June 30, 1931. G. H. COULTER ET AL 1,812,623

HEADLIGHT SOCKET AND MEANS FOR MOUNTING SAME

Filed July 7, 1927

Fig. 1.

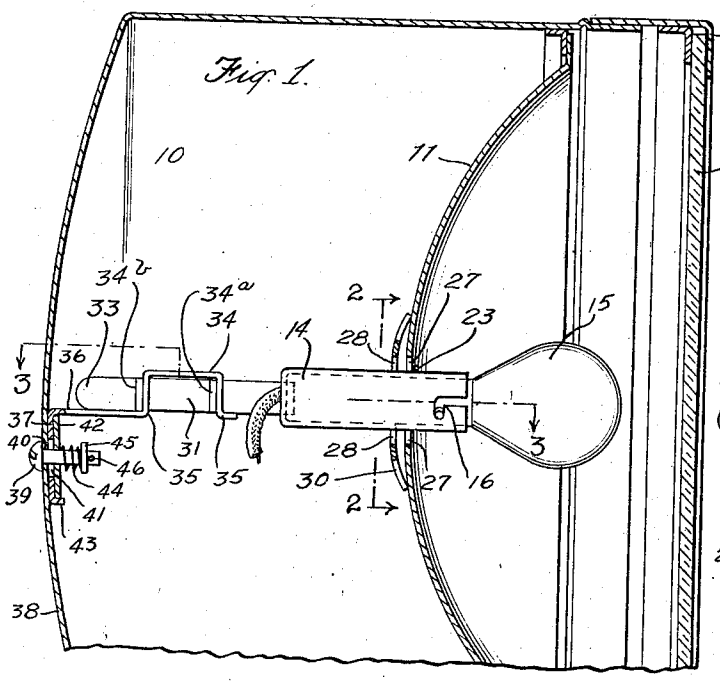


Fig. 7.

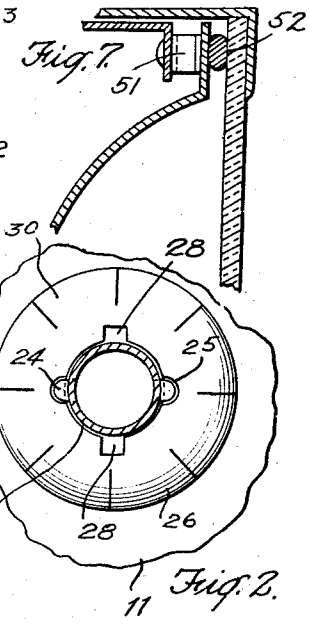


Fig. 2.

Fig. 3.

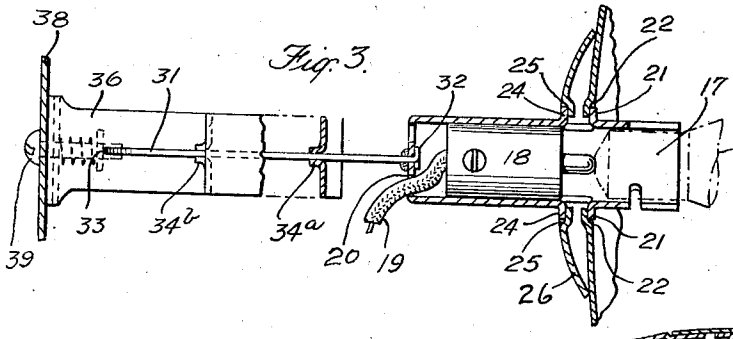


Fig. 4.

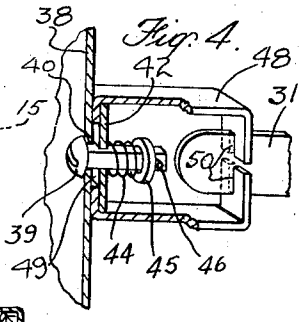


Fig. 5.

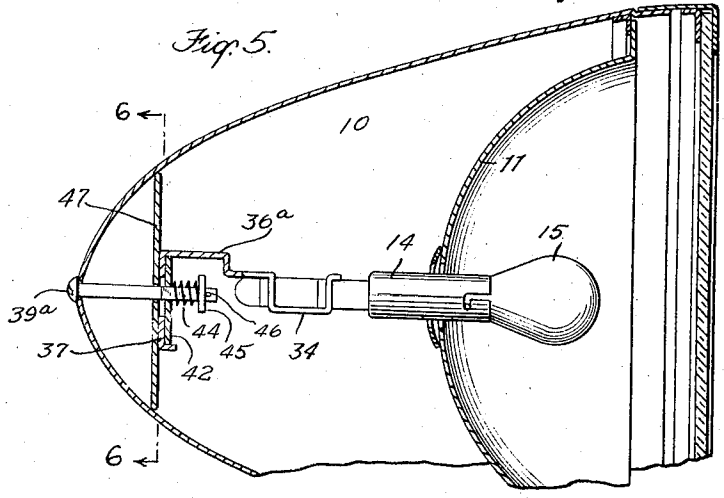
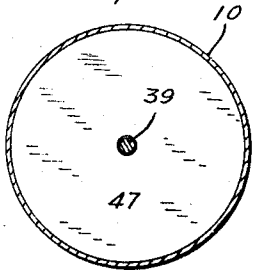


Fig. 6.



