G. C. KNAUFF.

LAMP SOCKET.

APPLICATION FILED FEB. 4, 1915.

1,184,966. Patented May 30, 1916.

Fig. 1.

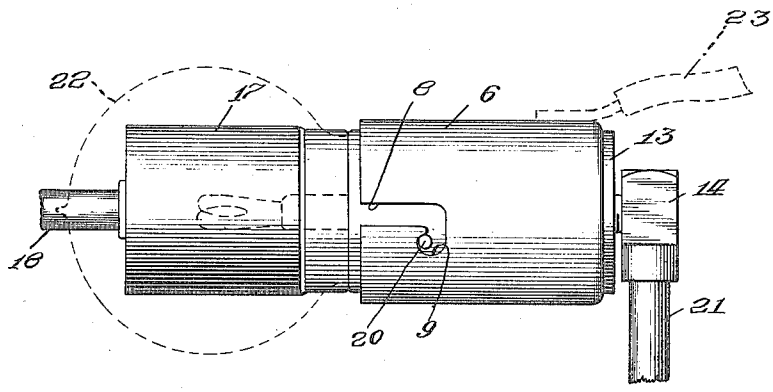


Fig. 2.

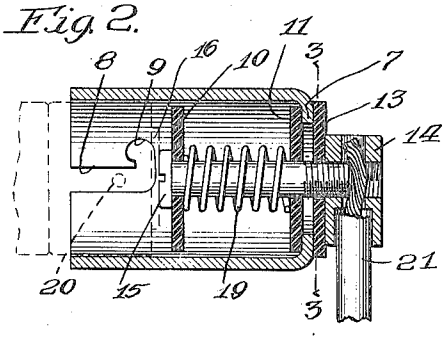


Fig. 3.

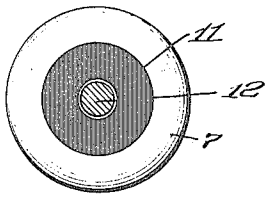


Fig. 4.

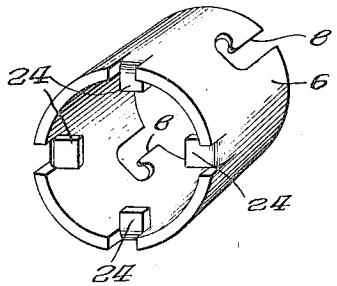
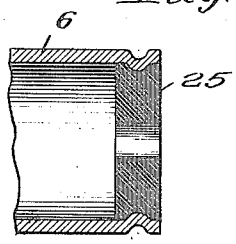


Fig. 5.



Witnesses:
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LAMP-SOCKET.

1,184,966. Specification of Letters Patent. Patented May 30, 1916.

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To all whom it may concern:

Be it known that I, GEORGE C. KNAUFF, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Lamp-Sockets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to electric lamp sockets or connectors, being particularly adapted for use in connection with automobile lighting circuits. Sockets and connectors of this class have each heretofore commonly been constructed with an insulating body rigidly mounted within a casing and supporting spring-pressed elements contacting respectively with a circuit terminal and with a detachable terminal carrier, the latter being either a lamp or a plug carrying a wire terminal. Where such a socket is mounted in a lamp which is enameled or plated, it is preferable to apply this coating to the socket casing after the latter is secured to the body of the lamp. In doing so, the other elements or "works" of the socket must be removed before this coating is applied to the casing; whereupon an assembling of the socket is rendered difficult by the fact that the enamel or other coating will clog threads or screw-holes, and also by the difficulty of exactly alining any small holes in socket casing and in other parts of the socket.

My invention aims to avoid these difficulties by providing a construction in which the interior parts may be secured to the socket casing without requiring the latter to have screw holes and in which the "works" may quickly be attached to the casing and connected in operative relation to each other by means of a single screw.

It also aims to provide a socket or connector construction in which the various parts will readily adjust themselves to compensate for irregularities in the fit; and to provide a more cheaply manufactured and assembled socket than has heretofore been in use.

Further objects will appear from the accompanying drawings which show my invention as adapted for use with a circuit having one terminal grounded to the casing of the socket.

