July 25, 1939. C. A. WOODWARD 2,167,270

LAMP SOCKET DEVICE

Filed Sept. 22, 1937

Fig. 1

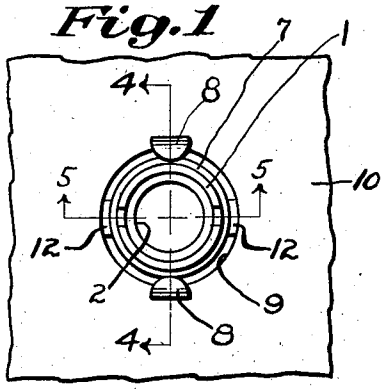


Fig. 2

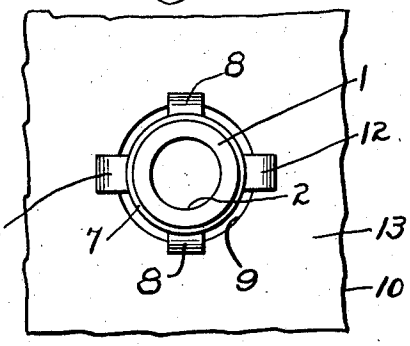


Fig. 3

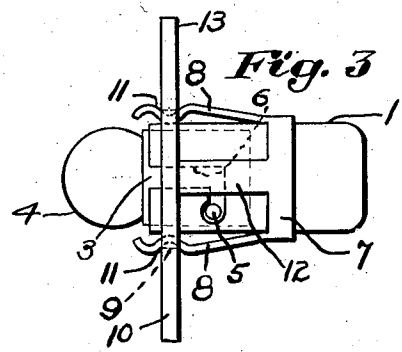


Fig. 4

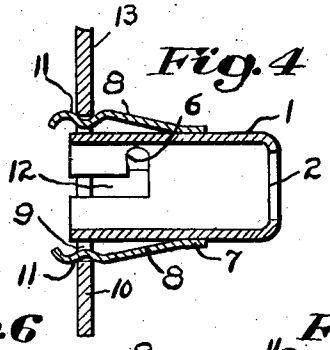


Fig. 5

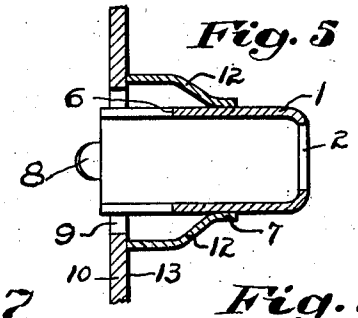


Fig. 6

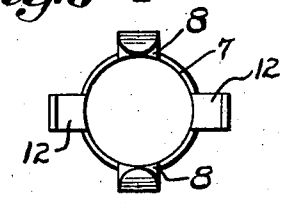


Fig. 7

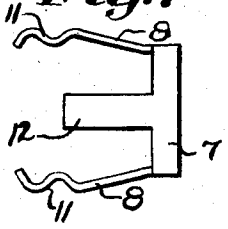
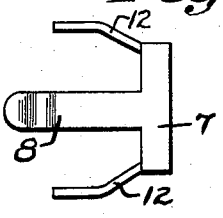


Fig. 8



Inventor:
Clement A. Woodward.
by Walter S. Jones Att'y.

Patented July 25, 1939 2,167,270

UNITED STATES PATENT OFFICE

2,167,270

LAMP SOCKET DEVICE

Clement A. Woodward, Roslindale, Mass., assignor to United-Carr Fastener Corporation, Cambridge, Mass., a corporation of Massachusetts

Application September 22, 1937, Serial No. 165,113

5 Claims. (Cl. 173—339)

My invention relates to an improved lamp socket device having snap fastener means for attaching it to a supporting structure.

In the drawing, which illustrates a preferred form of my invention:

Figure 1 is a front elevation of an installation showing my improved socket device installed in a panel;

Fig. 2 is a rear elevation of the installation shown in Fig. 1;

Fig. 3 is a side elevation of the installation shown in Figs. 1 and 2 with the addition of a light bulb;

Fig. 4 is a section taken along the line 4—4 of Fig. 1;

Fig. 5 is a section taken along the line 5—5 of Fig. 1;

Fig. 6 is a front view of the attaching member of my socket device;

Fig. 7 is a side view of the attaching member shown in Fig. 6; and

Fig. 8 is a view similar to that of Fig. 7 but with the attaching member rotated 45°.

