An electric incandescent lamp for motor-car lighting comprising a filament surrounded in part by a screen extending substantially in the axial direction of the lamp is known. This kind of lamp is intended to be arranged in a parabolic reflector in such manner that the axis of the lamp coincides at least substantially with the axis of the reflector. The presence of the screen ensures that the light emanating from the filament strikes only one half of the reflector and is reflected downwards by it, assuming that the axis of the reflector is positioned horizontally. The filament will be referred to hereinafter as “dimlight filament” and the beam of light produced by it as “dimlight beam.” The dimlight beam is supposed to have non-dazzling properties. The bulb of the lamp usually contains a second filament not surrounded by a screen and emitting in co-operation with the said reflector a beam of light which is dazzling.

The object of the screen is to cut off the dimlight beam sharply and almost horizontally. However, it appears that unless particular steps are taken, the envisaged effect cannot be obtained completely, since that portion of the dimlight beam which is located about in the centre of the emitted beam exhibits in a cross-section having a vertically positioned measuring surface, an elevation which is located above the prescribed line indicating the boundary between light and dark. Measurements have revealed that the elevation is accentuated more strongly as the extremity of the dimlight filament more approaches the focus of the associated reflector.

The present invention has for its purpose to obviate the disadvantageous phenomenon just described with the use of simple means. The electric incandescent lamp of the kind mentioned in the preamble for this purpose exhibits the characteristic that the inner side of the screen is dull-black at the area of its end face adjacent the lamp cap and has reflecting properties through its remaining portion.

It has been found from experiments that the undesirable deviation from the prescribed shape of the cross-section of the dimlight beam, which deviation occurs with lamps of this type, is a result of reflections of light rays emanating from the dimlight filament and striking the indicated end face. Now, the said disadvantage is obviated by giving the said portion of the screen a dull-black appearance. Owing to the remaining portion of the inner side of the screen having reflecting properties, the loss of light involved is reduced to a minimum. Furthermore, this construction of the screen from the manufacturing point of view affords the advantage that the screens which are commonly manufactured by punching and thus acquire reflecting surfaces, need be made non-reflecting in a subsequent step through only a very small portion of their surface.

One advantageous embodiment of the incandescent lamp according to the invention exhibits the characteristic that, as measured along the axis of the lamp, the distance between the projection on the axis of the extremity of the depressed screen portion which is most adjacent the lamp cap is more than 0.5 mm. This affords the following advantage. With the conventional lamps the aim was to reduce the said distance as much as possible precisely with a view to obtaining an optimum cross-section of the dimlight beam. On the other hand, it is desirable that the pole wire to which one extremity of the dimlight filament is secured should be made as short as possible. Any troublesome shadow effects resulting from the presence of the extremity of the pole wire are thus reduced to the greatest possible extent.

Efforts are also made to arrange the dimlight filament as deeply as possible in the screen in order to ensure optimum cutting-off of the dimlight beam. All these factors together may lead to short-circuit between the screen and the extremity of the dimlight filament extending over the edge of the screen. Since in the lamp according to the invention the upper boundary of the dimlight beam already fulfils the requirements imposed because of the dull-black appearance of part of the inner side of the screen, there is in the lamp according to the invention no objection for the distance previously mentioned to be made larger than usual, so that the risk of short-circuit at the said area is reduced to a great extent.

In advantageous embodiments of the lamp according to the invention that portion of the screen which has a dull-black surface is coated with graphite, zirconium or zirconium compound. The last-mentioned materials have the advantage at the same time to exert the getter action which is desirable for gas-filled car lamps.

In order that the invention may be readily carried into effect, it will now be described, by way of example, with reference to one embodiment shown in the accompanying drawing.

