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ELECTRIC LAMP SOCKET

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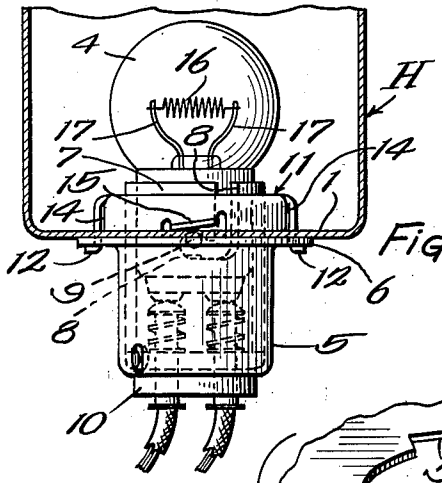


Fig. 1

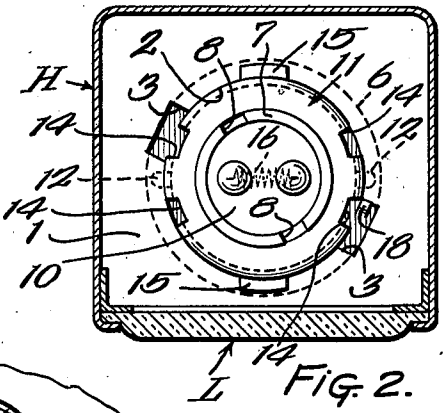


Fig. 2.

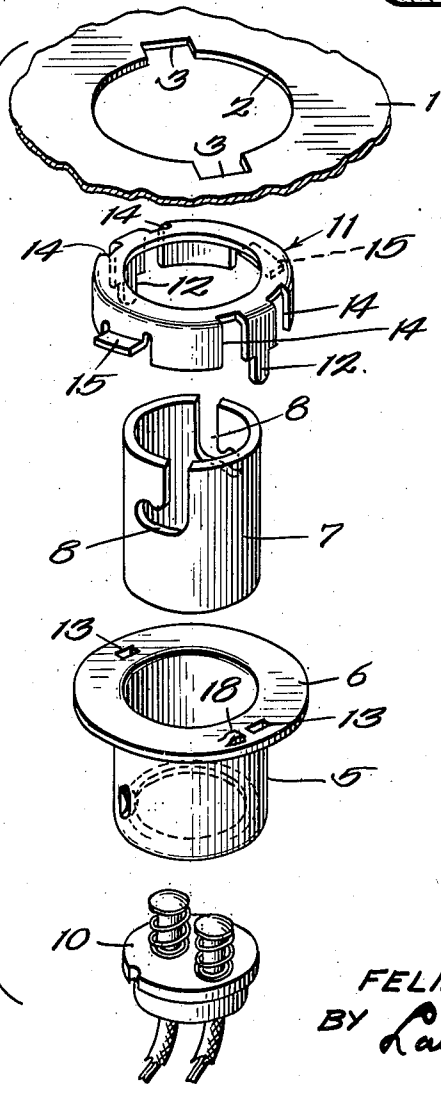


Fig. 3.

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ELECTRIC LAMP SOCKET

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8 Claims. (Cl. 173—339)

This invention relates to improvements in electric lamp sockets and more particularly to a socket provided with means to hold the socket in locked relation upon a support.

There are many instances where it is desirable to position an electric lamp upon a support in such a manner that the lamp may be readily attached to the support and yet insure its attachment against excessive vibration. For instance, in the present automotive vehicles electric lamps are employed to illuminate the instruments upon the instrument board of the vehicles, in tail lights, signal lights, and other places where it is difficult to apply the lamp and socket from the front of the support and when applied it is most desirable that the vibrations of the vehicle do not loosen the attachment to cause the lamp to become inoperative or the socket detached from the support.

It is an object of this invention to provide a socket to receive an electric lamp bulb with means that will allow the lamp and socket to be inserted through the back of a bracket to support it on the instrument board or through the casing of a tail or signal light and lock the socket thereto against detachment by vibration of the socket support and yet allow the socket to be readily detached by hand.

It is another object of this invention to provide means when the lamp is used to illuminate the lens of a signal light, which usually does not employ a reflector, to register the filament of the lamp when the lamp socket is attached to the casing of the signal light to present its greatest lighting effect.

With these and other objects in view, reference is made to the accompanying sheet of drawing which illustrates a preferred form of this invention with the understanding that detail changes may be made without departing from the scope thereof.

In the drawing:

Figure 1 is a view in elevation of this improved socket assembled with the lamp in place within a signal light, showing the housing to which the socket is attached in section.