An object of my invention is to provide an improved lamp socket device of the type adapted to be easily and quickly detachably secured to a panel or other supporting structure solely by a simple snap fastener means easily applied as a part of the device. A further object of my invention is to provide a lamp socket having yieldable attaching fingers so disposed in relation to the lamp socket that they may be extended through a minimum sized aperture in the supporting structure for the purpose of securing the socket to the structure.

Referring to Figs. 1–5 of the drawing, I have shown for purposes of description a tubular metal shell 1 of the type which is adapted particularly for use with a single contact lamp of the type now commonly used on automobile installations. It should be remembered, however, that my invention is not limited to this particular type of socket shell and that changes may be made to accommodate different types of lamps without departing from the spirit and intent of my invention.

The tubular shell 1 constitutes a socket for a lamp base and a support for an electrical contact member (not shown) which is adapted to transmit current to the lamp. The shell 1 is preferably formed of sheet metal through a drawing or folding operation and is provided with an opening 2 at one end for permitting passage of a conductor (not shown) into the shell. The shell 1 is open at its end opposite to that having the aperture 2 for the purpose of receiving a base 3 of a lamp 4 (Fig. 2). The lamp 4 is secured to the shell 1, in my preferred form, through means of pins 5 (Fig. 3) extending from the lamp base 3 and cooperating with bayonet slots 6 formed in the shell in the manner well known in the art.

As a means for attaching the socket device to a supporting structure by a snap fastener action, I have provided an attaching member which has a collar portion adapted, preferably, to be press-fitted to the outer surface of the tubular shell at a desired point between its ends. The attaching member, as clearly illustrated in Figs. 6–8, comprises a collar 7 which preferably is in the form of a continuous ring disposed at one end of the attaching member. Oppositely-disposed yieldable fingers 8 integral with the collar 7 are adapted to extend from the collar into an aperture 9 of a supporting structure 10. The fingers 8 have shoulder means 11 adjacent their free ends for spring engagement with material of the supporting structure 10 adjacent the aperture 9 for securing the socket device to the structure. It will be noticed that the fingers 8 preferably extend from the collar 7 at such an angle relative to the outer surface of the shell 1 when the attaching member is affixed thereto that they are disposed in the closest possible relation to the surface of the shell, but, at the same time, allowing a minimum distance between the fingers and the outer surface of the shell so as to permit yielding of the fingers for carrying out the snap fastener action. As a means for limiting movement of the shell 1 axially of the aperture 9, I have provided, in my preferred form, a pair of substantially rigid stop fingers 12, each of which extends from the collar 7 away from the axial line of the attaching member and then in substantially parallel relation to the axial line, as most clearly shown in Figs. 5 and 8. The outermost free ends of the fingers 12 are adapted to engage the rear surface 13 of the support 10 thereby limiting movement of the shell 1 in one direction through the aperture. Although in my preferred form of attaching member I have shown one pair only of the respective fingers 8 and 12, it is understood that I do not wish to be limited to this particular construction as any suitable number of fingers of either type may be employed for carrying out the desired purpose.

In assembling the parts of my installation together, the attaching member is secured to the shell 1 through press-fitting the collar 7 to the outer surface of the shell at a predetermined distance between the ends thereof. A lamp may

now be secured to the lamp-receiving end of the socket. The next and final step is to move the socket device toward the supporting structure so as to insert the lamp and fingers in the aperture 9, which is larger than the diameter of the lamp but smaller in diameter than the distance between outside surfaces of the fingers 8, at points between the shoulders 11 and the outermost tips of the fingers. Then pressure is exerted on the shell 1 which acts as a handle for the device and the socket is moved toward the aperture 9 until the outermost free ends of the stop fingers 12 abut the surface of the supporting structure 10 (Fig. 5). When the socket device is in this position the shoulders 11 of the spring fingers 8 engage material of the supporting structure adjacent the aperture 9 (Figs. 3 and 4) whereby the device is rigidly held in position upon the support 10. If it is desired, the socket may be secured to the support before inserting the lamp in the socket. Thus my improved device may be used whether or not the structure to which it is attached is accessible from both sides.

