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W. W. MORU

LAMP

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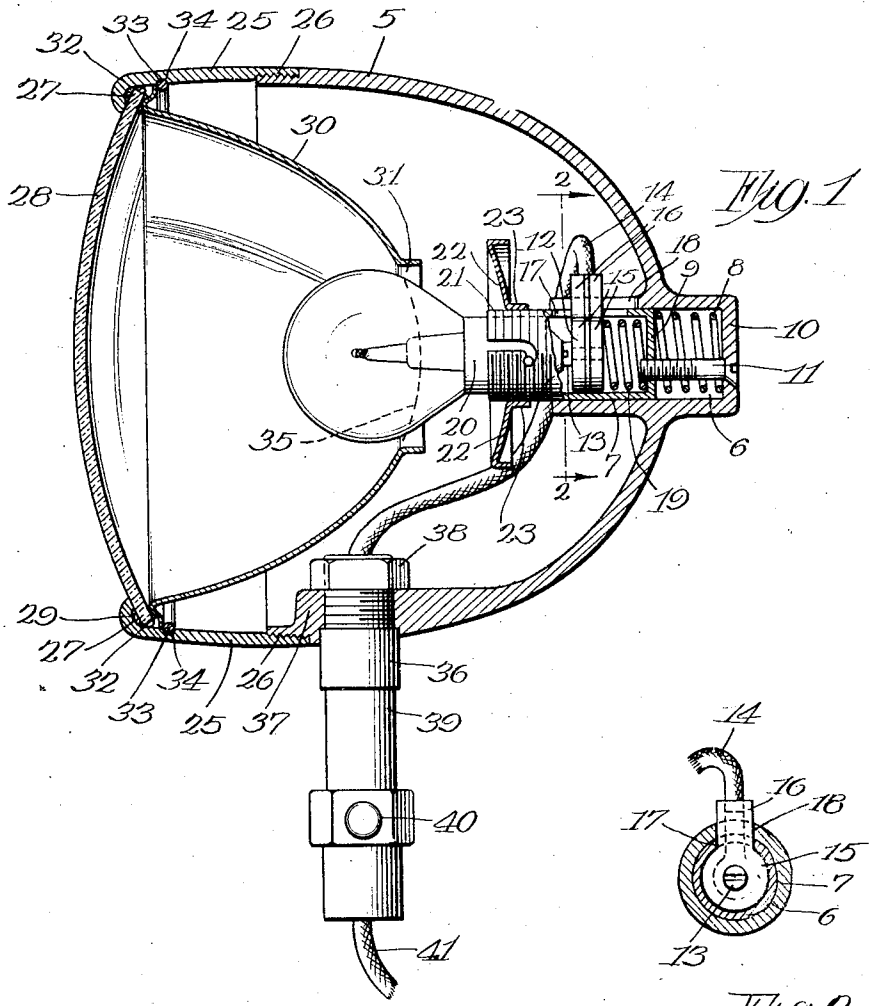


Fig. 1

Fig. 2

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LAMP.

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This invention relates to improvements in lamps, and particularly to that class of lamps commonly known as spot-lights, and has for one of its objects, to provide a lamp having reflecting means of such a nature that a maximum number of light rays will be projected therefrom and confined to a comparatively small area from a suitable source of light, such as an electric bulb.

Another object is to provide a lamp wherein the reflecting means and other parts on the inside of the lamp are protected from moisture, dust, and other damaging elements.

Still another object is to provide a lamp in which the lens and a portion of the reflecting means is mounted in the door thereof and is removable therewith without disturbing the source of light or other elements.

In the drawing I have shown a selected embodiment of my improved lamp, wherein:—

Fig. 1 is a section taken on an axis of the lamp and

Fig. 2 is a section on the line 2—2 of Fig. 1.

Referring now to the drawings, my improved lamp comprises a housing 5, having a receptacle 6 provided therein at its rear, in which is disposed an electric bulb-socket 7. The socket 7 is slidably mounted in the said receptacle 6 and is yieldingly urged forward by a spring 8 disposed between the closed end 9 of the socket, and the closed end 10 of the receptacle. A screw 11 threadedly engaged with the closed end 9 of the socket and seated at its head in the closed end 10 of the receptacle, provides means for drawing the socket rearwardly against the pressure of the said spring 8. The engagement between the closed end 9 of the socket and the screw 11 is preferably off-center whereby the screw serves to prevent rotation of the socket and may be turned therein without danger of rotating the socket therewith.

The socket as shown may be of the type to receive an electric bulb having the conventional bayonet base, and is provided with a central contact member 12, having a contact point 13 to which is connected in any suitable manner an electric conductor 14. This central contact point 13 is held in a central position and insulated from the shell of the socket by means of a pair of insulating pieces 15, having projecting fingers 16. The projecting fingers 16 extend through an opening 17 in the socket and through a slot 18 in the wall of the receptacle 6. A spring 19 disposed between the rearward insulating piece 15 of the central contact member 12 and the closed end 9 of the socket, yieldingly urges the central contact member forwardly into engagement with the central contact member of the electric bulb 20. In this form, the shell of the socket acts as the other conductor, it being in contact with the housing, which in this form, is connected to one side of an electric circuit.

The projecting finger 16 which extends through the openings 17 and 18 in the socket and receptacle respectively, also serves to prevent rotation of the socket within the receptacle, this being a holding means in addition to the off-center engagement between the screw and socket above described.