In the drawings, Figure 1 is an elevation of a connector embodying my invention. Fig. 2 is a longitudinal section through the same. Fig. 3 is a transverse vertical section through the connector along the line 3—3 of Fig. 2. Fig. 4 is a perspective view of an alternative type of socket casing. Fig. 5 is a fragmentary section through the rear end of another type of socket casing adapted for use with my invention.

In the embodiments of Figs. 1, 2 and 3, my socket has a casing 6 equipped at its rear end with an inwardly directed projection in the form of a flange 7, and at its forward end with a pair of longitudinal slots 8 terminating in bayonet-catch formations 9. Housed by the casing 5 and loosely slidable therein are a pair of washers 10 and 11, both of insulating material and each having a bore slidably fitting the shank 12 of a brass or copper bolt. This bolt is disposed axially of the casing and extends through the perforated rear end of the casing and through a third insulating washer 13, which latter prevents the adjacent end of the casing from contacting with a wire terminal 14 into which the shank 12 of the bolt is threaded. At its forward end, the said bolt (which forms the single contact member of a socket proper) has a head 15 adapted to contact with the metal tip 16 of a plug 17 carrying a wire 18. Interposed between the washers 10 and 11 is a compression spring 19 of such length with respect to the bolt that it normally not only separates these washers, but also causes the wire terminal 14 to press the outer washer 13 against the end 7 of the casing, while the middle washer 11 is pressed against the opposite side of the said end.

While the plug 17 is detached, the expansion of the spring 19 forces the head 15 of the bolt to the position shown in Fig. 2, in which this head is in the path traversed by the terminal tip 16 of the plug or other terminal carrier. Upon inserting the latter into the casing sufficiently to bring lateral projections 20 on the latter into engagement with the hook formations 9 of the slots 8, thereby coupling the plug to the socket proper, the bolt is forced rearwardly (or longitudinally of the casing) against the pressure of the spring 19, carrying the terminal 14 and the attached wire 21 with it as shown in Fig. 1. However, the spring 19 will still maintain the various parts firm with respect to the casing, with the exception of the outer washer 13 which may then be

loose. Moreover, this spring will cause the associated parts to adjust themselves so as to compensate for irregularities, so that the washers 10 and 11 need not closely fit the bore of the casing 6, thereby allowing the latter to be covered with a coating of somewhat uneven thickness. By unscrewing the single bolt, all of the other parts can quickly be detached from the casing, thereby permitting the latter to be plated or enameled if desired, after which the "works" of the socket can easily be reassembled by means of this single bolt, the latter being then preferably staked over or soldered within the wire terminal 14.

It will be obvious that the socket as described will coöperate equally well with any other form of terminal carrier, such as a lamp 22, and that the casing of the socket may be grounded to the other wire 23 of the circuit if desired. Moreover, various details of the construction herein disclosed may be altered considerably without departing from the spirit of my invention. For example, instead of equipping the casing 6 with an annular projection, this casing may have a series of inwardly directed prongs 24, as shown in Fig. 4, opposite sides of which prongs would then engage the washers 11 and 13 respectively. Or, these washers might be combined into a single washer 25 (as in Fig. 5) in which case the projection on the casing might be in the form of a contraction spun into a corresponding groove 1 in the periphery of the washer 25.

I claim as my invention:

1. In a socket, the combination with a casing having a perforated end, of a pair of insulating members disposed on opposite sides of said end, an insulating disk slidable within the casing, a circuit terminal extending through said disk and both of said members and slidable with respect to at least one of said members; and spring means interposed between the disk and one of said members for normally pressing both of said members against the said end of the casing.

2. In a socket, the combination with a substantially cylindrical casing of a contact screw disposed axially thereof and movable longitudinally thereof; at least one insulating guide slidably mounted on the shank of said screw and slidably fitting the casing; a wire terminal threaded upon said screw; means for yieldingly pressing the screw toward one end of the casing, and insulating means interposed between said terminal and the other end of the casing.

In testimony whereof I have signed my name in the presence of two subscribing witnesses.

GEORGE C. KNAUFF.

Witnesses:
ALBERT SCHEIBLE,
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