Nov. 12, 1929. G. H. COULTER 1,735,451

LAMP ADJUSTING APPARATUS

Original Filed April 13, 1925

Fig. 1

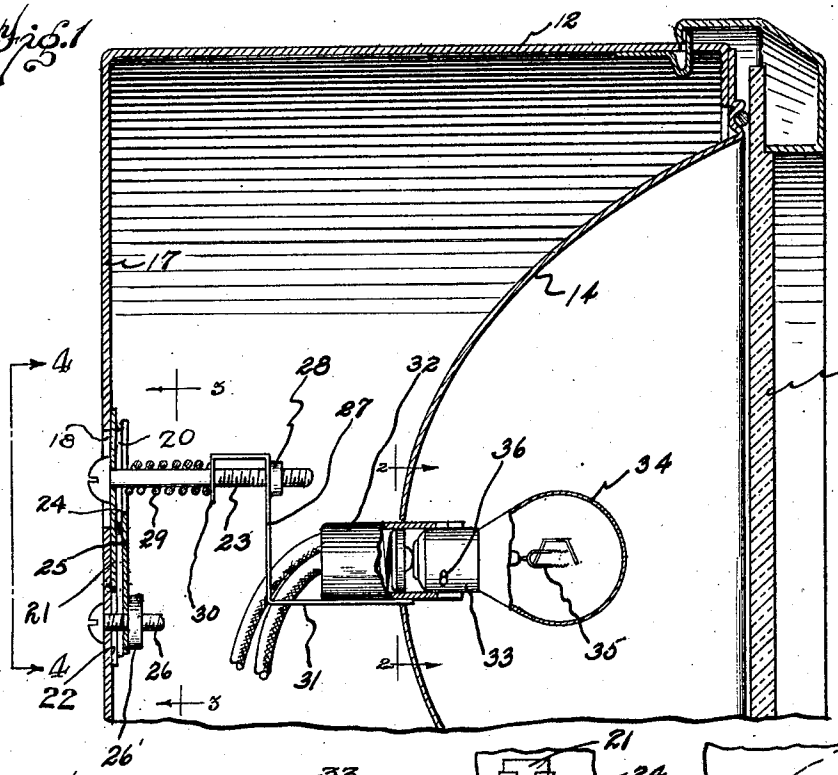


Fig. 2

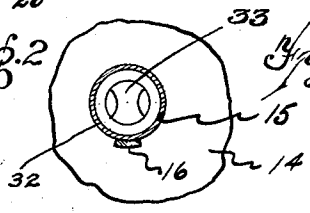


Fig. 3

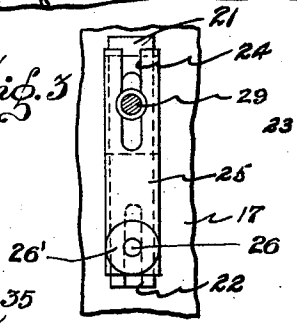


Fig. 4

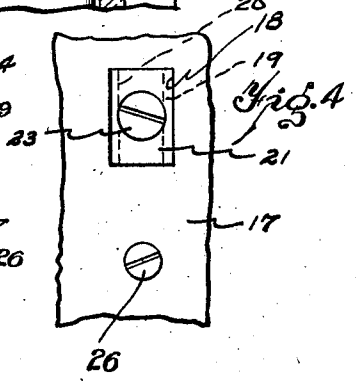


Fig. 5

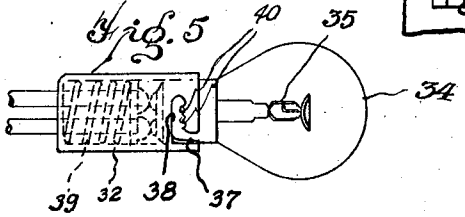


Fig. 6

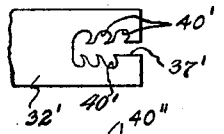


Fig. 7

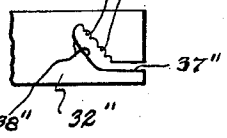
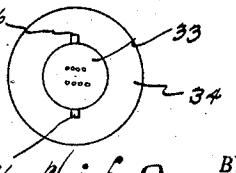


Fig. 8



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Patented Nov. 12, 1929 1,735,451

UNITED STATES PATENT OFFICE

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LAMP-ADJUSTING APPARATUS

Application filed April 13, 1925, Serial No. 22,650. Renewed October 10, 1928.

