate unit

from the reflector and may be readily attached or detached. Also the single spring O arranged between the elements L and P serves to place tension upon all of the pins Q. Thus the construction is simple, can be manufactured at low cost, and may be quickly engaged with any reflector without regard to its specific design.

While I have shown and described one form which my invention may assume, it will be understood that this disclosure is illustrative only, and that my invention is not limited thereto.

What I claim as my invention is:

1. In a fixed focus lamp assembly, the combination with a concave reflector provided with a central recess, and a lamp having a positioning flange engaging said recess and provided with a plurality of segmental slots, of a contact carrier detachably engaging the rear of said reflector, said carrier comprising two relatively movable members, a spring between said members, and pins, having heads, connecting said members and limiting the relative movement thereof under the tension of said spring, said reflector being provided with registering apertures constructed and arranged for the passage of said heads therethrough, and said heads being adapted to pass through said registering apertures in said reflector into operative engagement with the slots in said flange.

2. In a fixed focus lamp assembly, the combination with a concave reflector provided with a central recess, and a lamp having a positioning flange seated in said recess and provided with a plurality of segmental slots, of a lamp socket for detachably engaging the rear of said reflector, said socket comprising a member for carrying the electrical contacts, a plurality of headed pins extending forward from said member, a member slidably engaging said pins adjacent the forward heads thereof, a spring surrounding said pins and engaging said members, said reflector being provided with registering apertures constructed and arranged for the passage of said heads therethrough, and said heads of said pins being insertable through said registering apertures in said reflector into operative engagement with the slots in said flange, and separate means for preventing relative rotational movement of said socket and said reflector.

3. In a fixed focus lamp assembly, the combination with a concave reflector provided with a central recess, and a lamp having a positioning flange seated in said recess and provided with a plurality of segmental slots, of a lamp socket for detachably engaging the rear of said reflector, said socket comprising a member for carrying the electrical contacts, a plurality of headed pins extending forward from said member, a member slidably engaging said pins adjacent the forward heads thereof, a spring surrounding said pins and engaging said members, said reflector being provided with registering apertures constructed and arranged for the passage of said heads therethrough, and said heads of said pins being insertable through said registering apertures in said reflector into operative engagement with the slots in said flange, separate means for preventing relative rotational movement of said socket and said reflector, and clips for securing said socket to said reflector.

4. In a fixed focus vehicle lamp, the combination with a concave reflector provided with a central recess, and a lamp having a positioning flange seated in said recess and provided with a plurality of segmental slots through said flange,

of a lamp socket comprising a pair of reversely turned cup shaped members, the rear member thereof having mounted thereon the electrical contacts, a spring having its opposite ends seated in said cup shaped members, a plurality of pins secured to the rear cup shaped member and provided with shouldered heads engaging the forward face of the forward cup shaped member, said shouldered heads being adapted to pass through registering apertures in the recessed portion of said reflector into operative engagement with the slots in said positioning flange, means for holding said socket and said reflector from relative rotational movement, and clips for holding said socket to said reflector.

5. In a lamp assembly, the combination with a lamp having a positioning flange surrounding the base thereof and in predetermined relation to the filament or filaments of the lamp, said flange being provided with a plurality of segmental slots, of a paraboloidal reflector centrally depressed to form a recess for receiving and cooperating with said flange, centrally apertured for the passage of the lamp base therethrough, and having slots for registering with the segmental apertures of said flange, a socket in rear of said reflector for engaging said lamp base and provided with a plurality of pins passing through said apertures in the recess of said reflector and positioned for engagement with the segmental slots of said flange, and a single spring for placing a resilient tension on said pins to retain said flange in engagement with said recess.

6. In a lamp assembly, the combination with a lamp having a positioning flange surrounding the base thereof, and in exactly predetermined relation to the filament or filaments of the lamp, said flange having slots therein, of a paraboloidal reflector centrally rearwardly embossed to form a recess for receiving and cooperating with said flange, centrally recessed for the passage of the lamp base therethrough, and having apertures for registering with the segmental slots of said flange, a lamp socket comprising a pair of cupped members and a spring therebetween and a plurality of headed pins for securing said members to each other, said pins being positioned to register with the apertures in said reflector and with the slots in said flange, the rear member of said socket having mounted thereon the insulated electrical contacts for the lamp and the forward member being apertured for receiving the base of the bulb, and clips for securing the forward member of said socket to said reflector whereby said pins may be engaged by the segmental slots of said flange and whereby said spring will place a resilient tension on said pins to retain said flange in engagement with said recess.

7. In a lamp assembly, the combination of a concave reflector, a lamp having a securing flange engageable with said reflector, a contact carrier engaging the rear of said reflector, said carrier comprising two relatively movable members, a spring between said members, and pins, having heads, connecting said members and limiting the relative movement thereof under tension of said spring, said reflector being provided with registering apertures constructed and arranged for the passage of said heads therethrough, and said heads being adapted to pass through said registering apertures in said reflector into operative engagement with said flange, thereby holding said carrier and said lamp in firm engagement with said reflector.

8. In a lamp assembly, the combination of a concave reflector, a lamp having a securing flange engageable with said reflector, a lamp socket engaging the rear of said reflector, said socket comprising two relatively movable members, a spring between said members, and headed pins connecting said members and limiting the relative movement thereof under tension of said spring, the forward ends of said pins being adapted to pass through said reflector into operative engagement with said flange thereby holding said socket and said lamp in firm engagement with said reflector, and auxiliary means for securing said socket to said reflector when said lamp is removed.

