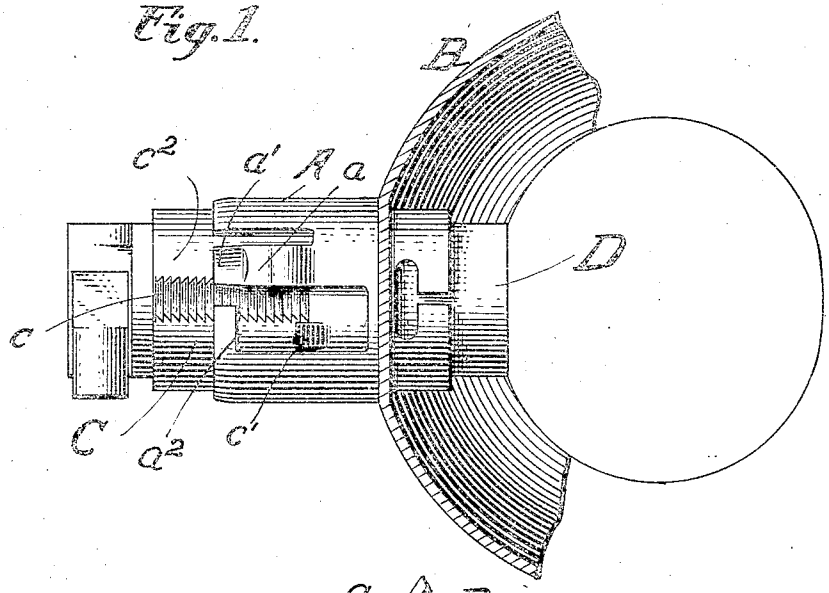
J. C. STEARNS.

FOCUSING DEVICE FOR ELECTRIC LAMPS.

APPLICATION FILED DEC. 19, 1914.

1,150,552. Patented Aug. 17, 1915.

Fig. 1.



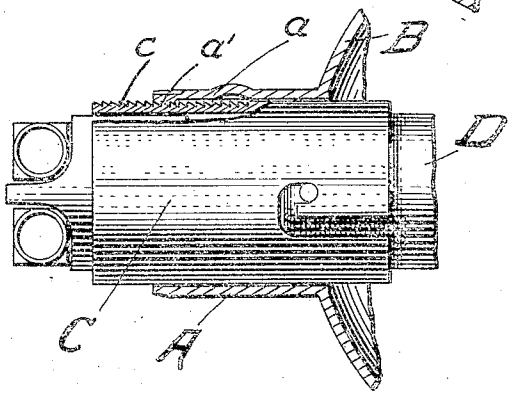


Fig. 2.

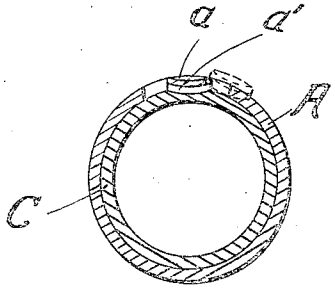


Fig. 3.

Witnesses:

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FOCUSING DEVICE FOR ELECTRIC LAMPS.

1,150,552. Specification of Letters Patent. Patented Aug. 17, 1915.

Application filed December 19, 1914. Serial No. 878,104.

To all whom it may concern:

Be it known that I, JASON C. STEARNS, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Focusing Device for Electric Lamps, of which the following is a specification.

This invention relates to a device by which an electric lamp can be moved relatively to its reflector for the purpose of bringing it into or out of focus with the reflector, and while capable of general use, it is especially designed for automobile lamps.

The principal objects of the invention are to provide a device for this purpose in which it is not necessary to hold the lamp back against a spring while focusing it, and in which the focusing operation can be performed by simply turning the lamp back and forth and applying pressure or pulling on it at the same time; and also to provide means of such a simple character for accomplishing these results as to greatly reduce the cost of manufacture and installation and to do away with the spring and helical guide ordinarily used in these devices.

The invention also involves improvements in combination of parts and details of construction as will appear hereinafter.

Reference is to be had to the accompanying drawings in which,

Figure 1 is a side view of a lamp and its socket member showing the reflector in position but broken away and illustrating a preferred embodiment of this invention; Fig. 2 is a longitudinal central sectional view of the same with the parts in another position; and Fig. 3 is a transverse sectional view showing the parts in one position in full lines and in another position in dotted lines.

