

Feb. 26, 1957

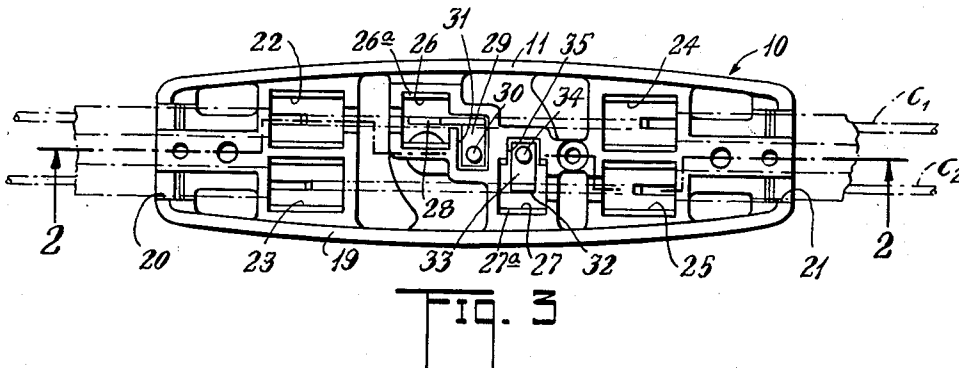
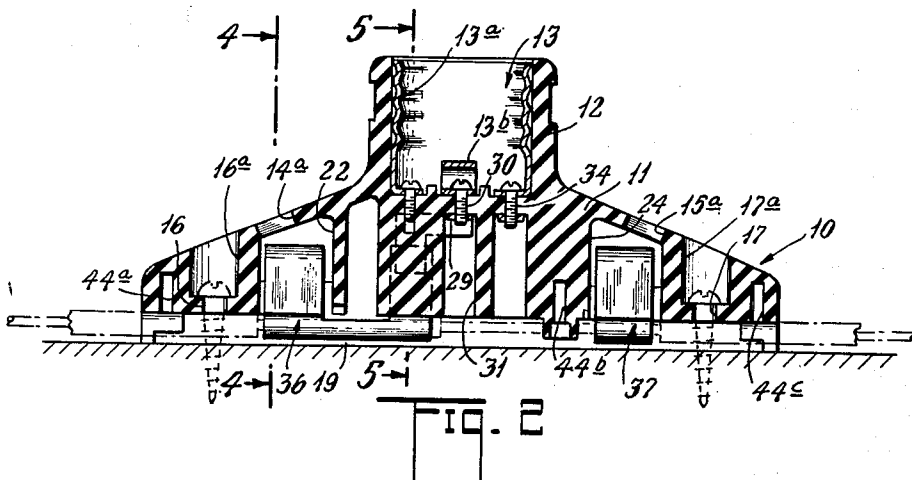
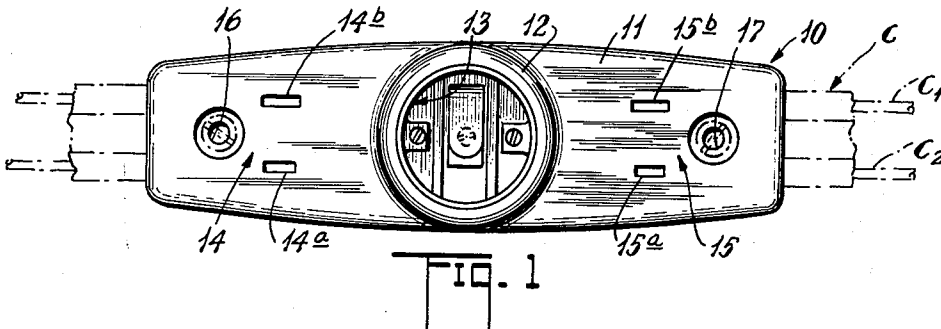
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LAMPHOLDER WITH INTEGRAL DUPLEX RECEPTACLE

