

Sept. 13, 1932.

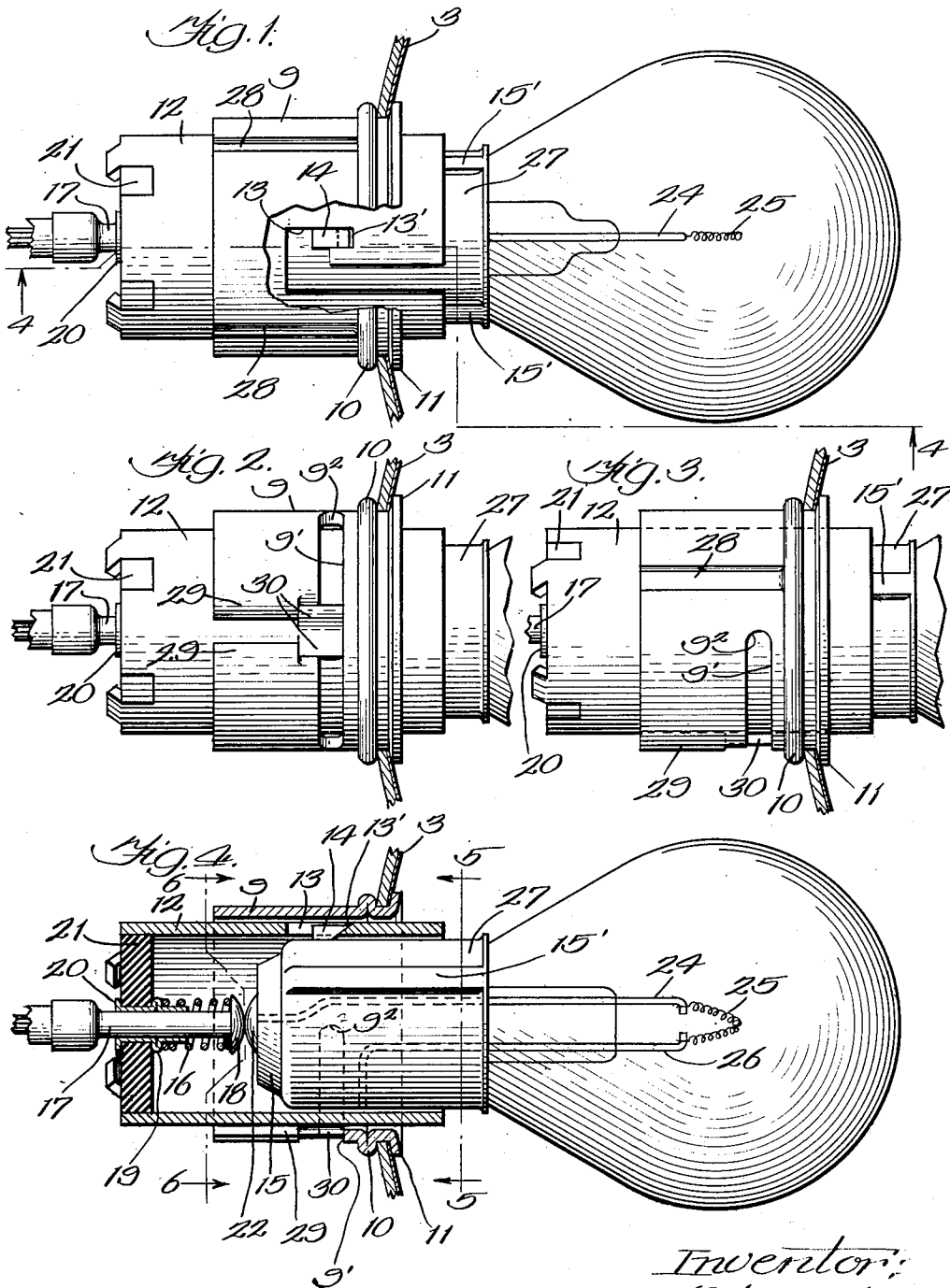
H. A. DOUGLAS

1,876,873

ELECTRIC LAMP

Filed Oct. 23, 1929

2 Sheets-Sheet 1



Inventor:
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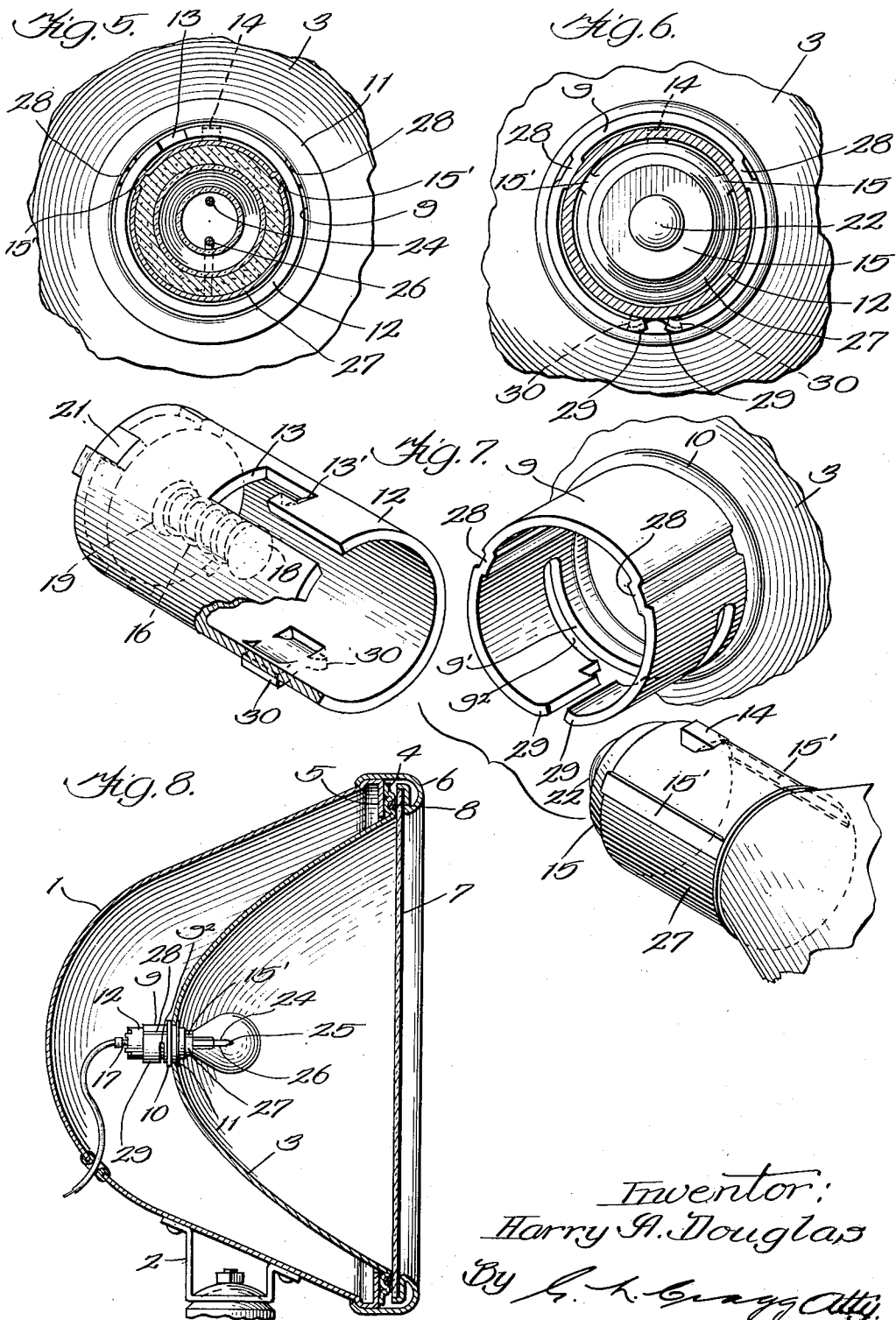
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UNITED STATES PATENT OFFICE

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ELECTRIC LAMP

Application filed October 23, 1929. Serial No. 401,722.

My invention relates to lamp structures employing sockets for receiving the bases of incandescent lamps. The invention has for its object the provision of improved means for fixing the lamps in predetermined positions with respect to the sockets receiving the bases of the lamps. The invention finds an important use in connection with lamps having concave reflectors that are equipped with holders for the sockets and having in association therewith means for predetermining the positions of the sockets with respect to the holders and reflectors. A lamp thus constructed will direct light in a fixed path with respect to the axis of the reflector, thereby avoiding difficulty now frequently encountered in the adaptation of reflecting lamps to automotive vehicles, bodily or other adjustment of the lamps having frequently been required when the users happen to find that the light is improperly directed.