Figure 2 is a top plan view of Figure 1 with the lamp removed, showing the housing and lens in section.

Figure 3 is a projected view of the parts of Figure 1, shown in perspective.

In the embodiment of this invention illustrated, it is preferable to provide the support 1 with a circular opening 2 having two or more radial slots 3 through which the lamp 4 and the lamp receiving member of the socket with the locking means may be inserted. The socket 5 is a tubular member having an annular right-angular flange 6 at the open end adapted to engage the rear of the support 1 and mounts within the tubular portion a lamp receiving member 7 preferably of the usual split sleeve type having bayonet slots 8 for receiving the usual lamp base pins 9. Support connectors for the lamp of commercial form are preferably mounted upon a disc 10 of insulating material secured in the end of the socket 5 opposite the flanged portion.

The improved means of releasably locking the socket 5 with the flange 6 in engagement with the rear of the support against detachment includes a cylindrical member 11 of resilient material, such as spring metal, of a diameter to be received within the opening 2 of the support. Oppositely disposed tongues 12 are provided depending from the cylinder which are passed through apertures 13 provided therefor upon the annular flange 6 and their ends bent to engage the under side of the flange to rigidly secure the cylindrical locking member 11 to the socket 5. Slits 14 are provided in the cylindrical surface on each side of each tongue 12 and the body of the member 11 on each side of each tongue bearing portion and separated therefrom is provided with diametrically opposite struck-out portions or flanges 15 of a size to freely pass through the radial slots 3 of the circular opening 2 in the support. These flanges or locking members 15 are preferably struck out at an angle to the annular flange 6 of the socket 5, as shown in Figures 1 and 3, and are so arranged that when the member 11 is passed through the opening 2 with the members 15 passing through the slots 3 and the socket 5 is rotated to the right, the flanges 15 will be caused to ride over the body of the support and place the body of the member 11 under tension, in other words, the portions of the cylindrical member 11 between the continuous slots 14 act as springs holding the outstanding members or flanges 15 in contact with the adjacent surface of the support and drawing the flange 6 into engagement with the opposite side of the support.

It is preferable to construct the lamp receiving member 7 to extend slightly above the top of the locking member 11 and spin over the metal at the top to close the opening between the body of the lamp receiving members 7, as shown in Figures 1 and 3.

It is customary in electric lamps, such as the lamp 4, used in tail lights or signal lights, to

mount the lamp's filament 16 in the form of a coil in a horizontal plane between connecting wires 17 so that if there is no reflector placed back of the filament the maximum amount of light passing through the lens would not be obtained unless the placing of the filament was positioned parallel to the face of the lens. This invention contemplates the provision of means to bring the filament 16 in position to project the maximum amount of light through the said signal light lens L when the lamp and lamp socket have been attached to the bottom 1 of the housing H. This is accomplished by determining the proper relation between the slots 3 in the bottom of the housing H which forms the support 1 and the amount of rotation of the socket 5 in the opening 2 to produce the required location of the filament and then striking up a curved tongue 18 upon the annular flange 6 of the socket 5 to enter one of the slots 3 upon rotation and to engage the free end of the tongue 18 with the body of the support at the other side of the slot 3.

By this construction the lamp 4 may be mounted in the socket and held in engagement by the bayonet slots 8 in the member 7 and then passed through the opening 2 in the support 1 with the flanges or outstanding portions 15 passing through the slots 3 and upon rotation to the right until the stop or end of the tongue 18 engages the body of the support at one side of the slot 3, the socket 5 is secured against vibration with the lamp filament 16 positioned to give the maximum amount of light projecting through the lens L of the light housing H and as the tongue 18 is curved the socket 5 may be readily detached by manually rotating it in the reverse direction until the locking flanges 15 register with the support slots 3.

What I claim is:

1. The combination of a support having a circular opening therein with radial slots formed in the body of the support with an electric lamp socket having an annular flange at one end adapted to engage the rear of the support, said flange mounting a perforated inverted cup-shaped spring locking member adapted to pass through the opening in the support allowing the base of an electric lamp to pass through the perforation for mounting in the socket, said locking member having side walls spaced apart from the perforation with members struck out from said side walls adapted to be passed through the said slots in the opening in the support, and upon rotation to engage the outer surface of the support and draw the socket flange into engagement with the opposite surface of the support.

2. The structure of claim 1, wherein the sides of the inverted cup-shaped member on each side of the struck out members are slotted and are joined to each other by the integral annular turned-in top.