While I have illustrated and described a preferred form of my invention, I do not wish to be limited thereby because the scope of my invention is best defined by the following claims.

I claim:

1. An electric socket device including a shell part having integral lamp-receiving and holding means adjacent to one end, a second part having a collar-like portion engaging the outer surface of said shell part and permanently attaching the second part to the shell part, yieldable support-engaging fingers extending from said collar portion toward that end of the shell part having the lamp-holding means, said fingers being provided with support contacting means for snap fastening engagement with a support when passed into an aperture in the support, and support-engaging shoulders carried by the second part and located between the free ends of said yieldable fingers and said collar portion to contact said support at that side from which the fingers are entered into the aperture in the support.

2. An electric socket device including a shell part having integral lamp-receiving and holding means adjacent to one end, a second part having a collar-like portion engaging the outer surface of said shell part and permanently attaching the second part to the shell part, yieldable support-engaging fingers extending from said collar portion toward that end of the shell part having the lamp-holding means, said fingers having their free ends located farthest from the collar portion and having support-contacting means between the free ends and the collar portion arranged to snap into engagement with a support through an aperture therein, and support-engaging shoulder means on said second part located between the contacting means and the collar portion for limiting the movement of the fingers through the aperture.

3. An electrical socket device for insertion in a supporting structure comprising a substantially tubular shell having means at one end for receiving and holding a lamp base and the like, a metal collar fitted around the outer surface of said shell, integral yieldable fingers extending from said collar and having means for engagement with a part of the supporting structure whereby said socket is detachably secured to said structure, and substantially rigid fingers extending from said collar in the same direction as said yieldable fingers, said rigid fingers having free end portions adapted to engage a surface of said supporting structure for limiting axial movement of said shell relative to an aperture in said support.

4. An electric socket device adapted to be suspended from an independently positioned support by engagement with an aperture in the support, comprising a substantially cylindrical shell having an open end into which the lamp base may be inserted to be directly supported by the shell and having provision for retaining the lamp therein, a second part formed as a single piece and comprising a tubular collar encircling the exterior of the shell and attached thereto, spring fingers spaced radially of the shell extending from the collar in the direction of the open end of the shell and having toward their distal end portions successively outwardly slopingly diverging and inwardly slopingly converging whereby when the socket is grasped at the rear of the shell the ends may be presented to the aperture in the support and pressed thereagainst to cause the junctions of said portions to pass the margin of the aperture by inward flexure of the fingers and the diverging portions to ride forwardly across such margin, said second part also including approximately radially disposed shoulder portions in a plane corresponding substantially to the inner ends of said outwardly diverging portions for contacting the support outwardly of the aperture therein on the side from which the fingers are entered into the aperture to be held pressed thereagainst by the resilient expansion of the fingers.

5. An electric socket device adapted to be suspended from an independently positioned support by engagement with an aperture in the support, comprising a substantially cylindrical shell having an open end into which the lamp base may be inserted to be directly supported by the shell and having provision for retaining the lamp therein, a second part formed as a single piece and comprising a tubular collar encircling the exterior of the shell and attached thereto, spring fingers spaced radially of the shell extending from the collar in the direction of the open end of the shell and having their distal ends convexed providing portions thereof spaced different distances radially from the central axis of said shell whereby when the socket is grasped at the rear of the shell the ends may be inserted into the aperture of the support and pressed thereagainst by the spring action of said fingers, said second part also including substantially radially disposed shoulder portions in a plane to the rear of the maximum diameter portion of the convexed finger ends for contacting the support outwardly of the aperture therein on the side from which the fingers are entered into the aperture for limiting movement of the fingers axially through the aperture so that said socket device may be suspended from the support by engagement of opposed faces of the support between said shoulder portions and outwardly inclined portions of said convexed finger ends.

CLEMENT A. WOODWARD.