

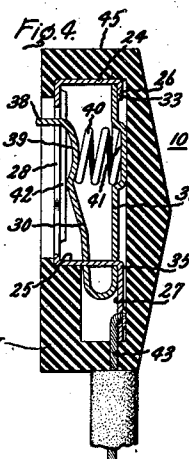
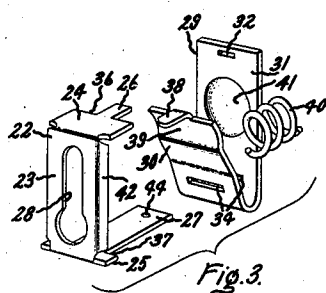
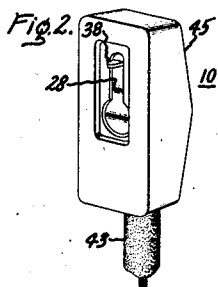
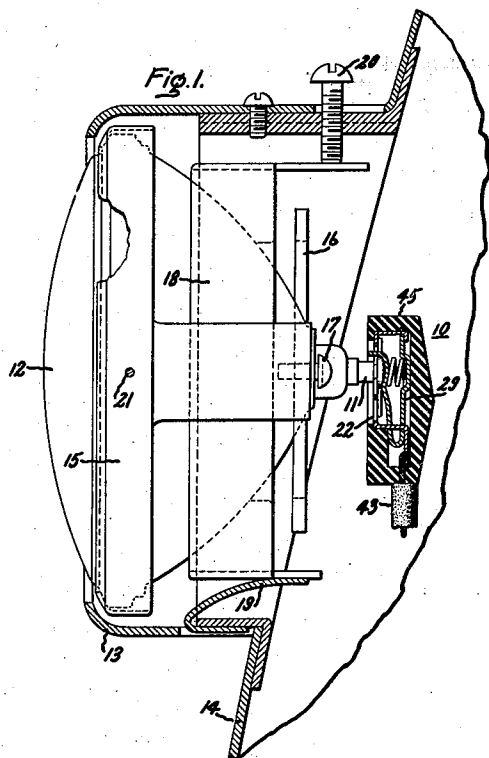
March 18, 1941.

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2,235,545

ELECTRICAL CONNECTOR

Filed Oct. 31, 1939



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Patented Mar. 18, 1941

2,235,545

UNITED STATES PATENT OFFICE

2,235,545

ELECTRICAL CONNECTOR

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Application October 31, 1939, Serial No. 302,176

3 Claims. (Cl. 173-269)

My invention relates to an electrical connector, and more particularly to a connector adapted to be snapped on to a contact prong of an electrical device such as a reflector lamp.

An object of my invention is the provision of an improved connector of the type described which is adapted firmly to grip a contact prong and which is composed of relatively few parts so that it may be manufactured at low cost.

In the accompanying drawing Fig. 1 is a view showing the connector mounted on a reflector lamp such as an automobile headlight; Fig. 2 is a perspective view of the connector; Fig. 3 is an exploded view of the connector elements, and Fig. 4 is a cross-sectional view through the connector.

Referring to the drawing, I have shown the connector 10 as attached to one of the contact prongs 11 of a reflector lamp 12, for example, an automobile headlight. The connector is so designed that one may be attached to each electrical conductor leading to the lamp; in this manner a connector is mounted on each of the lamp contact prongs. This means that the connectors must be small enough to be assembled in side by side relationship on the lamp prongs and, at the same time, they must be constructed in a manner to insure good electrical contact with the lamp at all times.

In Fig. 1 of the drawing, the automobile reflector lamp 12 is shown mounted in a well or casing 13 extending outwardly from an automobile fender 14. The lamp is seated within a carrier member 15 and is held in position by a spacer ring 16 secured to the carrier by tightening bolts 17. Adjustment of the position of the lamp is provided for by a clamping block 18 which surrounds the body of the lamp and which is tiltable between a spring 19 and an adjusting bolt 20. During adjustment the carrier member pivots around the pins 21. The lamp mounting forms no part of the present invention, it being the subject matter of the copending application of Daniel K. Wright, Serial No. 143,504, filed May 19, 1937, which became a patent numbered 2,148,314 dated February 21, 1939, assigned to the same assignee as the instant application.

The connector itself, as shown in Figs. 2, 3 and 4, is formed of a plurality of sheet metal elements so assembled together as to form a structure for tightly gripping the lamp prong. A U-shaped front plate 22 is provided with a face portion 23 formed at each end with arms 24 and 25 which extend rearwardly from the face of the