My invention relates to a new and useful improvement in a lamp adjusting apparatus, adapted for use with lamps used with a reflector and particularly designed for vehicle headlights and the like.

The invention is particularly adaptable for use in connection with lamp bulbs having filaments which are intended for use at a predetermined distance from and at a predetermined angle relatively to the reflector with which used.

An object of the invention is the provision of a bulb supporting means, permitting the mounting of the bulb at various angles of rotation in the supporting means.

Another object of the invention is the provision of mounting means for a bulb whereby the bulb may be moved longitudinally so as to be positioned at varying distance from the reflector with which used.

Another object of the invention is the provision of a bulb supporting means adapted for effecting a tilting of the bulb relatively to a reflector with which used.

Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood from a reference to the accompanying drawings which form a part of this specification and in which,

Fig. 1 is a central vertical sectional view of a headlight embodying the invention, showing parts in section and parts in elevation,

Fig. 2 is a sectional view taken on substantially line 2—2 of Fig. 1,

Fig. 3 is a fragmentary elevational view taken on line 3—3 of Fig. 1,

Fig. 4 is a fragmentary elevational view taken on substantially line 4—4 of Fig. 1,

Fig. 5 is a side elevational view of the bulb and socket,

Fig. 6 is a fragmentary side elevational view of a modified form of socket,

Fig. 7 is a fragmentary side elevational view of a further modified form of socket,

Fig. 8 is an elevational view illustrating the position of the filaments in the bulb.

As shown in the drawings, the invention is illustrated as used with a vehicle headlight, comprising a casing 12 having a lens 13 mounted therein and provided with a parabolic reflector 14. The reflector 14 is provided with an opening 15 which is circular throughout the major portion of its circumference and provided with a slight notch 16 at one end thereof. The rear wall 17 of the headlight casing is provided with an opening 18 formed therein, the marginal edges of the rear wall 17, at the opening 18, being inturned and offset, to lie in a parallel plane to the main body of the wall 17, to provide guides 19 and 20 adapted for embracing a plate 21, which is positioned in engagement with the rear wall 17, and adapted for slidable vertical movement relatively thereto. The plate 21 is provided with a longitudinally extending slot 22 at its lower end. Projected through the plate 21 is a screw 23 which is adapted to engage in a longitudinally extending slot 24 formed in a plate 25 which is secured to the rear wall 17 by means of a suitable screw 26, the screw 26 being projected through the slot 22. The arrangement is such that upon loosening the nut 26′, from the screw or bolt 26, the plate 21 may be moved vertically in the casing 12. A supporting bracket 27 is formed U-shaped at one end and provided with a neck 28 in which the screw 23 is adapted to thread, a spiral spring 29 being positioned upon the screw 23 in bracing relation and adapted to engage at one end the downwardly directed leg 30 of the U and at the opposite end, the plate 25.

The bracket 27 has an angularly turned portion 31 which is welded, soldered, or otherwise suitably secured to a lamp socket 32, which is generally constructed in the conventional manner adapted for the reception of a neck 33 which is mounted on a light bulb 34, having the lighting filaments 35 mounted therein. Projecting outwardly from the neck 33 of the light bulb are trunnions 36 each of which, when the neck is inserted into the socket 32, is adapted to engage in a longitudinally extending slot 37, which communicates with an angularly turned slot 38. The connection is the well known bayonet joint connection for mounting

a light bulb on a socket, a suitable coil spring 39 being provided for maintaining the proper contacts.

In the present invention, I have provided a plurality of notches 40 in the forwardly extending portion of the socket 32 at the angularly turned slot 38, so that, when the light bulb is placed in the socket, the trunnions may be engaged in any of the notches 40 desired, so that the light bulb may be rotated to varying positions relatively to the socket in which mounted. This varying of the position of the light bulb relatively to the socket is desirable, in order to bring the filaments 35 into the desired position for properly focusing and reflecting. Modified forms are shown in Figs. 6 and 7. In Fig. 6 the socket 32′ is shown with the longitudinally extending slot 37′ and provided with the lateral notches 40′. In Fig. 7 I have shown the socket 32″ and the longitudinally extending slot 37″ communicating with the angularly turned slot 38″, one edge of which is provided with the notches 40″.

