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H. C. FOSTER

LAMP FOCUSING

Filed Jan. 29, 1925

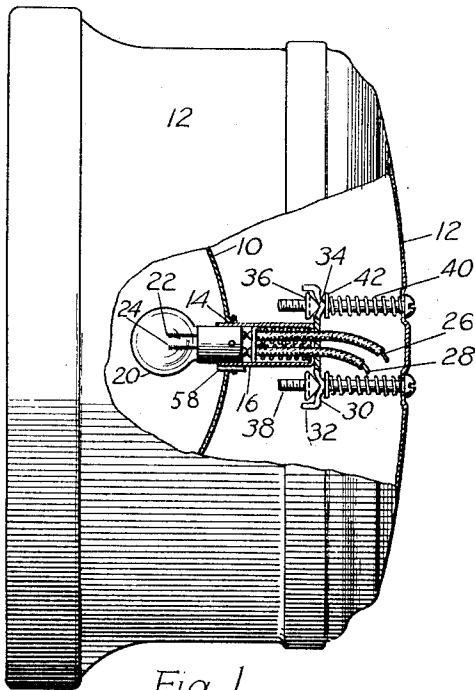


Fig. 1.

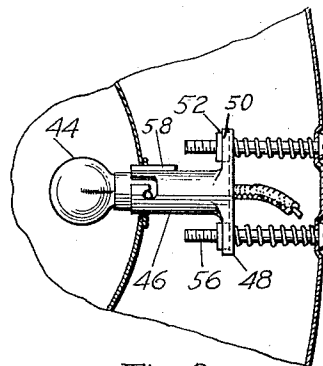


Fig. 2.

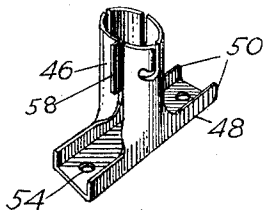


Fig. 3.

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HARRY C. FOSTER, OF CONNERSVILLE, INDIANA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO INDIANA LAMP CORPORATION, OF CONNERSVILLE, INDIANA, A CORPORATION OF DELAWARE, AND ONE-HALF TO GENERAL MOTORS CORPORATION, OF DETROIT, MICHIGAN, A CORPORATION OF DELAWARE.

LAMP FOCUSING.

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This invention relates to lamp focusing and is herein shown as embodied in a focusing device for the lamp of an automobile headlight.

- 5 An object of the invention is to provide a simple and inexpensive device for focusing a lamp filament or to restore a sagging or crooked filament to proper position relatively to the reflector. Another object is to provide effective means for transversely adjusting a lamp bulb, particularly a two-filament bulb which requires adjustment up or down to get maximum efficiency for a distant beam or for illuminating the road directly in front of the car.

To these ends and also to improve generally upon devices of the character indicated my invention consists in the various matters hereinafter described and claimed.

- 20 Referring to the drawing

Figure 1 is a side view of an automobile headlight partly in vertical section.

Figure 2 is a vertical central section of a modified form of the invention and

- 25 Figure 3 is a perspective view of the socket.

- In the drawings, the numeral 10 indicates a parabolic reflector enclosed in a casing 12. The reflector has a central opening where the metal is bent into a rounded bead 14 closely surrounding a lamp socket 16 and on which the socket can tilt, or slide in the direction of its axis. A lamp bulb 20, having two filaments 22 and 24, is detachably secured in the socket 16, one filament preferably being above the reflector axis and the other below it. Lead wires 26 and 28 connect the bulb with a source of lighting current.

- Fixed to the end of the socket 16, or integral with it, is a plate or cross bar 30 having its ends 32 bent forwardly. The plate is also bent near its ends to form two cross grooves or cavities 34 in which the tapered ends of nuts 36 are adapted to rock. Each nut is threaded on a bolt 38 extending through openings in the plate 30 at opposite sides of the axis of the socket. The bolts also pass loosely through openings in the casing 12 and their heads are accessible outside the casing. A coil spring 40 is coiled about each bolt and interposed between the casing and a washer 42 abutting against the plate 30. The springs hold the plate 30

against the nuts which are held from turning by their engagement with said plate.

Turning both bolts equally effects a longitudinal shifting or sliding of the socket 16 through the opening in the reflector. Turning one bolt, or turning one more than the other, effects a tilting of the plate 30 and a consequent tilting of the socket about the bead 14 as a fulcrum. This throws the lamp filaments up or down relatively to the focus of the reflector. The tilting of the plate 30 also raises or lowers slightly the free ends of the bolts and the plate 30 rocks on the tapered nuts.

In Figure 2, the lamp bulb 44 has one filament at the focus and the socket 46 and plate 48 are integrally formed from a piece of sheet metal. The metal is stamped out and bent to form opposite flanges 50 which embrace and hold square nuts 52. The plate 48 also has openings 54 loosely traversed by bolts 56 the heads of which are accessible outside the casing 58 indicates a key on the socket which engages a slot in the reflector to keep the socket from turning.

The operation of the form of the device shown in Figures 2 and 3 is substantially the same as that of the previous form. If both bolts 56 are rotated in equal amount the socket 46 is adjusted axially. If one bolt is adjusted and not the other the socket is tilted either up or down. The loose engagement of the bolts 56 in the openings 54 permits of the latter adjustment.

Although the invention has been described by reference to a specific construction, it should be understood that it is not necessarily limited to the construction selected for illustrative purposes.

I claim:

1. In a device of the character described, a reflector having a central opening, a socket slidable longitudinally through the opening and adapted to tilt on the rim of the opening, a lamp in the socket, a plate extending crosswise of the socket and connected thereto, and bolts at opposite sides of the socket and having their heads fixed against longitudinal movement relatively to the reflector, said bolts having a rockable threaded connection with the plate for sliding the socket longitudinally and tilting it transversely to focus the lamp.

2. In a device of the character described, a reflector having a central opening, a socket slidable longitudinally through the opening and adapted to tilt on the rim of the opening, a lamp in the socket, a plate extending crosswise of the socket and connected thereto, tapered nuts having a rocking engagement with the plate and bolts having their heads fixed against longitudinal movement relatively to the reflector and threaded in said nuts for sliding the socket longitudinally and tilting it transversely to focus the lamp.
3. In a device of the character described, a reflector having a central opening, a socket slidable longitudinally through the opening and adapted to tilt on the rim of the opening, a lamp in the socket, a plate extending crosswise of the socket and connected thereto, said plate having grooves at opposite sides of the socket, nuts having rockable projections in said grooves, and bolts passing loosely through said plate and threaded in said nuts, said bolts having their heads fixed against longitudinal movement relatively to the reflector and being independently operable to slide the socket longitudinally and tilt it transversely.
4. In a device of the character described, a reflector having a central opening, a socket slidable longitudinally through the opening and adapted to tilt on the rim of the opening, a lamp in the socket, a plate extending crosswise of the socket and connected thereto, said plate having grooves at opposite sides of the socket, nuts having rockable projections in said grooves, a casing, bolts passing loosely through said plate and said casing and threaded in said nuts, said bolts being independently operable to slide the socket longitudinally and tilt it transversely; and springs interposed between said casing and said plate.
- In testimony whereof I affix my signature.

HARRY C. FOSTER.