plate. The upper arm 24 is provided with a narrower tang 26, while the lower arm 25 is likewise provided with a rearwardly extending tongue 27. In order to receive the contact prong of a reflector lamp, or similar electrical device, the face of the plate is provided with a keyhole slot 28. Inasmuch as the lamp contact prong is provided with an enlarged head, as shown in Fig. 1, it may be inserted through the large opening in the keyhole slot and then moved along the slot to a point where it is retained behind the narrower portion thereof. Secured to the plate 22 is a substantially V-shaped backing member 29 having angularly disposed legs 30 and 31. The tang end 26 of the upper arm 24 extends through an opening 32 in the leg 31 of the backing member and is bent over, as shown at 33 in Fig. 4, to secure the upper portion of the backing member to the front plate. Similarly, the tongue 27 of the lower arm 25 extends through openings 34 in both of the legs 30 and 31 of the backing member and is then bent downwardly, as shown at 35, to secure the lower portion of the backing member to the front plate. In this manner the front plate and backing member are held securely together in rigid position. The upper arm 24 of the front plate is provided with an abutment edge 36 formed by the tang 26 and this edge engages the inner wall of the backing member 29 so that when in assembled relation the leg 31 of the backing member is spaced from the face portion 23 of the front plate. Similarly, an abutment 37 on the lower arm 25 engages the leg 30 of the backing member to space the front plate from this member. This means that a space is provided between the front plate 23 and the leg 31 of the backing member in which the angularly disposed leg 30 of the backing member is positioned to form, in effect, a bearing member for engaging the enlarged head of the contact prong.

Since the backing strip 29 is formed of sheet metal, such as spring bronze, the bearing member 30 provides a flexible or resilient abutment for engaging the face of a lamp prong when the latter is inserted in the keyhole slot 28. The bearing member biases the prong firmly into engagement with the keyhole slot to lock it in position. The upper end of the leg 30 is provided with a tongue 38 which projects into the keyhole slot and guides the leg 30 to prevent it from becoming twisted or bent during insertion of the contact prong; in addition, the tongue acts as a stop for the lamp prong. At the end adjacent tongue 38 leg 30 is formed with a curved surface 39 which closely grips the contact prong when the

latter is mounted in seated position within the keyhole slot. To increase the pressure of the bearing member against the face of the prong a spring 40 is disposed between the legs 30 and 31 to bias the leg 30 into engagement with the contact prong. At one end the spring engages the curved portion 39 of the flexible leg 30, while at the other end it is seated within a recess 41 in the leg 31, this assembly being shown by Fig. 4. To guide the end of the contact prong along the length of the slot and to stiffen the face plate 23, the sides of the plate are bent over as shown at 42.

The tongue 27 is made long enough for attachment to a conductor 43; the latter extends through an opening 44 in the tab member and is soldered or otherwise secured thereto. The assembled connector may be placed within a resilient rubber boot or housing 45 which completely encloses the connector with the exception of the face plate 23. This means that the connector is protected from dust and dirt.

To mount the connector upon the lamp prong it is simply necessary to insert the head of the prong into the large end of the keyhole slot and pull down on the connector so that the head of the prong snaps into position within the curved portion 39 behind the narrower portion of the slot. During movement of the contact prong to position within the slot the bearing member 30 is flexed about its V end and the spring 40 is compressed. Flexure of the bearing member is provided for by the slot 34 which permits movement of the member relative to the arm 25. In seated position the connector grips the lamp prong tightly and cannot be shaken loose by jars and vibrations incident to driving of the automobile on which the reflector lamp is mounted. The rubber boot 45 protects the connector from dust and dirt and, at the same time, insulates the exposed portions of the connector and makes it easy to handle.

While the connector has been illustrated and described as attached to the contact prong of an automobile reflector lamp, it should be manifest that the connector may be used with other electrical devices. Due to the fact that the connector is composed of only four parts, two of

which are stamped from sheet metal, it will be apparent that it may be manufactured and assembled at low cost.

What I claim as new and desire to secure by Letters Patent of the United States, is—

1. A connector for use with a contact prong comprising a U-shaped metallic plate having a face portion and opposed arms, said plate having a keyhole slot in the face portion, a substantially V-shaped backing member, one of the legs of the V forming a base engaging the opposed arms to secure said plate and backing member together, the other leg of the V being disposed between the face portion of said plate and said base for engaging the face of a contact prong when mounted in said keyhole slot and a spring between the legs of the V-shaped backing member biasing said other leg into engagement with the face of the contact prong.

2. A connector for use with a contact prong comprising a U-shaped metallic plate having a face portion and opposed arms, said plate having a keyhole slot in the face portion thereof, and a substantially V-shaped backing member, one of the legs of the V forming a base engaging the opposed arms to secure said plate and backing member together, the other leg of the V being disposed between the face portion of said plate and said base for engaging the face of a contact prong when mounted in said keyhole slot.

3. A connector for use with a contact prong comprising a U-shaped metallic plate having a face portion and opposed arms, said plate having a keyhole slot in the face portion thereof, a substantially V-shaped backing member, one of the legs of the V forming a base engaging the opposed arms to secure said plate and backing member together, the other leg of the V being disposed between the face portion of said plate and said base for engaging the face of a contact prong when mounted in said keyhole slot, a tongue on said other leg extending into the keyhole slot and forming a stop for the contact prong, and a spring between the legs of the V-shaped backing member biasing said other leg into engagement with the face of the contact prong.

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