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C. W. ROHRKASTE

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REFLECTOR FOR INCANDESCENT LAMP BULBS

Filed Dec. 3, 1931

Fig. 1.

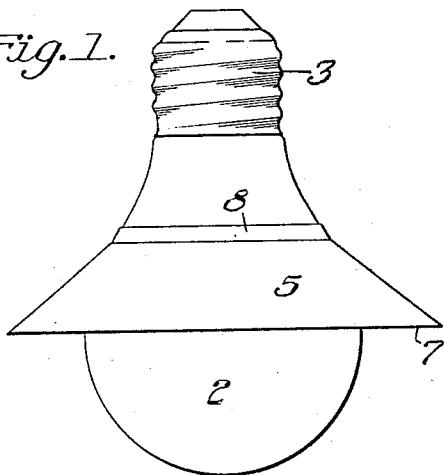


Fig. 3.

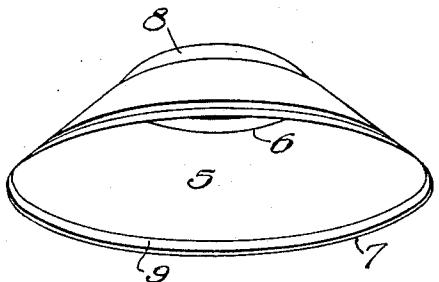


Fig. 2.

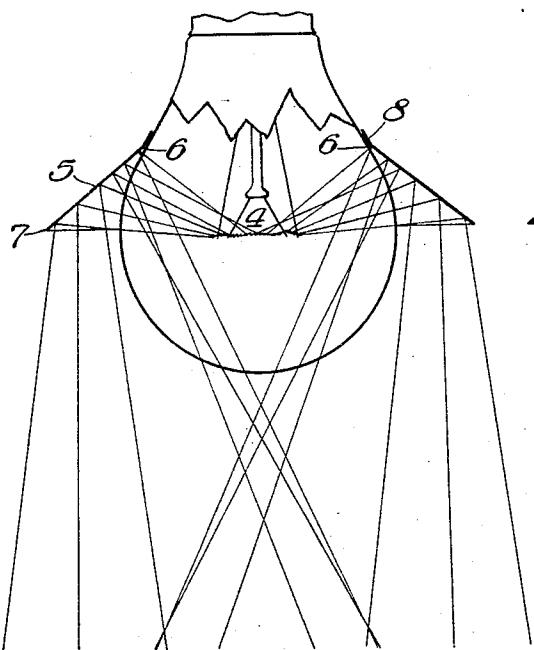
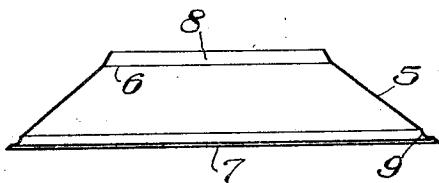


Fig. 4.



INVENTOR.
Charles W. Rohrkaste
BY
O. M. Clarke
ATTORNEY.

UNITED STATES PATENT OFFICE

CHARLES W. ROHRKASTE, OF BEAVER FALLS, PENNSYLVANIA

REFLECTOR FOR INCANDESCENT LAMP BULBS

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My invention is an improvement in reflectors for incandescent lamps for the purpose of directing the rays thereof over a limited area. In the modern incandescent lamp, utilizing a tungsten filament or the like, the source of light emission is centralized approximately at the middle of the partly spherical bulb terminal, for best results.

10 The bulb itself, in lamps of varying amperage, is substantially constant as to its contour and relationship to the enclosed active portion of the filament, independent of more or less elongation of the supporting 15 bulb neck. In this respect the light emission source is thus fairly centralized within the maximum portion of the bulb, the walls of which taper backwardly or upwardly therefrom toward the neck at a practically constant slope just beyond the maximum bulb 20 diameter.

Heretofore annular reflectors have been patented in which slotted extensions make connection with the socket terminal of a 25 lamp bulb as in patents of Pardridge No. 752,583 and Zamboni No. 935,347. Such devices however are not usefully applicable to modern filament and bulb constructions of the Mazda or other types, and are not economically efficient and useful or economical, 30 in comparison with my improvement.

In my invention I provide means for reflecting the principal light rays emitted 35 above the maximum bulb center downwardly or outwardly therebeyond by means of a partly coni-form sheet metal reflector, constructed and adapted to operate in the manner hereafter more fully described.