The figure is a perspective view of the assembly contained in the electric incandescent lamp according to the invention, which assembly comprises a screened filament 1, a screen 2, a pole wire 3 which carries the screen 2 and a pole wire 4 to which one extremity of the filament is secured. The other parts of the lamp are omitted for the sake of clearness; the axis of the lamp is indicated by X—X. At the left-hand side (according to the drawing) of the screen 2 there is usually provided the main filament which is supported by the pole wire 3 and another pole wire which is not shown. The pole wires are housed in a common lamp cap (not shown) which is also located at the left-hand side of the screen in the drawing. All parts of the lamp are enclosed in a glass bulb in the usual manner. For the further consideration it is assumed that the lamp is arranged in an associated parabolic reflector in such manner that the axis X—X of the lamp coincides with the axis of the parabolic reflector. The focus of the paraboloid is located at F and its top is located on the left-hand side of the drawing. It is to be noted that the lamp axis X—X instead of coinciding with the upper edge of screen 2 is usually located 1 mm. lower.

The filament 1, which is of the helically-wound type, is secured, at one straight extremity 5, to a horizontal lateral surface 6 of screen 2 and, at another straight extremity 7, to the pole wire 4. When the filament is burning, it radiates light in all directions. However, the light directed downwards is intercepted by the inner side of screen 2 and directed in upward and sideward directions in the embodiment shown. The height of the axis of the helical filament 1 and its diameter with respect to the height of the edges 8 and 9 of the depressed portion 10 of the screen, as the case may be also with re-
spect to the position of the lateral surfaces 6 and 11 of the screen, substantially determine the upper boundary of the dimlight beam emitted by the reflector co-operating with the lamp. If no particular steps are taken and hence the end surface 12 of the depressed portion of the screen which is indicated in black in the figure were also made reflecting, it appears, as has been found that the central part of the dimlight beam is located above the prescribed boundary between light and dark. By giving the portion 12 a dull-black appearance such as shown, the said disadvantage is found to be substantially suppressed. If desired, the boundary line A—B of the dull-black portion may be shifted a little more to the left or to the right with respect to the position shown. However, the most important thing is that the bilaterally curved part of the screen has no reflecting properties. The figure furthermore shows that the loss of light resulting from this step is extremely small.

The figure also shows that the straight extremity 7 of the filament 1 extends obliquely upwards from the turn 13 which is most adjacent the lamp cap to the pole wire 4. The risk of short-circuit between the straight extremity 7 of the wire and the edge 14 of the screen 2 is rendered extremely small by providing that the distance between the projection of the part 13a, which is of the turn 13 most adjacent the lamp cap, on the axis X—X of the lamp and the projection of the part 14a of the edge 14 of the screen on the said axis, which distance is indicated by a, is chosen to be larger than 0.5 mm. This possibility exists in the lamp according to the invention since troublesome reflections resulting from the part 12 of the screen do not occur, so that this part may be given any arbitrary size within determined limits.

In the lamp according to the invention the part 12 is coated with a thin layer of metallic zirconium. This material not only has the desired light-absorbing properties, but also the property that it is active as a getter, thus binding any troublesome impurities in the gas-filling.

What is claimed is:

1. A lamp mount for an automobile incandescent lamp comprising a first pole wire, a screen connected to said first pole wire, a filament extending along the longitudinal axis of said screen and surrounded partly by said screen, and a second pole wire having one end of said filament secured thereto, the inner end surface of said screen adjacent to said pole wires having a dull black non-reflecting portion, the remainder of said inner surface having reflecting properties, a relatively linear extremity on said one end of said filament wherein the distance between said extremity and the adjacent part of said screen is more than 0.5 mm.

2. A lamp mount for an automobile incandescent lamp as set forth in claim 1 wherein said non-reflecting portion is coated with a thin layer of a getter having a dull-black surface.

3. A lamp mount for an automobile incandescent lamp as set forth in claim 2 wherein said layer is constituted of graphite.

4. A lamp mount for an automobile incandescent lamp as set forth in claim 2 wherein said layer is constituted of zirconium.

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