It should be noted that while I have described a lamp having accommodations for a "single contact bulb", it is to be understood that provisions for a "double contact bulb" may be readily substituted.

The outer end of the socket is screw threaded, as indicated at 21, to receive a reflector 22. The reflector 22 is provided with an internally threaded portion 23, adapted to be mounted on, and engage the aforesaid threaded portion of the socket. The screw-threading on the socket is preferably extended a considerable distance from the front end thereof, toward the rear, to provide room for focal adjustment of the reflector with respect to the source of light carried by the socket, as will hereinafter be more clearly explained.

At the forward end of the housing 5, I prefer to provide a door 25, having screw-threaded engagement with the housing as shown at 26. A lens seat 27 is provided, whereon a lens 28 is cemented by means of a suitable cementing compound indicated at 29. A reflector 30 having a central opening 31 at its rear, through which an electric bulb may be passed, having an annular flange 32 at its front, is also mounted in the front door. A spring ring 33 bearing against the said flange 32 is seated in a groove 34 in the interior of the door, and serves to hold the reflector 30 in place against the lens.

By mounting the reflector 30 in the door and by providing the opening 31 in the rear end, I provide a construction whereby the reflector may be removed with the door, without disturbing any of the other elements of the lamp, with the additional advantages of making the electric bulb more accessible, and protecting the reflector from scratches, finger

marks, etc., which often occur in the ordinary form of lamp, wherein the reflector remains in the lamp. By using the cementing or sealing compound 29, I provide a substantially weather-proof mounting for the lens, and this prevents the introduction of rain and dust, which are so damaging to the usual forms of reflectors.

Independent focal adjustment is provided for each reflector. Focal adjustment for the large reflector 30 is accomplished by moving the socket 7, which carries the bulb 20, forwardly or rearwardly. Focal adjustment for the small reflector 22 is accomplished by screwing the reflector on the threaded end of the socket, to move it forward or rearward, as is desired. By constructing my lamp to use two separate reflectors, I am enabled to use a short focus reflector for the large or front reflector, and a long focus reflector for the small or rear reflector. This is of great advantage because of the desirability of keeping the size of the lamp within certain dimensions, and the consequent limitation of the size of the reflector. With the ordinary size of reflectors which are necessarily short focus reflectors, it is impossible to bring the source of light to a true focusing point, and this is due to the construction of the bulb wherein the filament or lighting element is so far forward from the base thereof. This may be understood by reference to Fig. 1, wherein a dotted line 35 indicates what would be the rear of the reflector 30, if it were not provided with the opening 31. The bulb is shown in substantially focused position. It may be readily seen that without the opening and rearward mounting for the bulb, the source of light would necessarily have to be considerably in advance of the position shown, and consequently out of focus. The small reflector 22 is provided to replace the reflecting surface lost by the opening 31, and is preferably of the long focus construction whereby it is adapted to reflect the rays of light from the bulb, in a line substantially parallel with the axis of both reflectors. The result of this short focus, and long focus reflector combination, is that the light projected will be confined to a comparatively small area.

Any suitable means for mounting my improved lamp may be used, and as one means, I have shown a tubular stem 36, screw-threaded into a boss 37 of the housing 5, and secured thereon by a lock nut 38. This stem may conveniently be provided with a reduced portion indicated at 39, adapted to be engaged by a clamp or bracket, which is mounted in any suitable way on a vehicle or other object. A convenient switch 40 may be provided in the said stem. The conductor 14, which is connected to the central contact 13 may be passed through the tubular stem and connected to the said switch 40, to the other side of which switch, is connected a conductor 41, leading to one of the terminals of the source of current.

While I prefer to use reflectors of the parabolic type in my lamp because of their property of throwing a concentrated beam of light, I am aware that the construction and arrangement of these as well as other parts of my improved lamp may be varied without departing from the scope of the following claims.

I claim as my invention:

1. A lamp comprising a housing, a receptacle in said housing, an electric bulb socket slidably mounted in said receptacle, means for adjusting said socket to any desired position, a reflector mounted on said socket and movable to or from a source of light carried by said socket, a door mounted on said housing, a lens seated in said door and a reflector also mounted in said door and removable therewith without disturbing any of the aforesaid elements of the lamp.

2. A lamp comprising a housing having a receptacle with a closure at its rear end in said housing, an electric bulb socket having a closed rear end, said socket being slidably mounted in said receptacle, a screw threadedly engaged off-center with the closed end of said socket and seated at its head-end in the closure of said receptacle and means for yieldingly urging said socket forwardly.

3. A lamp comprising a housing, a door separable from said housing, a reflector carried by said door and provided with an aperture through which an electric light bulb may be passed, an electric light bulb socket having its outer surface provided with screw threading, means in said housing for holding said socket, and a second reflector provided with an aperture having internal threads adapted to engage said threads on the socket whereby said second reflector is adjustably mounted on the socket and means for adjusting the socket relative to the first mentioned reflector.

4. A lamp comprising a housing provided with a receptacle in the rear thereof, said receptacle being provided with a rear closure, an electric light bulb socket slidably mounted in said receptacle, a reflector mounted in said housing and provided with an aperture in the rear thereof through which a bulb carried by said socket can be passed, and adjusting means for said socket whereby the bulb carried thereby is movable into or out of focus with said reflector, said adjusting means comprising a headed member passing through said closure into said receptacle and having threaded engagement with a portion of said socket, and means for yieldingly urging said socket forwardly whereby the head of said headed member is normally urged against said closure.

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