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2 Sheets-Sheet 1



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2 Sheets-Sheet 2

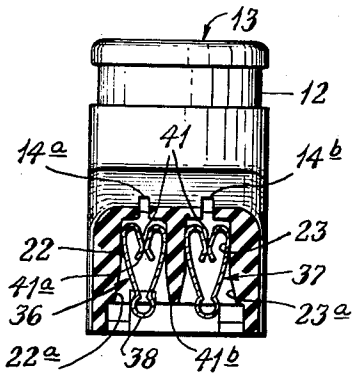


FIG. 4

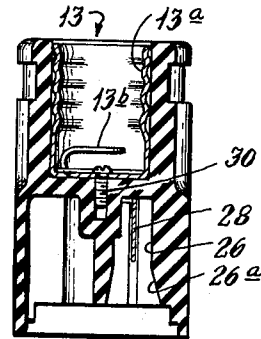


FIG. 5

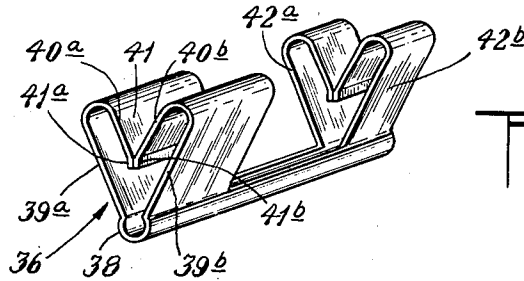


FIG. 6

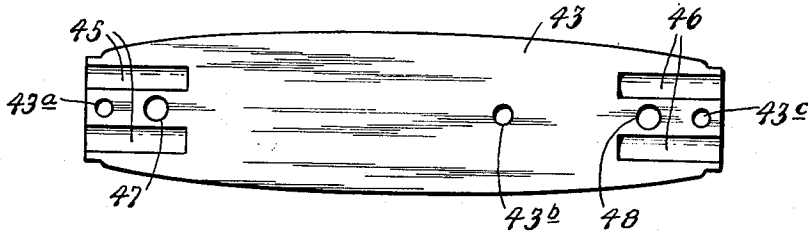


FIG. 7

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LAMPHOLDER WITH INTEGRAL DUPLEX RECEPTACLE

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1 Claim. (Cl. 339—159)

This invention relates to electrical fixtures and more particularly to a combination electrical fixture capable of serving in a strip wiring harness as both a lamp holder and a receptacle for cord plugs or the like.

There has been developed an efficient and economical technique for installing electrical service in certain types of buildings. The technique is based on the use of strip wiring harnesses in which the electrical conduit takes the form of a flat semi-flexible casing in which two or more electrical conductors are embedded and which is particularly adapted to be strung fully exposed along a supporting surface, either a wall or a ceiling, to have attached thereto at any desired point any one of a wide range of electrical fixtures.

In accordance with the present invention, there is provided a fixture for attachment to a strip wiring conduit having both electrical socket provisions for receiving a lamp bulb and receptacle means for receiving conventional plug-in type cord caps. The fixture is designed to be affixed to the strip wire conduit by baring a length of the electrical conductors, which are permitted to pass unsevered through the housing. Spring clip members are provided for connecting, without the use of tools, the respective terminals of the lamp socket to appropriate electrical conductors and for establishing receiving terminals for the prongs of the cord cap plugs. The clip members which energize the lamp socket are in the form of double clips to energize also the terminals of the receptacles. The housing is preferably backed by a closure to completely cover and seal the bared electrical conductors.

A representative embodiment of the invention is described below having reference to the accompanying drawings in which:

Figure 1 is a top view of an electrical fixture having both lamp socket and cord plug receptacle means;

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

Figure 3 is a bottom view with the back closure member removed of the fixture of Figures 1 and 2;

Figure 4 is a view in transverse section taken on the line 4—4 of Figure 2;

Figure 5 is a view in transverse section taken on the line 5—5 of Figure 2;

Figure 6 is a view in perspective of a representative form of clip member used in the assembly of Figures 1—3; and

Figure 7 is a view of the inside face of the back cover plate for the assembly of Figures 1—3.

