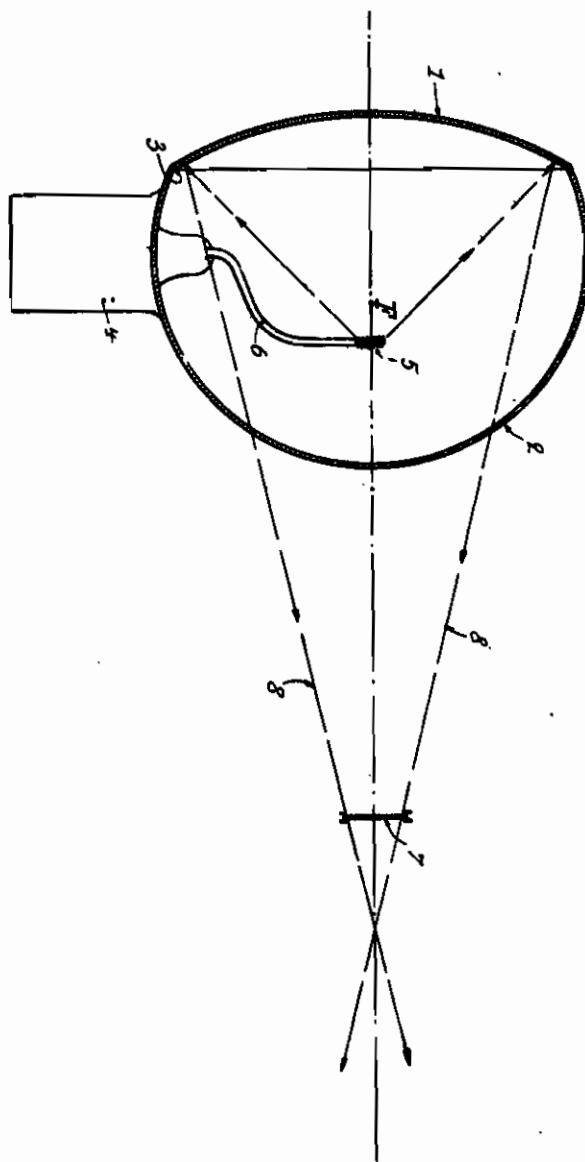


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INCANDESCENT PROJECTION LAMPS
WITH REFLECTOR
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INCANDESCENT PROJECTION LAMPS WITH REFLECTOR

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In cinematographic projection apparatus in which use is made of an incandescent lamp for projecting the image, it is usual to interpose, between the lamp and the exposure aperture, a condenser the function of which is to cause the bundle of luminous rays to converge towards the exposure aperture.

On the other hand, it is known, in order to use the entire flux emitted by a filament, to utilize incandescent lamps having a spherical mirror constituted by the very wall of the lamp so as to reflect towards the condenser the rays emitted by the filament in the reverse direction to that of the condenser; in this case, the filament is placed at the center of the spherical mirror.

It is also known, in order to do away with the use of the condenser in projection apparatus, to utilize, either an arc lamp, or an incandescent lamp in combination with a mirror, the filament of the lamp being located, relatively to the mirror of spherical, elliptical, parabolic or any other suitable shape, in such a position that the exposure aperture intercepts substantially the totality of the convergent luminous beam directly coming from the mirror without the interposition of any other intermediate optical member.

Owing to this arrangement, interfering images produced by the condenser are avoided, which sometimes give the image of the source; a more regular illumination of the exposure aperture is obtained and the cumbersomeness of the apparatus is reduced owing to the elimination of the condenser.

When use is made of an incandescent lamp, the first defect of such a device is that the glass bulb hinders the passage of the luminous beam going from the mirror towards the exposure aperture; the second is that it increases the proportions of the projection apparatus by the space occupied by the mirror.

The present invention is intended to remedy these various inconveniences. For that purpose, the mirror is formed by the rear wall of the glass bulb, which, to that end, is given a suitable shape and a silvering or other reflecting preparation which can be either on the inner wall or on the outer wall.

The glass bulb of the lamp will thus have on its rear face a perfectly defined curvature, which forms with the luminous filament and the lens, a complete optical system allowing to uniformly illuminate the exposure aperture and the screen.

This special curvature of the rear face will be imparted when blowing the bulb, by moulding, according to known methods.

In the accompanying drawing is illustrated in vertical section, by way of example, a form of construction of the lamp according to the invention, in which the mirror used is spherical.

The bulb of the lamp illustrated is obtained by moulding and comprises two spherical parts 1 and 2 of different diameters. Part 1 is silvered on its outer face so as to form a reflecting surface and part 2 is secured to the cap 4 of the lamp. In the bulb is located the filament 5 carried by a base 6 through which passes the electric current input and output wires. When the reflector 1 is spherical, the filament 5 is located, relatively to said reflector, beyond the focus F and in such a position that the exposure aperture 7 intercepts substantially the totality of the convergent luminous beam 8-9 directly coming from the reflector without interposition of any other intermediate optical member.

A similar result can evidently be obtained by giving to part 1 of the bulb constituting the reflector, an elliptical, parabolic or other shape, the filament always being located, relatively to said reflector, in such a position that the totality of the luminous beam reflected by the reflector illuminates the exposure aperture without interposition of another optical member.

The invention is obviously not limited to the form of construction above described which has been given only by way of example. The invention also includes any combination in which the filament of the lamp and the mirror on the lamp bulb are placed in respective positions such that the totality of the luminous beam reflected by the mirror can, without the help of a condenser, illuminate the exposure aperture of a cinematographic apparatus.

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