40 In the drawing showing certain preferred constructions of the invention:

Fig. 1 is a view of an incandescent lamp bulb with the reflector applied thereto in side elevation;

45 Fig. 2 is a partial sectional view of the bulb with the reflector thereon in vertical section;

Fig. 3 is a perspective view of the reflector 50 detached, showing a modification provided with an inner rim bead;

Fig. 4 is a central vertical section of the construction shown in Fig. 3.

In the drawing, 2 is the incandescent lamp bulb of standard construction having the usual socket terminal 3.

55 The lamp filament 4, as in modern construction, depends from the interior of terminal 3 to a point approximating the center of the bulbous or spherical terminal, at which point the incandescent ray-emitting element of the lamp is located.

60 The rays therefrom radiate from such center in all directions, the rays below the center being unconfined and unlimited, except as modified by reversely reflected rays 65 above the center.

70 My improvement provides means for reflecting the upper rays downwardly within a comparatively limited area, whereby to brilliantly illuminate a space or surface and with a very great saving of otherwise divergent rays.

75 As shown, the reflector consists of a coniform skirt or annular apron 5 of suitable sheet metal, diverging from a contact point 6 to a terminal annular edge 7, and preferably having an upwardly extending comparatively narrow supporting flange extension 8.

80 The flange 8 is arranged at such an angle as to closely conform to and make contact with the surface of the lamp for the full extent of its width, thereby snugly seating thereagainst and providing an ample supporting and locating attachment to the lamp bulb, with symmetrical disposition of the flaring skirt reflecting portion therearound.

85 The angular arrangement of the skirt 5, with relation to a horizontal plane passing through contacting annular edge 6, is preferably about $37\frac{1}{2}$. I have found by considerable experiment and trial that such angle gives the best results in concentration of the rays reflected thereby, although I do not desire to be limited to such particular angle. In making the reflector, it may be stamped from a sheet metal blank into the form shown, and is preferably highly polished over its interior surface as by chromium, 95 100

nickel, silver or other plating, for the highest efficiency.

In Figs. 3 and 4 the reflector is shown as of the construction above described but provided with an inwardly extending annular rib 9, the purpose and effect of which is to provide a highly brilliant bead-like rim of increased or concentrated reflecting value. The bead also somewhat reinforces and stiffens the device, but is principally useful in providing a narrow brilliantly reflecting defining band of attractive appearance and added value.

As thus constructed the reflector is easily applied or removed from the lamp prior to its insertion in the supporting and circuit establishing socket. Being maintained in close relation and proximity to the light emitting center of the filament, it acts to reflect the rays downwardly and inwardly along the longitudinal axial center of the bulb, as to all rays from the main light center of filament 4 which are interrupted and deflected as indicated in Fig. 2.

Certain rays which pass upwardly beyond the contact terminal 6 or rim 8 are of comparatively little value, while the rays passing outwardly through the lower portion of the bulb are diffused in the usual manner downwardly and laterally, the main column of light however being supplemented and reinforced by the inwardly reflected rays.

The device is of especial value in connection with show windows, chandeliers, hanging lamps, entrances to theatres or other buildings, or in any case where it is desirable to illuminate a floor or pavement surface.

The device is comparatively simple, inexpensive, and easy to manufacture, very durable and light in construction and extremely efficient in operation.

It may of course be made in various sizes to adapt it to the different contact diameters of lamp bulbs, varying with their light capacity, or may be otherwise changed in detail construction within the scope of the following claims.

What I claim is:

1. In combination with an incandescent lamp having a lower spherical bulb merging into an upper concaved neck, a coniform sheet metal reflecting skirt having a central opening surrounded by a continuously contacting inner annular coniform flange engaging the lamp bulb at junction of its spherical and concave surfaces and an outer annular confining edge terminating opposite the maximum diameter of the bulb adapted to reflect upwardly and outwardly divergent rays downwardly below the maximum diameter of the lamp.

2. A reflector for incandescent lamps consisting of a coniform sheet metal skirt having a central opening surrounded by a continuously contacting inner annular coniform

flange and an outer annular confining edge provided with an inwardly extending peripheral bead.

In testimony whereof I hereunto affix my signature.

CHARLES W. ROHRKASTE.

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