April 29, 1941. H. H. CLAYTON 2,239,878

HEADLIGHT SOCKET

Filed Oct. 20, 1939

Fig. 2.

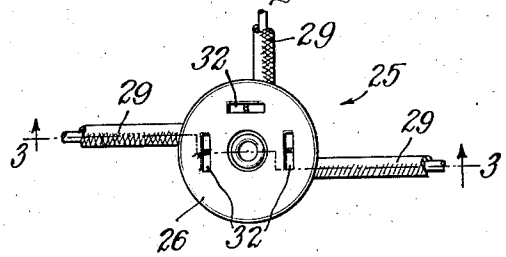


Fig. 5.

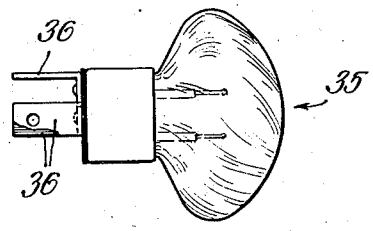


Fig. 3.

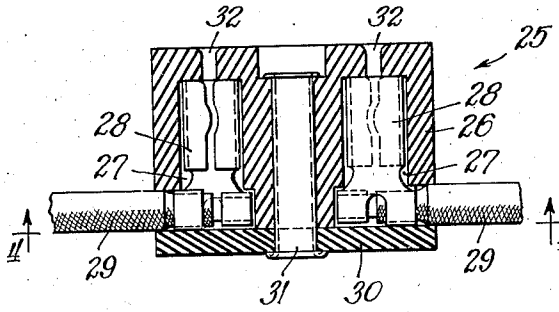


Fig. 4.

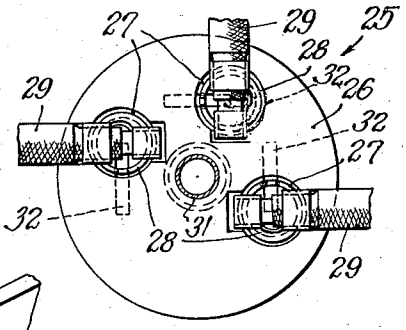


Fig. 1.

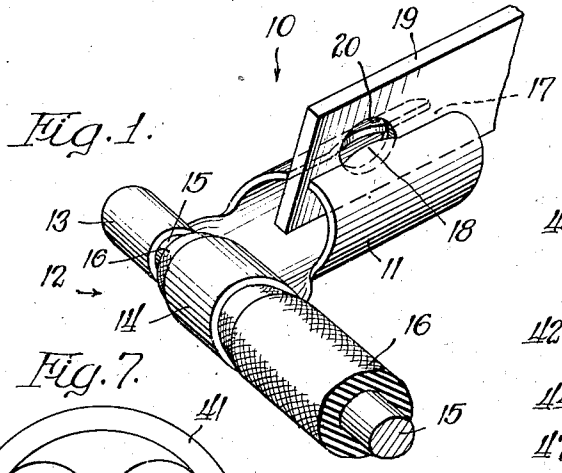


Fig. 7.

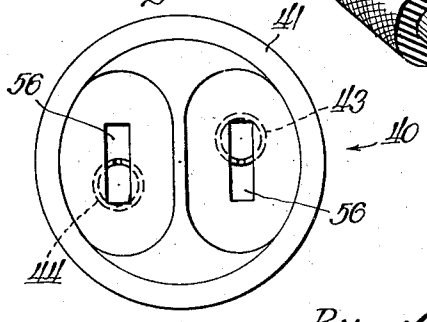
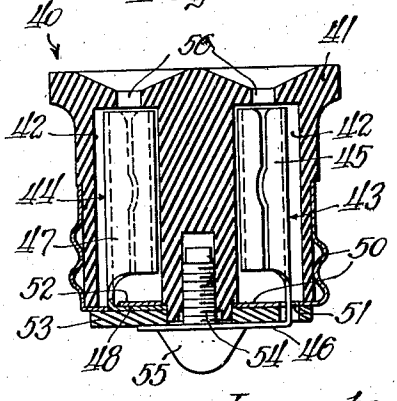


Fig. 6.



Inventor:
Harold H. Clayton

By Mouat Jackson Bottum & Dearing
Attys.

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HEADLIGHT SOCKET

Harold H. Clayton, Logansport, Ind., assignor to R-B-M Manufacturing Company, Logansport, Ind., a corporation of Indiana

Application October 20, 1939, Serial No. 300,314

6 Claims. (Cl. 173—328)

My invention relates generally to sockets for receiving and holding the prongs or conductor blades of headlight lamps and the like, and it has particular relation to such socket wherein terminals of tubular construction having a longitudinal slot running therethrough with an irregular edge are used.

Sockets for automobile headlights and the like should be of as simple and economical construction as possible while still being of the proper design for securely holding lamps or bulbs under the conditions of vibration and jars incident to the operation of automobiles. It will be understood, however, that my invention is not limited specifically to automobile lighting fixtures but may be used wherever else its particular advantages are desired.