3. Means for detachably locking an electric lamp socket to a support having a circular opening with radial slots with the lamp socket including a cylindrical casing mounting a lamp receiving member and that end of the casing provided with a right-angular annular flange adapted to engage the body of the support about said opening, said annular flange having secured thereto a perforated inverted cup-shaped resilient locking means having depending side walls spaced apart from the perforation passing about the lamp receiving member and having a plurality of outstanding ears formed in the sides thereof adapted to pass through the opening slots and upon rotation detachably lock the socket to the support.

4. Means for detachably locking an electric lamp socket to a supporting lamp housing having a circular opening with radial slots provided in the housing to receive the lamp and the lamp socket including a cylindrical casing mounting a lamp receiving member and that end of the casing provided with a right-angular annular flange adapted to engage the body of the support about said opening, said annular flange having secured thereto a perforated inverted cup-shaped resilient locking means passing about the lamp receiving member and having depending side walls spaced apart from the perforation with a plurality of outstanding ears formed in the said side walls adapted to pass through the opening slots and upon rotation detachably lock the socket to the support, said annular flange being provided with a curved struck up tongue between the wall of the cup-shaped member and the periphery of the flange adapted to ride into one of the slots during rotation of the socket and engage the body of the support to limit the rotation of the socket.

5. A lock socket for an electric lamp including a cylindrical casing open at one end and provided about that end with an annular flange, a lamp receiving member mounted within the socket and electrical connections mounted in the opposite end of the socket, a perforated inverted cup-shaped member having depending side walls spaced apart from the perforation mounted on the socket flange adapted to be passed through a cylindrical opening in a lamp socket support, and means on the sides of the cup-shaped member adapted to engage the body of the support upon one side and draw the annular flange into engagement with the other side of the socket, and wherein the cup-shaped member is of resilient material and is provided with depending tongues adapted to be passed through slits provided therefor in the annular flange and be secured to said flange, and wherein the walls of said cup-shaped member are provided with slots on each side of the depending tongues dividing the cylindrical walls and the two sections integral with the perforated top of said member.

6. A lock socket for an electric lamp including a cylindrical casing open at one end and provided about that end with an annular flange, a lamp receiving member mounted within the socket and electrical connections mounted in the opposite end of the socket, a perforated inverted cup-shaped member having depending side walls spaced apart from the perforation mounted on the socket flange adapted to be passed through a cylindrical opening in a lamp socket support, and means on the sides of the cup-shaped member adapted to engage the body of the support upon one side and draw the annular flange into engagement with the other side of the socket, and wherein the cup-shaped member is of resilient material and is provided with depending tongues adapted to be passed through slits provided therefor in the annular flange and be secured to said flange, and wherein the walls of said cup-shaped member are provided with slots on each side of the depending tongues dividing the cylindrical walls and the two sections integral with the perforated top of said member, and wherein the means to engage the body of the support are formed integral with each of the divided sections.

7. A lock socket for an electric lamp including

a cylindrical casing open at one end and provided about that end with an annular flange, a lamp receiving member mounted within the socket and electrical connections mounted in the opposite end of the socket, a perforated inverted cup-shaped member having depending side walls spaced apart from the perforation mounted on the socket flange adapted to be passed through a cylindrical opening in a lamp socket support, and means on the sides of the cup-shaped member adapted to engage the body of the support upon one side and draw the annular flange into engagement with the other side of the socket, and wherein the cup-shaped member is of resilient material and is provided with depending tongues adapted to be passed through slits provided therefor in the annular flange and be secured to said flange, and wherein the walls of said cup-shaped member are provided with slots on each side of the depending tongues dividing the cylindrical walls and the two sections integral with the perforated top of said member, and wherein the support engaging means are in the form of ears struck out from the bottom of the wall section on each portion between the contiguous dividing slots.

8. A lock socket for an electric lamp including a cylindrical casing open at one end and provided about that end with an annular flange, a lamp receiving member mounted within the socket and electrical connections mounted in the opposite end of the socket, a perforated inverted cup-shaped member having depending side walls spaced apart from the perforation mounted on the socket flange adapted to be passed through a cylindrical opening in a lamp socket support, and means on the sides of the cup-shaped member adapted to engage the body of the support upon one side and draw the annular flange into engagement with the other side of the socket, and wherein the cup-shaped member is of resilient material and is provided with depending tongues adapted to be passed through slits provided therefor in the annular flange and be secured to said flange, and wherein the walls of said cup-shaped member are provided with slots on each side of the depending tongues dividing the cylindrical walls and the two sections integral with the perforated top of said member, and wherein the support engaging means are in the form of ears struck out from the bottom of the wall section on each portion between the contiguous dividing slots, and wherein the outstanding ears are formed at an angle to the annular flange on the socket.

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