In the manufacture of light bulbs, the filaments, which generally lie in a plane or in a pair of planes, are definitely positioned relatively to the trunnions in the various light bulbs, so that, when the light bulb is placed in the socket, the filaments, with the sockets as now ordinarily constructed, will be lying in varying planes, depending upon their location in the light bulb at the time of the manufacture of the light bulb.

With the different reflectors, it is necessary that these filaments lie in a certain plane, in order to have the proper focusing and the most efficient reflection. Consequently, it is desirable to effect a rotation of the light bulb relatively to the socket in which mounted, in order to bring about the proper focusing. The presence of the notches 40 in the socket permits this positioning of the light bulb in various positions, while at the same time a secure mounting of the light bulb in the socket is provided.

As shown in the drawings, the socket 32 is projected through the opening 15, the angularly turned portion 31 of the bracket being engaged in the notch 16, so that the socket, itself, is not rotatable relatively to the reflector 14. It is also desirable to move the socket longitudinally in order to place the filament the proper distance from the reflector 14. In order to effect this longitudinal movement of the socket, so as to carry the light bulb away from or cause it to approach the reflector, the screw 23 is provided. It is apparent that by threading the screw 23, the socket may be moved longitudinally relatively to the reflector 14, the socket 32 being loosely positioned in the opening 15.

With some light bulbs, it is necessary that the axis of the socket be tilted to the horizontal, in order to raise the filament of the light bulb to the proper height, so as to permit proper focusing. In order to accomplish this, I have mounted the screw 23 slidably relatively to the casing wall 17, as described. When it is desired to tilt the socket 32, a loosening of the nut 26′ on the screw or bolt 26 will permit the screw 23 to be moved vertically, so as to effect a slight tilting of the socket 32. When the proper adjustment has been had, a tightening of the nut 26′ will serve to bind the various parts in their adjusted position. The presence of the spring 29 serves to retain the plate 25 in close engagement with the guide members 19 and 20, to prevent any vertical movement of the screw 23, should the nut 26′, for any reason, become loosened.

While I have illustrated and described the preferred form of structure, I do not wish to limit myself to the precise form of structure shown, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A light bulb socket supporting mechanism of the class described adapted for use with a head light casing having a rear wall, a reflector and a socket projected through an opening in the reflector comprising: a bracket having an arm extending substantially parallel to the axis of said socket and secured thereto; a U-shaped support projecting upwardly from the rear end of said arm, one of said legs being longer than the other and the longer of said legs being attached at its end to the rear end of said arm; a screw threaded into the legs of said U-shaped member adjacent the bight thereof, said screw being projected through an opening formed in the rear wall of said casing, a plate positioned normally in engagement with the inner surface of said rear wall and covering said opening, said plate having an opening formed therein for the reception of said screw, said screw effecting, upon its threading in said legs, and axial movement of said socket relatively to said reflector, said screw and said plate being movable vertically relatively to said casing at will for effecting a tilting of said socket to the horizontal; and means for locking said screw against vertical movement relatively to said casing.

2. A light bulb supporting mechanism of the class described adapted for use with a head light casing having a rear wall, a reflector and a light bulb projecting through an opening in said reflector comprising: a plate loosely positioned normally in engagement with the inner surface of the rear wall of said casing, said rear wall having an opening formed therein and adapted for being covered by said plate; a screw projected

through said opening and through an opening formed in said plate; a locking plate positioned inwardly of said screw supporting plate; means for clamping said locking plate to lock said screw supporting plate against relative movement relatively to said casing; a U-shaped supporting bracket having one leg longer than the other, each of said legs being provided with threaded openings for the reception of said screw, the longer of said legs having a neck formed thereon for affording a greater bearing for said screw; and a forwardly turned portion on the end of the longer of said legs extending substantially parallel to the axis of and secured to said socket, a threading of said screw inwardly or outwardly effecting an axial movement of said socket and a vertical movement of said screw relatively to said casing effecting a tilting of said socket to the horizontal; and a spring embracing said screw and engaging, at one end, the shorter of said legs, and at the opposite end said locking plate for normally retaining said screw in an inwardly thrust position and for preventing rattling of said parts, said locking plate being vertically stationary relatively to said casing and provided at its upper end with a longitudinally extending slot, said screw engaging in said slot and riding longitudinally thereof in its vertical movements.

In testimony whereof, I have signed the foregoing specification.

GUY H. COULTER.