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UNITED STATES PATENT OFFICE

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HEADLIGHT SOCKET AND MEANS FOR MOUNTING SAME

Application filed July 7, 1927. Serial No. 203,883.

This invention relates to sockets for the light bulbs of automobile headlights, and particularly sockets to be used with that type of headlight in which no axial adjustment of the light bulb, with respect to the reflector, is necessary.

One of the objects of the invention is to provide a socket which may be rigidly attached directly to a reflector without the use of a sleeve to support the same.

Another object of the invention is to provide a bulb socket which may be rigidly attached to the reflector of the headlight against axial movement and sidewise movement, but permitting a vertical tilting of the socket with respect to the reflector.

Another object of the invention is to provide a means to adjust the socket vertically which may be easily manufactured and assembled.

Another object of the invention is to provide an adjusting means for vertical adjustment of a headlight socket which will automatically compensate for misalignment of the parts.

Another object of the invention is to provide a vertical adjusting means for a headlamp socket which will allow for axial movement of the reflector with respect to the adjusting means.

Other objects, and objects especially relating to economies of manufacture, will be apparent as the description of the invention proceeds.

Several embodiments of the invention have been illustrated in the accompanying drawings, in which

Fig. 1 is a sectional side elevation of a portion of a headlight embodying our invention;

Fig. 2 is a sectional end view through the socket taken on the line 2—2 of Fig. 1;

Fig. 3 is a plan view, partly in section of the socket and adjusting means;

Fig. 4 is a perspective view of a modified form of the adjusting means;

Fig. 5 is a sectional elevation showing the invention attached to a different type of headlamp;

Fig. 6 is a detail view of a portion of the construction shown in Fig. 5; and

Fig. 7 is a detailed view of a modified form of headlight in which the reflector is yieldingly mounted with respect to the casing.

Referring now more specifically to the drawings, the invention is shown as attached to a headlight having a casing 10, a reflector 11, and a lens 12, held in place by the usual rim 13. A socket 14 is adapted to receive a light bulb 15 by the usual bayonet slots 16. The socket 14 comprises a tubular shell open at one end 17 to receive the base of the bulb 15, and containing therein a suitable electrical contact member 18 to make the electrical connection between the bulb 15 and the source of energy, the connecting wires 19 passing out through an opening 20 in the rear of the socket. A pair of ears 21 are bent up from opposite sides of the socket, and are adapted to seat into depressions 22 on the edge of the opening 23 through the reflector 11. Spaced slightly from the ears 21 is another pair of ears 24 which ears are bent outwardly in a similar manner to the ears 21, and are adapted to seat in depressions 25 formed in a spring washer 26. The reflector 11 has a pair of oppositely spaced openings 27 formed in the edge of the opening 23 passing through the center thereof and spaced at an angle of approximately 90° from the depressions 22. Similarly, the spring washer 26 has a plurality of openings 28 in the periphery of the hole 29 through the center thereof and spaced approximately 90° from the depressions 25. The spring washer is slit in a plurality of places around its periphery to form resilient springs 30, and the whole washer is dished so that when placed against the rear of the reflector, the resilient springs 30 will bear thereagainst before the main part of the washer contacts therewith.

In assembling the socket in the reflector, the washer 26 is placed against the rear of the reflector 11, so that the openings 27 align with the openings 28 and the socket is inserted through the hole 23 in the reflector and the hole 29 in the washer until both the reflector and washer come between the ears 21 and 24. The parts are so proportioned that

in order to assume this position the washer must be pressed against the reflector causing a flexing of the spring fingers 30. The socket is then turned through an angle of approximately 90°, and when the tension on the washer is released, the ears 21 and 24 will seat in the depressions 22 and 25 respectively. The socket is then rigidly held in the reflector, the spring washer 26 bearing against the rear of the reflector and urging the socket rearwardly, while the socket is held against rearward movement by the ears 21. It will be evident that no axial movement of the socket is permitted, nor can there be any movement from side to side, but the socket is at the same time free to tilt vertically about the ears 21, as pivots, and against the tension of the spring washer 26. The friction of the washer against the reflector tends to hold the washer and socket at any angle to which they are tilted.

