June 30, 1931. C. E. GODLEY 1,812,476

LAMP SOCKET MOUNTING

Filed May 22, 1929

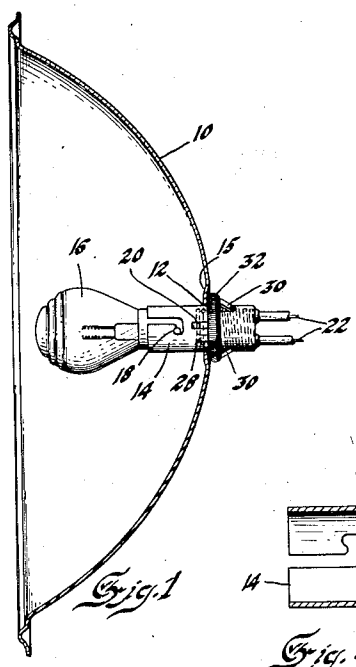


Fig. 1

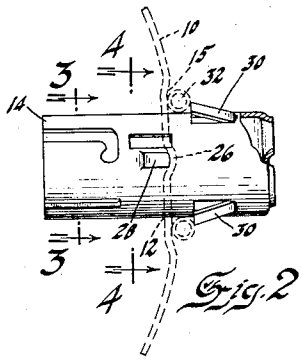


Fig. 2

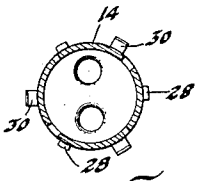


Fig. 3

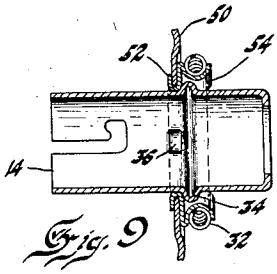


Fig. 9

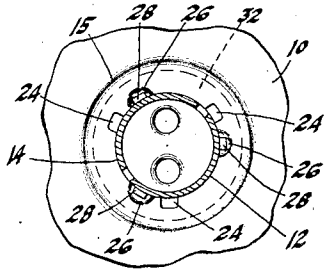


Fig. 4

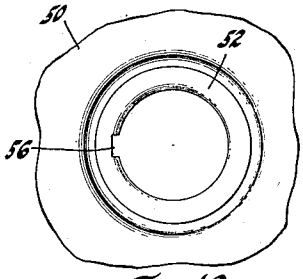


Fig. 10

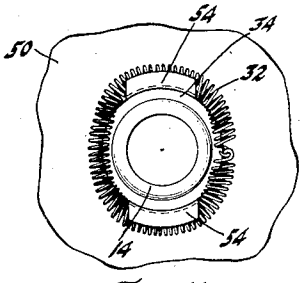


Fig. 11

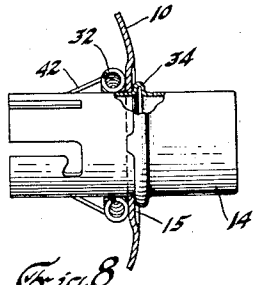


Fig. 8

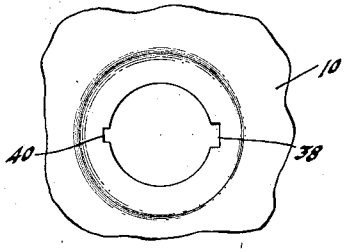


Fig. 6

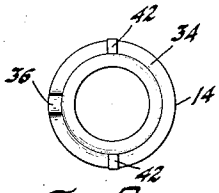


Fig. 7

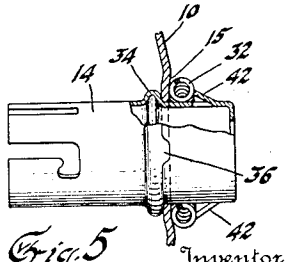


Fig. 5

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UNITED STATES PATENT OFFICE

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LAMP SOCKET MOUNTING

Application filed May 22, 1929. Serial No. 365,114.

