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C. SKLAREK

1,779,953

FOCUSING DEVICE

Original Filed Feb. 18, 1924

Fig. 1.

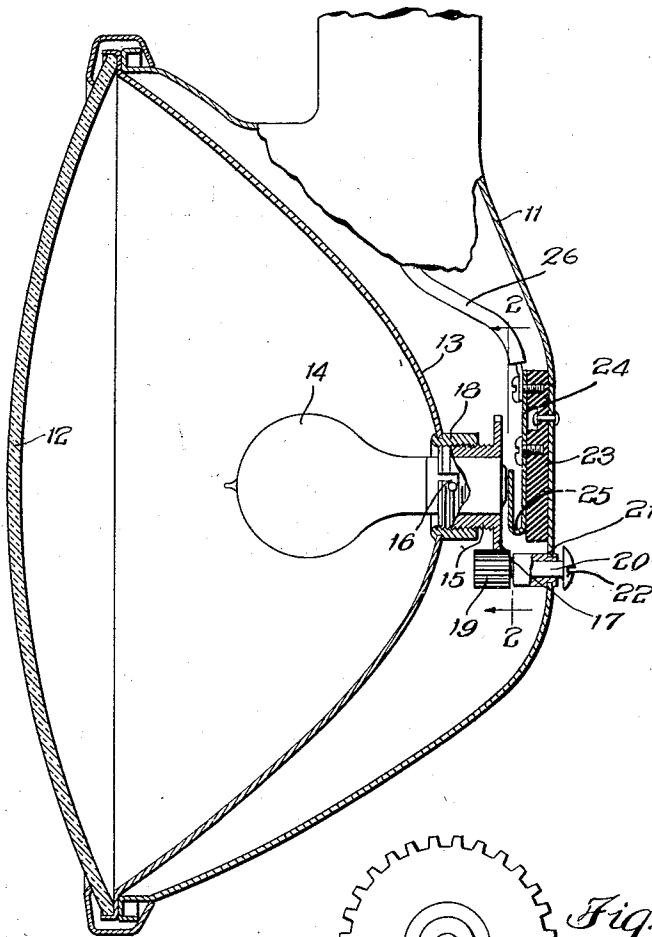
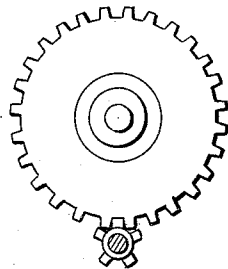


Fig. 2.



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FOCUSING DEVICE

Original application filed February 18, 1924, Serial No. 693,410. Divided and this application filed March 28, 1929. Serial No. 350,510.

This invention relates to improvements in focusing devices, and is a division of my co-pending application Serial No. 693,410 filed February 18, 1924, on which Patent No. 1,711,129 was granted April 30, 1929.

In spotlights employed on automobiles and other vehicles it is essential that some adjusting means be employed for light bulbs as the filaments of different bulbs are not uniformly placed within the same, due to inaccuracies in the manufacture and in order to properly focus the light rays, the bulb, as a whole, must be properly positioned with respect to the reflector of the light and adjustments are necessary for different bulbs.

One object of my invention is to provide simple and efficient adjusting means in the lamp head of a spot light provided with the usual curved reflector, for compensating for irregularities in the location of the filament of the electric bulb so that the illuminating portion of the filament may be located accurately at the focus of the reflector.

A more specific object of the invention is to provide a simple and efficient means of the character indicated in the preceding paragraph, including a socket member in which the lamp bulb is held, the socket member being bodily adjustable with respect to the reflector by operating means accessible from the exterior of the lamp head.

Other and further objects of the invention will more clearly appear from the description and claims hereinafter following.

In the drawing, forming a part of this specification Figure 1 is a part elevational and part sectional view of a lamp illustrating my improvements in connection therewith. And Figure 2 is a sectional view, on an enlarged scale, corresponding substantially to the line 2-2 of Figure 1.

As shown in the drawings, my improvements are illustrated in connection with a lamp head of a dirigible type of light, the lamp head being adjustable on two different axes to adjust the light. As will be evident although my improvements are illustrated in connection with a dirigible type of light, the same may be applied to lights of other types.

The lamp head comprises a shell 11 of suit-

able construction, the shell carrying the usual lens 12 and reflector mirror 13, together with the electric lamp bulb proper indicated at 14. The electric lamp bulb is mounted for adjustment with respect to the reflector 13 so as to obtain proper focusing of the light, this being accomplished by the following means: The lamp bulb 14 is mounted in an externally-threaded socket member 15 provided with the usual bayonet slots 16 co-acting with the usual pins on the bulb for holding the same within the socket. The socket member 15 has an annular flange at the rear end thereof provided with peripheral teeth, whereby providing an integral spur gear member 17. The socket 15 is screwed into an internally-threaded sleeve 18 rigidly secured to the reflector 13 in any suitable manner. It will be noted that upon rotation of the sleeve in the proper direction, the same will be screwed inwardly or outwardly with reference to the sleeve 15, thereby adjusting the lamp bulb relatively to the reflector. The spur gear 17 meshes with an elongated spur gear 19 fixed to a short shaft 20 journaled in a sleeve 21 rigidly secured within an opening in the rear wall of the shell 11. The shaft 20 is provided with an integral, slotted screw head 22 for rotating the same. Upon rotation of the shaft 20 by means of a screw driver, the gear 17 will be rotated through the gear 19, effecting rotation of the socket 15, screwing the same inwardly or outwardly of the sleeve 18, thereby effecting adjustment of the lamp bulb.