An important object of my invention is to securely hold a conductor blade or prong against jars and shaking by concentrating the entire clamping force of a terminal or tubular section having a slot running longitudinally therethrough at localized point on the conductor blade or prong, the localized point being a hole or indentation designed to receive and seat a projection of the terminal.

Another important object of my invention is to provide a terminal having a tubular section with a slot running longitudinally therethrough with a projection along the edge of the slot by which the clamping force of the entire tubular section when spread by an inserted conductor blade or prong may be concentrated against the blade.

Another object of my invention is to provide a terminal of tubular section with a slot running longitudinally therethrough and having a projection on an edge thereof wherein the entire clamping or spring action of the tubular section grips bulb prongs or conductor blades with sufficient intensity to hold against vibration, sufficient friction being exerted when the prongs or blades are inserted in the slot to clean the surface and obtain good electrical contact between the blade and the terminal, and having a locking action which tends to resist removal of the lamp under normal conditions, by virtue of the seating action of the terminal projection in a hole or indentation in the conductor blade.

Another object of my invention is to provide a socket for headlight lamps and the like wherein terminals of the above construction are utilized.

Still another object of my invention is to provide an ordinary household socket plug wherein terminals of the above described character are utilized.

Other objects of my invention will, in part, be obvious and in part appear hereinafter.

Accordingly, my invention is disclosed in the embodiments thereof shown in the accompanying drawing and comprises the features of construction, combination of elements, and arrangement of parts which will be exemplified in the constructions hereinafter set forth and the scope of the application of which will be indicated in the appended claims.

For a more complete understanding of the nature and scope of my invention, reference may be had to the following detailed description, taken in connection with the accompanying drawing, in which:

Figure 1 is a perspective view showing the construction and application of a terminal illustrating one embodiment of my invention;

Figure 2 is a top plan view of a headlight socket incorporating the terminal as shown in Figure 1 of the drawing;

Figure 3 is a vertical section taken on line 3—3 of Figure 2;

Figure 4 is a view taken on line 4—4 of Figure 3;

Figure 5 is a side elevational view of a headlight lamp or bulb adapted to be held in the socket shown in Figures 2, 3 and 4 of the drawing;

Figure 6 is a vertical sectional view of a household socket or plug having terminals of the type shown in Figure 1 of the drawing forming another embodiment of my invention; and

Figure 7 is a top plan view of the socket of Figure 6.

Referring now to Figure 1 of the drawing, a terminal is designated generally at 10 illustrating one embodiment of my invention. The terminal 10 is of thin metal and comprises a tubular section 11 with a bifurcated section indicated generally at 12 extending therefrom. The bifurcated end 12 comprises a small fork 13 and a larger fork 14. The small fork 13 is curled around a conductor 15 while the fork 14 is curled around the insulation covering 16 of the conductor 15, as shown. The bifurcated end 12 provides a very satisfactory means for attaching or connecting a conductor to the terminal 10. A slot 17 is provided running lengthwise through the tubular section 11 and having a projection 18 on one of the edges thereof. A conductor blade or prong 19 may be inserted into the terminal 10, as shown, having sufficient width so as to spread the tubular section 11 somewhat. A hole 20 may

be provided in the prong or blade in which the projection 18 may seat. In place of the hole 20, the blade 19 may be dented instead. The hole 20, or dent, serves to more securely retain the blade or prong 19 in the terminal 10. It will be observed that when the blade 19 is inserted in the slot 17 the entire clamping force, due to the spreading of the tubular section 11, is concentrated against the blade 19 by the projection 18. The clamping pressure will be relatively high since the area is small and the blade 19 will be firmly gripped. Another feature is that when the blade 19 is inserted into the terminal 10, the projection 18 will dig or press into the blade 19 thereby securing a clean metal to metal contact to give good conductive relationship. Having the entire clamping force of the relatively long tubular section 11 concentrated against the inserted blade at a small area by the projection 18, thereby exerting relatively great pressure at this point, is a particularly desirable feature.

If desired, a plurality of projections 18 may be provided on one or both edges of the slot 17. However, for small terminals such as used for headlight sockets, the construction illustrated by the terminal 10 is entirely satisfactory.

In Figures 2, 3 and 4 of the drawing, a socket is indicated generally at 25 incorporating the terminal 10 of Figure 1 of the drawing and suitable for headlight sockets for automobiles and the like. The socket 25 comprises a housing 26 of insulation with three pockets 27 provided therein, as best shown in Figure 3 of the drawing. Terminals 28 are provided in each of the pockets 27 to which are attached conductors 29 as shown. The conductors 29 are attached to the terminals 28 at the bifurcated end as described above in connection with terminal 10 of Figure 1 of the drawing. In order to keep the terminals 28 in place and complete the socket 25, an end member 30 of insulation is provided over the end of the housing 26, as shown. A thin metal member 31 passing through the centers of the housing 26 and end member 30 with the ends overturned holds the assembly together. Apertures 32 are provided in the top of the housing 26 registering with the slots of the terminals 28 for receiving conductor blades or prongs.