9. In a lamp assembly, the combination of a concave reflector, a lamp having a flange for engaging the front side of said reflector, a socket engaging the rear side of said reflector, resilient engaging means on said socket engageable with said flange of said lamp to hold said socket and said lamp in engagement with said reflector, said engaging means passing freely through said reflector in a direction normal to said reflector from the position said engaging means occupies when holding said flange, thereby permitting removal of said lamp socket from the rear when said lamp is removed from the front, and auxiliary retaining means for holding said lamp socket to said reflector when said lamp bulb is removed.

10. In combination: an electric lamp having a base; a mounting for said lamp; means for connecting said lamp to said mounting, including, a lateral extension on said base, engaging means for engaging said lateral extension, resilient means acting to press said engaging means against said lateral extension, to press said lateral extension against said mounting, said engaging means and said resilient means comprising a unit removable from said mounting upon disengagement of said lamp; and an auxiliary member for holding said unit on said mounting upon removal of said lamp.

11. In combination: an incandescent electric lamp having a base; a mounting for said lamp;

means for connecting said lamp to said mounting, including, a lateral extension on said base, a projection having a transverse extension at its free end for engaging said lateral extension on said base, a carrying member having an aperture through which said projection is disposed, and resilient means acting to press said transverse extension against said lateral extension, to press said lateral extension against said mounting, and to press said transverse extension against said carrying member when said lamp is removed.

12. A unitary device, constructed and arranged to connect an incandescent electric lamp to a mounting, comprising: a carrying member; at least three circumferentially spaced projections carried by said carrying member and extending transversely to the general plane of said carrying member; said projections having lateral extensions at their free ends; a washer member on said projections between said lateral extension and said carrying member, said washer member having apertures the margins of which fixedly restrain movement of said projections relatively to each other both circumferentially and radially, and resilient means biasing said washer member toward said lateral extension.

13. In combination: an electric lamp having a base provided with a lateral extension having an arcuate slot therein; a mounting having an aperture; unitary pressing means, detachably secured as a unit to said mounting; said pressing means including a carrier member, and including also a projection disposed through and spaced from the margin of said aperture, said projection being carried by said carrier member, and unitary with said carrier member, constructed and arranged to cooperate with said arcuate slot, and so constructed and arranged that upon rotary movement of said lamp said projection presses said lateral extension against said mounting; and separate means for preventing relative rotational movement of said unitary pressing means and said mounting.

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CERTIFICATE OF CORRECTION.

Patent No. 2,110,131.

March 8, 1938.

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It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 3, first column, beginning with line 45, strike out all to and including line 12, second column, comprising claim 11, and for present claims 12 and 13 read 11 and 12 respectively; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 3d day of May, A. D. 1938.

Henry Van Arsdale,

Acting Commissioner of Patents.

(Seal)

8. In a lamp assembly, the combination of a concave reflector, a lamp having a securing flange engageable with said reflector, a lamp socket engaging the rear of said reflector, said socket comprising two relatively movable members, a spring between said members, and headed pins connecting said members and limiting the relative movement thereof under tension of said spring, the forward ends of said pins being adapted to pass through said reflector into operative engagement with said flange thereby holding said socket and said lamp in firm engagement with said reflector, and auxiliary means for securing said socket to said reflector when said lamp is removed.

9. In a lamp assembly, the combination of a concave reflector, a lamp having a flange for engaging the front side of said reflector, a socket engaging the rear side of said reflector, resilient engaging means on said socket engageable with said flange of said lamp to hold said socket and said lamp in engagement with said reflector, said engaging means passing freely through said reflector in a direction normal to said reflector from the position said engaging means occupies when holding said flange, thereby permitting removal of said lamp socket from the rear when said lamp is removed from the front, and auxiliary retaining means for holding said lamp socket to said reflector when said lamp bulb is removed.

10. In combination: an electric lamp having a base; a mounting for said lamp; means for connecting said lamp to said mounting, including, a lateral extension on said base, engaging means for engaging said lateral extension, resilient means acting to press said engaging means against said lateral extension, to press said lateral extension against said mounting, said engaging means and said resilient means comprising a unit removable from said mounting upon disengagement of said lamp; and an auxiliary member for holding said unit on said mounting upon removal of said lamp.

11. In combination: an incandescent electric lamp having a base; a mounting for said lamp;

means for connecting said lamp to said mounting, including, a lateral extension on said base, a projection having a transverse extension at its free end for engaging said lateral extension on said base, a carrying member having an aperture through which said projection is disposed, and resilient means acting to press said transverse extension against said lateral extension, to press said lateral extension against said mounting, and to press said transverse extension against said carrying member when said lamp is removed.

12. A unitary device, constructed and arranged to connect an incandescent electric lamp to a mounting, comprising: a carrying member; at least three circumferentially spaced projections carried by said carrying member and extending transversely to the general plane of said carrying member; said projections having lateral extensions at their free ends; a washer member on said projections between said lateral extension and said carrying member, said washer member having apertures the margins of which fixedly restrain movement of said projections relatively to each other both circumferentially and radially, and resilient means biasing said washer member toward said lateral extension.

13. In combination: an electric lamp having a base provided with a lateral extension having an arcuate slot therein; a mounting having an aperture; unitary pressing means, detachably secured as a unit to said mounting; said pressing means including a carrier member, and including also a projection disposed through and spaced from the margin of said aperture, said projection being carried by said carrier member, and unitary with said carrier member, constructed and arranged to cooperate with said arcuate slot, and so constructed and arranged that upon rotary movement of said lamp said projection presses said lateral extension against said mounting; and separate means for preventing relative rotational movement of said unitary pressing means and said mounting.

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