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LIGHTING UNIT MOUNTING

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This invention relates generally to lamps for motor vehicles and refers more particularly to that type designed for use as head lamps.

In the past it has been customary to form such lamps with an outer casing of the desired configuration and to mount within this casing as a sub-assembly the essential elements of the lamp such as the reflector, bulb socket and the electrical terminals or connections. However, the development of lamps has progressed to such a point that it is now desirable to use a filament instead of a bulb as the lighting element and to mount within the lamp casing as a hermetically-sealed lighting unit a reflector, filament, lens and electrical terminals or connections. Thus, it has been necessary to redesign the mountings for such elements.

In view of the foregoing, it is an object of the present invention to provide the hermetically-sealed units with mountings that permit the units to be readily adjusted so that the beams of light projected therefrom may be properly directed.

Other objects, advantages and novel details of construction of this invention will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawing, wherein:

Figure 1 is a longitudinal vertical sectional view through a lamp embodying our invention;

Figure 2 is a rear elevation with the outer casing partly broken away;

Figure 3 is a perspective view of certain parts shown in Figure 1;

Figure 4 is a small detail perspective view of the die casting.

Referring now to the drawing, A is the lamp casing, B is the hermetically-sealed unit, and C is the mounting embodying our invention for said unit.

In the present instance, the casing A may be any desired contour and may be mounted in any suitable manner upon the motor vehicle. Preferably the casing A is open at its forward end and is provided with a bezel ring D. As shown, this ring is sleeved upon an inwardly offset annular flange 1 of the casing and has an opening 2 receiving the unit B.

The hermetically-sealed lighting unit B may be made in any suitable manner and preferably has a shell of heat resisting glass, known in the trade as Pyrex, provided with front and rear walls 3 and 4, respectively, and an annular bead 5 at the juncture of said walls. The front wall 3 comprises the lens, while the front face of the rear wall has a coating of suitable material such

as aluminum forming a reflector 6. A suitable filament 7 is carried by the rear wall 4 and is provided with suitable electrical terminals 8 for connection with electrical conductors (not shown).

The mounting C for the unit B preferably comprises a die casting 9 provided with spring clips 10 for gripping engagement with the unit B, means including a pair of adjusting washers 11 and 12 of spherical contour and a supporting plate 13 also of spherical contour for holding the casting 9 and unit B against turning movement, and a pair of adjusting screws 14 and 15, respectively. As shown, the die casting 9 is provided at its forward end with a ring or annular portion 16 and is provided at its rear end with an axially extending stem 17. Preferably the ring 16 bears against the rear face of the bead 5, while the clips 10 extend over and engage the front face of said bead to grip the unit. The stem 17 projects rearwardly through the adjusting washers 11 and 12 and through the supporting plate 13. Preferably the plate 13 has an attaching flange 18 rigid with the casing A adjacent its rear end, while the washers 11 and 12 are identical in construction and are slidable over said plate 13. As shown, each washer has an oblong central aperture 19, peripheral notches 20 at diametrically opposite points thereof, preferably in alignment with opposite ends of the oblong aperture, and struck-out lugs 21 also at diametrically opposite points but preferably at opposite sides of the oblong aperture. The two washers 11 and 12 are assembled with the struck-out lugs at right angles to each other. Preferably the lugs 21 on the inner washer 12 engage the horizontal notches 20 in the outer washer and in horizontally spaced slots 22 in the supporting plate 13, while the lugs 21 on the outer washer 11 engage vertically spaced slots 23 in the supporting plate 13. A pin 24 extends through the stem 17 in rear of the plate 13, while a coil spring 25 is sleeved on the stem 17 between the inner washer 12 and the casting 9. Thus, the construction is such that the washers 11 and 12 will effectively hold the casting 9 and unit B against turning. To facilitate assembly, the plate 13 has a central opening 26 provided at diametrically opposite points thereof with diagonal slots 27 through which the pin 24 may be initially inserted before it assumes its final vertical position in rear of the plate 13.

The screw 14 is provided to adjust the unit B in a vertical plane to raise and lower the beam projected therefrom. As shown, this screw 14 is

accessible from the outside of the casing A and engages flattened portions 28 and 29, respectively, of the casing A and casting 9. Preferably this screw extends freely through the flattened portion 28 of the casing and threadedly engages the flattened portion 29 of the casting. A coil spring 30 is sleeved on this screw 14 between the casing A and the casting 9 to maintain the casting and unit B carried thereby in proper position relative to the casing in accordance with the adjustment of the screw. The screw 15 is provided to adjust the casting 9 and unit B in a horizontal plane. As shown, this screw 15 extends freely through a flattened portion 31 of the casing and threadedly engages a lug 32 on the casting 9. A coil spring 33 is sleeved on the screw 15 between the casing A and lug 32 to maintain the casting 9 and unit B in proper position relative to the casing in accordance with the adjustment of the screw. Thus, the lighting unit B may be adjusted as desired by either or both screws 14 and 15 to cause the beam of light projected from the unit B to be properly directed.

What we claim as our invention is:

1. A lamp having a casing provided with an opening, a light unit in said opening, and a mounting for said unit including an elongated casting within the casing provided at its forward end with an annular portion forming a collar for the light unit and provided at its rear end with an elongated axially extending stem for engagement with an adjustable support within the casing and having arms converging from said annular portion to said stem, spring arms carried by the annular portion and cooperating with the edges of the opening in said casing to clamp said unit against said annular portion, and adjusting means for said unit including two screws extending transversely of the casing and engaging said casting, one of said screws extending through the bottom of said casing and threadedly engaging one of the arms of the casting, and the other of said screws extending through one side of said casing and threadedly engaging the casting at the juncture of said arms and stem.

2. A lamp having a casing provided with an opening, a light unit for projecting light rays through said opening, and a mounting for said unit including an elongated casting within the casing provided at its forward end with an annular portion forming a collar for the light unit and provided at its rear end with an elongated axially extending stem for engagement with an

adjustable support within said casing, means carried by the annular portion of said casting for holding said unit in engagement with said annular portion, and adjusting means for said unit including two screws disposed at substantially right angles to each other and threadedly engaging said casting, said screws extending through and being accessible and operable outside said casing.

3. A lamp having a casing provided with an opening, a light unit for projecting light rays through said opening, said unit having a peripheral bead, and a mounting for said unit including an elongated casting within the casing provided at its forward end with an annular portion engaging one side of the bead of the light unit and provided at its rear end with an elongated axially extending stem for engagement with an adjustable support within the casing, spring clips carried by the annular portion of said casting and extending over and having gripping engagement with the other side of said bead to hold the latter in engagement with said annular portion, and adjusting means for said unit including screws extending transversely of said casing and threadedly engaging said casting intermediate said stem and annular portion.

4. A lamp having an elongated casing provided with a closed end and on open end, a light unit for projecting light rays through said open end, and an adjustable mounting for said unit including a holder for the unit having an axially extending stem, a dished plate within and rigidly fixed to said casing at the closed end thereof, said plate having a central opening receiving said stem, having diagonal slots at substantially diametrically opposite sides of and opening into said central opening, having a set of substantially horizontally aligned openings, and having a set of substantially vertically aligned openings, two concavo-convex washers arranged in nested relation upon the inner side of said dished plate, each of said washers having a central opening receiving said stem and having peripheral notches, lugs projecting from one of said washers and engaging the notches in the other washer and one set of openings in said plate, lugs projecting from the second washer and engaging the other set of openings in said plate, and a pin extending transversely of said stem in rear of said plate and normally out of registration with said diagonal slots.

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