Referring now to Figure 5 of the drawing, a headlight lamp or bulb is designated generally at 35 of a type for use in connection with the socket 25 of Figures 2, 3 and 4 of the drawing. The lamp 35 has three projecting conductor blades or prongs 36 attached to the end thereof which fit into corresponding terminals 28 through the aperture 32 in the housing 26. The socket 25 holds the lamp 35 securely in place against jarring and vibration.

With a view of adapting my invention to sockets or plugs such as those commonly in use in houses and the like, reference may be had now to Figures 6 and 7 of the drawing wherein one modification of such a socket is indicated generally at 40. The socket 40 comprises a housing 41 of insulation with pockets 42 provided therein. Terminals 43 and 44 are provided in the pockets 42. The terminal 43 comprises a slotted tubular section 45 and a flat contact end 46 extending therefrom as shown. The terminal 44 likewise comprises a tubular section 47 with a shorter contact end 48. A thin metal threaded cap 50 is provided over the end of the housing 41 with an aperture 51 through which the contact end 46 passes. A tab 52 is stamped in the bottom of the cap 50 for clamping over the contact end 48 as shown. An end member of insulation 53 is provided over the end of the cap 50 and the socket assembly 40 is held together by a screw 54 having a contact head 55. The contact head 55 bears against the contact end 46 of the terminal 43. Apertures 56 are provided in the top of the housing 41 for registering with the slots in the terminals 43 and 44 through which the prongs or conducting blades of an electrical attachment may be inserted. It will be noted that the terminals 43 and 44 are electrically insulated and that the cap 50 and the contact head 55 provide the terminals of the socket 40.

Since certain further changes may be made in the foregoing constructions and different embodiments of the invention may be made without departing from the spirit and scope thereof, it is intended that all matter shown in the accompanying drawing or set forth in the foregoing description shall be interpreted as illustrative, and not in a limiting sense.

I claim as my invention:

1. Electrical interconnecting means comprising, in combination, a conductor blade, a tubular section with a slot running longitudinally therethrough and adapted to have said conductor blade pushed therein, said slot having a projecting portion at which the clamping force of the entire tubular section is exerted against said conductor blade, and a bifurcated section extending integrally from said tubular section one fork of which is curled around a metal conductor while the other fork is curled around the insulation covering of said metal conductor.

2. A socket for lamps and the like having projecting conducting blades comprising, in combination, a plurality of terminals having tubular sections with slots running longitudinally therethrough for receiving conductor blades, said slots having projecting portions at which the clamping forces of the entire tubular sections are concentrated against said inserted conductor blades which spread said tubular sections, a housing of insulation having pockets for receiving said terminals, a cover plate for retaining said terminals in said pockets, and means for holding said housing and cover plate assembly together, said pockets being provided with apertures registering with said slots for receiving said conductor blades and individually guiding the same into said slots.

3. A socket for lamps and the like having projecting conductor blades for electrical connection comprising, in combination, an insulator housing having pockets therein, terminals disposed in said pockets each having a tubular section with a slot running longitudinally therethrough and adapted to have a conductor blade pushed therein, said slot having a projecting portion at which the clamping force of the entire tubular section is exerted against said conductor blade, and a bifurcated section extending integrally from said tubular section one fork of which is curled around a metal conductor while the other fork is curled around the insulation covering of said metal conductor, a cover plate for retaining said terminals in said pockets, and means for holding said housing and cover plate assembly together, said pockets being provided with apertures registering with said slots for receiving said conductor blades and individually guiding the same into said slots.

4. A socket for lamps and the like having projecting conducting blades comprising, in combination, a pair of terminals having longitudinally slotted tubular sections for receiving conducting blades therein, said slots having projecting portions at which the clamping forces of the entire

tubular sections are concentrated against said inserted blades which serve to spread said tubular sections, a housing of insulation having pockets for said terminals, blade apertures in the top of said housing registering with said slots for receiving and individually guiding said blades into said slots, a thin metal threaded cap fitting over the end of said housing and electrically connected to one of said terminals, and a screw with a projecting head electrically connected to the other terminal and holding a plate of insulation over the end of said metal cap, said terminals being electrically insulated from each other by said housing and said plate of insulation.

5. Socket means for receiving a pair of substantially parallel symmetrically spaced apart platelike plug terminals comprising, in combination, a pair of tubular terminals longitudinally slotted to provide spaced apart contact faces for individually receiving therebetween said plug terminals, and means mounting said tubular terminals in staggered relation with the slots therein on adjacent sides such that said plug terminals can be substantially symmetrically located therein.

6. Socket means for receiving a pair of substantially parallel symmetrically spaced apart platelike plug terminals comprising, in combination, a pair of tubular terminals longitudinally slotted to provide spaced apart contact faces for individually receiving therebetween said plug terminals, means mounting said tubular terminals in staggered relation with the slots therein on adjacent sides such that said plug terminals can be substantially symmetrically located therein, and guide means including substantially parallel symmetrically spaced apart apertures aligned endwise with said slots for individually guiding said plug terminals thereinto.

HAROLD H. CLAYTON.