Modern automobile headlamps are designed so that they are insensitive to slight changes in position of the filaments. This makes it possible to mount the bulb in fixed position in the reflector and do away with complicated focusing mechanism. In mounting the lamp socket in the reflector, it is desirable that it be detachably secured in place for ease and economy in assembly.

It is, of course, necessary to key the socket in the reflector so that it cannot turn about its axis for such rotation of the socket would cause the filaments to be moved out of focus. Prior detachable socket mountings with which I am familiar are subject to the objection that the act of removing and replacing a bulb in the socket would cause rotation of the socket thereby disturbing its adjustment and at times even disconnecting the socket from the reflector. I have overcome the difficulty by designing my socket mounting so that when assembled with the reflector, it is very rigidly held against displacement thereby permitting the removal and replacement of the bulb without disturbing the assembly.

Referring to the drawings:

Figures 1 to 4 show one form of my invention. Figure 1 shows the assembly in side elevation with the exception of the reflector which is shown in section. Figure 2 is an enlarged view corresponding to Figure 1, but with the retaining spring in dotted lines. Figure 3 is a section on line 3—3 of Figure 2 with the reflector removed. Figure 4 is a section on line 4—4 of Figure 2.

Figure 5 is a view, partly in section, and partly in elevation, showing a further modification.

Figure 6 is a rear elevation of the portion of the reflector, shown in Figure 5.

Figure 7 is a rear view of the socket shown in Figure 5.

Figure 8 is a view corresponding to Fig. 5 of a form of the device similar to the one shown in that figure but with parts reversed.

Figure 9 is a vertical section of a modified form.

Figure 10 is a front view of the central portion of the reflector shown in Figure 9, but with the socket removed.

Figure 11 is a rear elevation of the construction shown in Figure 9.

Referring first to the form shown in Figures 1 to 4, 10 indicates a reflector provided with a central aperture 12 to receive the socket 14 in one end of which is secured the lamp bulb 16 by means of a suitable bayonet slot connection indicated at 18. In the other end of the socket 14 is detachably received the usual connector 20, the details of which are not disclosed since they are well known in the art. The connector includes terminals for the wires 22 which supply current to the contacts on the base of the bulb 16. The reflector 10 adjacent the aperture 12 is inwardly dished as shown at 15. From the aperture 12 radiate slots 24 preferably unequally spaced circumferentially, and sockets or depressions 26 which are correspondingly spaced. The lamp socket 14 is provided with a series of outwardly pressed lugs, or tongues 28 adapted to pass through the slots 24 and upon partial rotation of the member 14 to seat in the depressions 26. The unequal spacing of the lugs 28 and the slots 24 and depressions 26 prevents the improper positioning of the socket 14 in the reflector and consequently makes it impossible to incorrectly assemble the bulb with the reflector. The socket 14 is likewise provided with a series of tongues 30 and between the tongues 30 and the rear of the reflector is placed a coil spring 32 arranged in the form of an annulus. This spring is preferably made of stiff resilient wire, such as piano wire, and exerts a powerful contracting force tending to seat it within the inwardly dished portion 15 of the reflector and behind the high points of the lugs 30. So powerful is the force exerted by the

spring 32 that the socket 14 is practically rigidly secured to the reflector with the tongues 28 seated in the depressions 26. The force applied to the socket 14 upon removing or inserting the bulb 16 is entirely insufficient to cause the tongues 28 to move out of the depressions 26, and indeed, tends rather to cause the spring 32 to seat more firmly in place. To accomplish this action, it is, of course, necessary to design the lugs 30 so that in case the socket 14 is pulled forwardly, the lugs tend to wedge the spring 32 into its seat in the inwardly dished portion 15 of the reflector.

The operation of assembling the socket 14 in the reflector is obvious. It is inserted from the rear of the reflector, the lugs 28 being passed through the slots 24 The socket is then partially revolved and drawn rearwardly until the lugs 28 seat in the depressions 26. The spring 32 is then forced up over the lugs 30 and, upon contraction, drops into the space between the dished out portion 15 of the reflector and the lugs 30.