In my copending application Serial No. 403,613 filed October 30, 1929, I have broadly claimed a lamp receiving socket within a holder and smaller in cross section than the holder, and means pressing the socket laterally against one side of the holder. The structure disclosed in the aforesaid copending application employs a concave reflector with respect to which the socket holder is fixed, the bore of the socket holder being in register with an opening that is formed through the reflector to permit of the insertion of the base of an incandescent lamp. The structure of the aforesaid application is also inclusive of spaced apart spacing means intervening between the holder and socket in the place at which the socket is pressed against the holder.

The structure herein disclosed is preferably inclusive of all of the characteristics above generally set forth. A portion of the structure involving my present invention is inclusive of an incandescent lamp having its base received in the socket and which base is smaller in cross section than the bore of the socket, said socket and lamp base having interengaging formations having camming engagement forcing lateral movement of the lamp base against a side of the socket. One

and preferably each of the interengaging formations that are employed to press the lamp base sidewise against the socket is of wedge shape. In the preferred embodiment of the invention the socket is provided with a bayonet channel in its side and the lamp base is provided with a lateral bayonet projection for reception in the channel. This bayonet projection and the seat for receiving it both preferably constitute the interengaging formations that press the lamp base laterally against the socket. The bayonet channel and projection cooperate to define the position of the lamp longitudinally of the socket and also to prevent rotative movement of the lamp within the socket. My structure preferably fixes the location of the filament with respect to the reflector. By fixing the position of the lamp longitudinally of the socket the necessity of a special design for the reflector which has hitherto been proposed to procure the same lighting effect of the filament in different positions along reflector axis is avoided. The invention, however, is not to be thus limited.

If the holder be associated with a reflector, the position of the lamp filament with respect to the reflector is assured, it being understood that the lamp filaments of the incandescent lamps which are to be used in the structures of my invention preferably occupy predetermined uniform positions with respect to the lamp bases.

The invention will be more fully explained in connection with the accompanying drawings, showing the preferred embodiment thereof, and in which Fig. 1 is a plan view with a portion of the reflector shown in section; Fig. 2 is a view from beneath, part of the bulb being broken away; Fig. 3 is a side view; Fig. 4 is a sectional view on line 4—4 of Fig. 1; Fig. 5 is a sectional view on line 5—5 of Fig. 4; Fig. 6 is a sectional view on line 6—6 of Fig. 4; Fig. 7 is a perspective view illustrating component parts of the structure in separated relation; and Fig. 8 is a sectional elevation taken through the axis of the parabolic reflector.

The lamp illustrated includes a housing or back element 1 having a bracket 2 on its

bottom side by which it may be assembled with the automotive vehicle or other support, as indicated. The housing or back 1 encloses a parabolic reflector 3 which is formed with a grooved flange 4 at its forward end. This flange is pressed against a rim 5, provided upon the housing, by an assembling ring 6. This assembling ring also presses the light transmitting closure 7, usually of glass, against a gasket 8 which is seated in the flange 4.

The generally cylindrical socket holder 9 has its forward end passed through a circular opening formed through the crown of the reflector, in the embodiment of the invention shown. The forward end of the holder 9 is formed with flanges 10 and 11 between which the surrounding edge portion of the reflector is clamped, whereby the holder and reflector are held coaxial, in the structure illustrated.

The generally cylindrical lamp socket 12 is held in assembly with and within the holder 9 by the means hereinafter set forth. This socket is preferably formed with a single bayonet slot or channel 13 for receiving a bayonet projection 14 upon the base 15 of an incandescent lamp. The bayonet projection 14 is snugly engaged by the sides of the seat to prevent the lamp from turning and is preferably in the shape of a hook having a front downwardly and rearwardly inclined wedging face. The bayonet seat 13' for the bayonet projection is formed with a similarly sloping wedging face. These two faces cooperate to exert lateral pressure upon the lamp base to draw it toward the side of the socket at which the bayonet channel is provided. Any suitable means is employed for pressing the wedging face of the bayonet projection 14 upon the wedging seat 13', whereby the wedging faces ride over each other. The means illustrated is inclusive of a coiled spring 16 which surrounds a plunger 17 constituting a circuit terminal and presses forwardly upon the plunger head 18 and rearwardly upon the flange 19 of a metallic guiding sleeve 20. This guiding sleeve is mounted upon an insulating disc 21 which is fixedly assembled with and within the rear end of the socket 12. The plunger head 18 presses against a contact 22 which is carried by the generally cylindrical lamp base 15 which is made of insulating material.