A block of insulating material 23 is riveted to the rear wall of the head, carrying a contact spring member 24 secured thereon by screws or any other suitable means. The free end of the spring 24 is reversely bent as indicated at 25 and has its free end bearing on the contact point of the lamp bulb 14. The opposite end of the spring 24 is electrically connected to the conductor 26 leading to the source of electric current. The bowed arm of the spring 24 which yieldingly bears on the end of the bulb maintains electric contact therewith while the same is adjusted inwardly and outwardly and also holds the pins on the bulb in yielding engagement with the short ends of the bayonet slots of the socket

15. The bulb is grounded on the lamp head and the circuit is thus completed.

In adjusting the lamp bulb with respect to the reflector to bring the filament of the bulb to the focal center of the reflector, the shaft 20 is rotated by means of a tool such as a screw driver, thereby rotating the gear 19 which meshes with the gear 17, thus rotating the socket member 15. Due to the screw threaded engagement between the socket 15 and the sleeve 18, the former will be adjusted with respect to the sleeve, either inwardly or outwardly depending upon the direction of rotation of the shaft 22. As the lamp bulb is carried directly by the socket, the same will be adjusted therewith and may be brought to the proper focus with respect to the reflector. During the adjustment of the socket 15, the contact spring 24 will at all times engage the inner end of the bulb member and exert a yielding pressure thereon, thus maintaining the contact and holding the pins seated in the bayonet slots of the socket. In this connection, it is pointed out that the gear 19 is elongated so as to accommodate the movement of the gear 17 lengthwise thereof and maintain the meshing engagement of the teeth of these gears in all positions of adjustment of the socket.

While I have herein shown and described what I consider the preferred manner of carrying out the invention, the same is merely illustrative, and I contemplate all changes and modifications to come within the scope of the claims appended hereto.

I claim:

1. In a spotlight, the combination with a housing having a reflector mounted therein; of a rotatable lamp socket having a screw-threaded connection with the reflector, said socket supporting a lamp bulb; and operating means for adjusting said socket lengthwise of, inwardly and outwardly with respect to the reflector including a rotatable shaft journaled in the housing to one side of the socket, said shaft having means thereon disposed exteriorly of the housing for effecting rotation of the same and said shaft and socket having cooperating gear members thereon for effecting rotation of the socket upon said shaft being rotated, said gear member of the socket traveling therewith and with respect to the other gear member and being constantly operatively engaged with the latter during said traveling movement.

2. In a spotlight, the combination with a shell; of a reflector in said shell; an internally threaded sleeve fixed to the reflector; a lamp socket threaded within said sleeve; an electric light bulb mounted in the socket; and means for rotating said socket to cause said socket to travel lengthwise of the sleeve to adjust the bulb, said means including a rotary operating element and interengaging rotary driving means on said socket and operating

element, said driving means of the socket traveling therewith, said interengaging driving means being in operative engagement in all positions of longitudinal travel of said socket during relative adjustment of the socket and sleeve.

3. In a spotlight, the combination with a shell; of a reflecting mirror within the shell; a sleeve fixed to the mirror and a second sleeve screw threaded into said first named sleeve and forming a socket member for an electric light bulb, said last named sleeve having an annular flange provided with gear teeth; and a manually actuated rotary pinion engaging with said gear teeth to adjust said second named sleeve with respect to the first named sleeve, the teeth of said pinion being elongated to permit relative longitudinal movement of the pinion and the second named sleeve without disengagement of the teeth thereof.

4. In a spotlight, the combination with a shell; of a reflecting mirror within the shell, said reflecting mirror being provided with an internally threaded sleeve-like portion; a lamp socket threaded into said sleeve-like portion; a lamp bulb mounted in said socket; a manually actuated operating shaft having a part thereof disposed within the shell and an operating portion exterior to the shell; a pinion mounted on said shaft, said pinion having elongated teeth, and said socket having a gear member formed thereon and meshing with the teeth of the pinion; and a U-shaped contact spring member having one arm fixed to said shell and insulated therefrom and the other arm bearing on the base of said bulb to press the same against the retaining means and maintaining electric contact with the bulb in all positions of adjustment of the same; and an electrical connection for said contact member.

In witness that I claim the foregoing I have hereunto subscribed my name this 25th day of March 1929.

CLIFFORD SKLAREK.