The invention is shown as applied to a construction comprising a sleeve A on which the mirror B is fixed. This sleeve and mirror ordinarily are secured in the lamp casing in fixed position. In this sleeve is slidably mounted a cylindrical bushing C. This bushing constitutes the socket member for the lamp D and is provided with the usual bayonet slot and spring-pressed plungers for this purpose. One of these two members is provided with a longitudinal rack and the other with a tooth for engaging the rack, both located substantially within the cylindrical walls thereof, so as to be simple to construct and assemble.

The bushing C is shown as provided with a longitudinal rack c formed of teeth pressed or cut in its surface and consequently constituting a ratchet member without the necessity of adding an additional member to these parts. It is also shown as provided with a tongue c' upset outwardly to form a stop. These parts are intended to coöperate with certain parts of the cylindrical sleeve A. This sleeve is provided with an integral longitudinal tongue a which is provided with a tooth or teeth a' on the inner surface for engaging the ratchet teeth. This tongue is sprung down inwardly so as normally to come into engagement with the ratchet teeth when the bushing is turned to the proper position to permit it and when turned to the position shown in Fig. 1 the teeth a' slide up on a cylindrical surface c^2 of the bushing which constitutes means for holding them out of engagement with the rack.

The stop c' is located in a rectangular opening a^2 in the surface of the sleeve A so that it will stop the circumferential motion of the bushing in two positions, in one of which the teeth a' engage the rack and in the other of which they are held out of engagement with it. It also stops the longitudinal motion of the bushing by coming into contact with the ends of the slot.

The intermeshing teeth are shown as having radial surfaces on one side for preventing an automatic change in adjustment when forcing a new lamp into the socket. The opposite surfaces are conveniently made slanting. This allows outward adjustment without turning the rack out of the way, but this is not usually made use of.

In the operation of the device it will be noted that when the parts are in the position shown in Fig. 1 the lamp can be adjusted in and out as far as the stop c' will allow. However, people ordinarily find difficulty in adjusting the lamp in this manner, because after it is started it is natural for it to move to the end of its range of adjustment and it is difficult for an inexperienced person to stop it at an intermediate point, at least without touching the reflector. Therefore, the ordinary way of making the adjustment is to apply pressure and turn the lamp back

and forth. If it is being adjusted inwardly, the pressure is in that direction, of course. By this means, every time the teeth a' come out of contact with the ratchet, the lamp is moved along a little so as to skip one or two teeth and yet there is no danger of moving it materially beyond the point at which it is desired to stop. In this way it will be seen that it is easily adjusted, either by an expert or by a person entirely unfamiliar with the construction of the device, and satisfies all needs in this respect. Furthermore, by this construction, the use of an additional spring, which is a source of more increase in expense and also limits the effective life of the device, is entirely avoided and at the same time the necessity of using a spiral slot is also entirely eliminated. On account of doing away with these two features, the cost of the device is materially reduced without reducing its efficiency and in fact with an actual increase in its durability.

Although I have illustrated and described only a single embodiment of the invention, I am aware of the fact that many modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited to all the details of construction herein shown and described, but

What I do claim is:—

1. A focusing and adjusting device for an electric lamp comprising a cylindrical sleeve and bushing, one having a longitudinal rack and the other a tooth adapted to engage the rack, said rack and tooth being located substantially within the cylindrical walls of the sleeve, said sleeve and bushing being capable of a relative rotary motion to bring the tooth and rack out of engagement and permit relative longitudinal motion of the sleeve and bushing.

2. In a device of the character described, the combination of a sleeve, a bushing slidably mounted in said sleeve and adapted to be turned therein, a spring tongue forming a part of said sleeve and having a tooth on the inner side thereof, and a ratchet along the surface of the sleeve in position to engage with said tooth, said bushing having a smooth surface adjacent to said ratchet on which said tooth is adapted to ride up when the bushing is turned to one extreme position, whereby the tooth will be held out of engagement with the ratchet and free adjustment permitted.

3. In a focusing and adjusting device for an electric lamp, the combination with a stationary sleeve having a rectangular slot therethrough, and an integral tongue at one side of said slot provided with teeth on the inner concave side, and a bushing mounted in said sleeve and having a stop projecting outwardly into said rectangular slot for limiting the longitudinal and circumferential motion of the bushing in the sleeve, said bushing having a series of teeth on the circumference thereof in position to be engaged by the teeth on said tongue when the bushing is turned to one extreme position, and the bushing being provided with means for holding the tongue out of contact with said teeth when turned to the other extreme position.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

JASON C. STEARNS.

Witnesses:

ALBERT E. FAY,

C. FORREST WESSON.