In the preferred form of the invention shown in Figures 5, 6 and 7, the socket 14 is provided with an annular abutment 34 pressed out of the metal of the tube and at 36 the socket 14 is provided with a lug for seating in the large notch or keyway 38 in the reflector 10 preventing the rotation of the socket. Opposite the notch 38 is provided a second notch 40, the notches permitting passage of the lugs 42 in inserting the socket in the reflector. The lugs 42 correspond in function to the lugs 30 of the first form of the invention, and between them and the depression 15 provided in the reflector is received the clamping spring 32.

This socket is assembled by inserting the socket 14 into the reflector from the front, the lugs 42 passing through the slots 40 and 38. The socket is then rotated until the lug 36 seats in the notch 38. The spring 32 is then forced into locking position in the same manner as in the form shown in Figure 1.

The construction shown in Figure 8 is the same as that shown in Figures 5 to 7 except that the spring 32, the lugs 42 and the abutment 34 are at the opposite sides of the reflector compared with their position in Figures 5 to 7.

In the form shown in Figures 9, 10 and 11, to the reflector 50 is clinched an annulus 52 provided with integral arcuate seats 54 at the rear of the reflector. The socket 14 is of the same construction shown in Figure 8 except that the lugs or tongues 42 are omitted. The socket 14 is provided with an integral abutment 34, and with a lug 36. In assembling this design the socket 14 is inserted from the rear of the reflector until the lug 36 seats in the notch 56 provided in the side wall of the annulus 52. The abutment 34 then abuts against the rear surface of the clinched over portion of the annulus. The coil spring 32 is now seated in the channels 54 with the portions of the spring between the channels clamping the abutment 34 to the rear of the reflector.

My socket mounting may be manufactured at very slight expense. The socket is of sheet metal and it may be shaped by means of suitable dies. The lugs, such as shown at 28 and 30 in Figure 2, and at 36 and 42 in Figures 5 and 8, may either consist of flaps of metal attached to the socket along one edge only, or the flaps may be integrally connected with the socket at their side edges as well. The number of locating lugs to be used may be varied as desired. The spiral springs may be cheaply formed out of spring wire by automatic machinery.

I have found by actual test that the construction forms as secure and satisfactory a socket mounting as may be desired.

I claim:

1. A reflector having an opening therethrough and notches radiating from said opening, a socket having lugs, an annular abutment and a lug contiguous to the abutment, said first named lugs adapted to be passed through the said notches, and said abutment adapted to abut against the reflector with the contiguous lug occupying one of said notches, and a spring seated between said first named lugs and the reflector tensioned to wedge them apart and clamp the abutment against the reflector.

2. The combination of a reflector provided with a central aperture and a plurality of notches radiating therefrom, said reflector being provided with a depressed portion around the aperture, a tubular socket provided with an annular abutment and with a contiguous lug, said socket being provided with pressed out lugs adapted to be passed through the notches in the reflector, the first named lug seating in one of said notches to prevent rotation of the socket, and a coil spring in the form of an annulus seated in the depression in the reflector and bearing against the lugs for holding the socket in position, said spring being normally stressed when in position so as to tend to contract and wedge between the lugs and the bottom of the depression in the reflector and clamp the abutment in engagement with the reflector.

3. The combination of a reflector having an aperture therein, a tubular sheet metal socket provided with an abutment to engage the reflector to limit the extent of insertion of the socket in the reflector, said socket being provided at the other side of the reflector with outwardly pressed lugs of wedge form having their free ends projecting toward the reflector, and a coil spring in the form of an annulus bearing against the reflector and bearing against the ends of the lugs for holding the socket in position, said spring being nor-

mally stressed when in position so as to tend to contract and wedge between the ends of the lugs and the reflector and clamp the abutment in engagement with the reflector, the edge of the reflector and the socket being provided with an interfitting lug and notch to prevent rotation of the socket when locked in position.

In testimony whereof I affix my signature.

CHARLES E. GODLEY.