The socket thus described is adapted to be used in a headlight in which no axial adjustment of the bulb with respect to the reflector is necessary. However, it may be desirable to provide a vertical adjustment for the bulb, and such an adjustment, operable from the rear casing, has been illustrated in the drawings. A flat, pliable strip 31 is attached to the rear of the socket 14 in any desirable manner, such as by lugs 32 extending through a slot in the rear of the socket and bent over and soldered in position, and extends rearwardly of the socket. The end of the strip 31 is preferably rounded, as illustrated at 33, for a purpose to be hereinafter described. A substantially U-shaped member 34 is adapted to engage the strip 31. The legs 35 of the U-shaped member are provided with slots through which the strip 31 is adapted to be freely movable, and the rear leg 35 of the U-shaped member is provided with a horizontal plate 36 which is bent rearwardly to a point adjacent the rear wall of the casing and downwardly to form a plate 37 adapted to slidably engage the rear wall 38 of the casing. A pin 39 is mounted in a hole 40 in the rear wall 38 and extends through a slot 41 in the plate 37. A cam 42 is non-rotatably but slidably mounted on the pin 39, and is adapted to contact at its periphery with a flange 43 bent over from the end of the plate 37 at the bottom and the plate 36 at the top. A spring 44 is positioned around the pin 39 and bears at one end against the cam 42, and at the other end against a washer 45 held in place on the pin 39 by a pin 46.

By rotating the pen 39, the cam 42 is rotated, which in turn raises and lowers the plate 37. This raises and lowers the end of the socket 14 and causes the same to tilt about the ears 21 on the reflector. When the rear end of the socket is raised, so that the strip 31 is out of alignment with the slots through the U-shaped member 34, the U-shaped member will be caused to tilt up or down against the action of the spring 44, and as this will most probably be the normal position of the socket and adjusting means, the same will be held against rattle and movement by the spring 44.

It will be noted that the adjusting mechanism is attached to the rear wall 38 of the casing, and the socket is attached to the reflector. In placing the reflector in the headlight, therefore, it is only necessary to aim the strip 31 into the first slot 34ª and push the reflector into place, whereupon the strip 31 will enter the second slot 34ᵇ and the reflector may then be fastened into position. The edges of the slots 34*a* and 34*b* are bent rearwardly so that the strip 31 may be easily inserted. The strip 31 being bendable may be inserted in the adjusting means even though out of alignment therewith, and hence in manufacturing, the assembling of the parts need not be as accurate as has been found necessary heretofore.

In Fig. 4 we have shown a modification of the construction above described in which a strip of material is bent to form a rectangular closed loop 48 having the ends of the strip opposing each other at one end of the rectangle and spaced slightly apart. A slot 49 is provided in the opposite end of the rectangle to receive the pin 39 and a pair of slots 50 are provided in the ends of the strip aligning with each other to receive the end of the strip 31. The cam 42 is held against the inside of the rectangle and the rectangle is held against the rear wall 38 of the casing by the pin 39 and spring 44 similarly to the construction described above. The ends of the strip 48 may have a slight tension, if desired, against the strip 31 in order to eliminate any play between the parts.

In Fig. 5 the invention has been shown adapted to a bullet-shaped headlight. To this end, the pin 39*a* is lengthened, and a disc 47 is placed loosely in the rear of the headlight to provide a contacting surface for the plate 37 similar to the rear casing 38 in Fig. 1. The leg 36*a* of the U-shaped member 34 may be bent, as illustrated, in order to properly align the socket with the adjusting means or the rectangular strip may be used as shown in Fig. 4.

This socket and adjusting means lends itself particularly to use in a headlight in which the reflector is yieldingly mounted as shown in Fig. 7, and is forced rearwardly against the tension of the leaf springs 51 by the sealing cord 52 when the lens is placed in position as the socket and reflector are always free to move axially with respect to the adjusting means.

While we have illustrated several embodiments of the invention, many changes may be made in the construction without departing from the spirit of the invention, and we

do not therefore, desire to limit ourselves to the specific construction shown. Only insofar as we have particularly pointed out our invention in the accompanying claims do we desire to be limited.

Having thus described our invention, what we claim is:

1. In a headlight, a casing; a reflector in said casing; a socket mounted in said reflector for movement in one plane only; means cooperating with said socket to impart a vertical motion thereto and mounted on said casing and adapted to have a limited movement with respect thereto; and a member axially aligned with the socket and separably connecting said socket and means, said member being unbendable in the plane in which said socket has movement but bendable in a plane perpendicular thereto, said member comprising the sole connecting means between said socket and said first mentioned means.

2. In a headlight, a casing; a reflector in said casing having an opening therein; a bulb socket in said opening; means to yieldingly maintain said socket in fixed axial relation to said reflector comprising a single member independent of both said reflector and said socket; a plate adjacent said casing having a U-shaped portion; a flat strip connecting said socket and the U-shaped portion of said plate, attached to one, and separably and extensibly cooperating with the other; and cam means to move said plate whereby said socket is tilted against the yielding action of said first mentioned means.

In testimony whereof, we affix our signatures.

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