Spacing means are interposed between the lamp base and socket, these spacing means being preferably in the form of longitudinal ribs provided upon one of these elements, these ribs, as shown, being provided upon the lamp base as indicated at 15'. The bayonet projection is interposed between these ribs and the ribs are less than 180 degrees apart, preferably 120 degrees apart, whereby the lamp base is drawn against the contiguous side of the lamp socket due to the pressure

of the spring 16. The lamp structure illustrated is a so-called single pole structure, though the invention is not to be thus limited. Where a single pole structure is employed, the contact 22 is upon the axis of the lamp base. A stiff leading in wire 24 establishes connection between the contact 22 and one terminal of the filament 25. Another stiff leading in wire 26 establishes a connection between the other terminal of the filament and the metallic sheath 27 which surrounds the insulating portion of the lamp base and, from the point of view of my invention, also constitutes a part or enlargement of the lamp base. The body of the reflector, the holder 9, and the socket 12 are grounded and when the lamp is in place the sheath 27 is also grounded as it has connection with the holder, as will more fully appear.

In carrying out my invention the cross section of the socket 12 is smaller than the bore of the holder 9 and the base of the lamp, inclusive of its sheath 27, is smaller, in cross section, than the bore of the socket.

Spaced apart spacing means intervene between the holder 9 and the socket 12. These spacing means are preferably in the form of ribs 28 which extend along the holder. Each rib is desirably integrally formed with one of the elements 9 or 12, both ribs being shown as being integrally formed with the holder. The ribs are spaced less than 180 degrees apart, preferably 120 degrees apart. The means for pressing the socket 12 against the holder 9 is desirably inclusive of two spring tongues 29 which are integrally formed with the holder 9. The socket 12 is formed with a lug 30 which is snugly engaged between recessed portions of the spring tongues 29 and between these tongues and the rear wall 9' of a slot 9² that is formed in the holder to fix the socket with respect to the holder. This slot 9² also serves to form the spring tongues.

By the structure illustrated, identically constructed lamps having their filaments in exactly the same positions with respect to the lamp bases may be interchangeably assembled with the lamp sockets with the assurance that the filaments will occupy one predetermined location with respect to the reflector axis.

Changes may be made without departing from the invention.

Having thus described my invention, I claim:

1. The combination with a lamp socket; of an incandescent lamp having its base received in said socket and which base is smaller in cross section than the bore of the socket, said socket and lamp base having interengaging laterally extending formations one of which hooks upon the other, said formations having camming engagement forcing

lateral movement of the lamp base against a side of the socket.

2. The structure of claim 1 wherein one of the interengaging formations is of wedge shape and rides upon the other, in a laterally extending direction.

3. The structure of claim 1 wherein each of the interengaging formations is of wedge shape and rides upon the other.

4. The combination with a lamp socket; of an incandescent lamp having its base received in said socket and which base is smaller in cross section than the bore of the socket, said socket and lamp base having interengaging laterally extending formations one of which hooks upon the other, having camming engagement forcing lateral movement of the lamp base against a side of the socket; and a spring carried by the socket and pressing upon the base longitudinally of the base and socket to effect cooperation between the formations that cause lateral movement of the lamp base toward the socket.

5. The structure of claim 4 wherein one of the interengaging formations is of wedge shape and rides upon the other, in a laterally extending direction.

6. The structure of claim 4 wherein each of the interengaging formations is of wedge shape and rides upon the other.

7. The combination with a cylindrical lamp socket having a bayonet channel therein; of a lamp base received in said socket; a hook-shaped bayonet projection on said base having a front downwardly and rearwardly inclined face; a bayonet seat in said channel having a sloping face upon which the said face of the bayonet projection rides; and a spring carried by the socket and forcing said faces into engagement.

In witness whereof, I hereunto subscribe my name.

HARRY A. DOUGLAS.