Referring to the drawings, the invention is illustrated as embodied in an electrical fixture assembled in a casing 11 preferably formed of an electrically insulating material. A flat strip conduit C having spaced parallel conductors c_1 and c_2 embedded in a unitary electrically insulating covering including a central web w , passes through the base of the casing. The casing 11 includes at its center an upstanding cylindrical boss 12 for receiving the electrical components of a lamp bulb receiv-

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ing socket indicated generally by the numeral 13. Conventionally, the socket includes one terminal in the form of an internally threaded electrically conducting sleeve 13a and, electrically insulated therefrom, a base terminal 13b.

Flanking the centrally located socket assembly 13 are a pair of cord cap plug receptacles 14 and 15, respectively, each including a pair of slots 14a, 14b and 15a, 15b, formed in the surface of the casing 11 and preferably of different sizes for purposes of polarization in accordance with well known principles. Also formed in the outer or exposed surface of the casing 11 are a pair of mounting screw receiving apertures 16 and 17 preferably countersunk at 16a and 17a to recess the heads of the mounting screws, shown in phantom lines in Figures 1 and 2.

The internal construction of the casing 11 as revealed by Figures 2—5, inclusive, includes a longitudinal channel 18 for the conduit C bounded on its sides by a depending skirt portion 19 formed integrally with the exposed side walls of the housing. Access to the channel 18 is had at either end of the casing 11 through elongated openings 20 and 21 preferably having a contour closely conforming to the cross sectional configuration of the strip conduit, which passes through the channel. The openings 20 and 21 in the casing are preferably initially closed by a thin knockout plug or barrier (not shown) so that one barrier can be left in place to prevent exposure of the insides of the fixture when it is used as a terminal fixture at the end of a strip conduit rather than as an intermediate fixture as indicated in the drawings.

Internally the casing 11 is formed between the channel 18 and the respective cord cap receptacle openings 14a and 14b with relatively deep generally rectangular recesses or pockets 22 and 23, as best seen in Figure 4, outwardly flared at 22a and 23a adjacent the channel 18. A similar pair of recesses or pockets 24 and 25 are disposed respectively between the cord cap receptacle openings 15a and 15b and the channel 18. Between the lamp assembly 13 and the channel 18 the casing 11 is formed internally with insulating walls defining a pair of recesses or pockets 26 and 27, spaced apart longitudinally as well as transversely of the electrical conduit, the recesses being outwardly flared at 26a and 27a adjacent the channel 18. The recess 26 has disposed at its inner end an electrically conducting terminal blade 28 formed integrally with a conducting tongue 29 joined by means of a screw or rivet 30 to the lamp socket terminal 13b, the conducting tongue 29 passing through a suitable cavity 31 formed in the housing adjacent the recess 26. A flat terminal blade 32 of electrically conducting material is disposed in the upper end of the recess 27 and is formed with an electrically conducting tongue 33 by means of which it is connected through an electrically conducting mounting screw or rivet 34 to the socket sleeve 13a. A suitable cavity 35 is formed in the housing to receive the tongue 33 and mounting screw 34.

As best seen in Figure 3 the recesses 22, 23 and 24 are all disposed in a line lengthwise of the casing 11 in vertical alignment with the electrical conductor c_1 of the electrical conduit. Similarly, the recesses 23, 27 and 25 are in alignment with the other electrical conductor c_2 of the conduit. With the fixture in place on the conduit and with the insulation of the conduit stripped to bare the electrical conductors over the several recesses formed in the housing, the electrical connections to the lamp and plug receptacle fixtures are effected by means of electrically conducting clip members, of which there are two types, viz., a double clip member 36 as best seen in Figures 2, 4 and 6 and a single clip member 37 seen only in Figures 2 and 4. In Figures 3 and 5 the clip members

have been omitted to reveal other parts of the assembly.

Referring to Figure 6 the double clip member 36 comprises a single piece of electrically conducting spring material, such for example as, phosphor bronze, formed with a rounded bight 38 adapted to receive an electrical conductor. Diverging outwardly from one end of the bight 38 are a pair of arms 39a and 39b intumed at 40a and 40b respectively to define a reentrant channel 41, with the intumed portions 40a and 40b converging toward a tangent point and flared slightly outwardly at their inner ends 41a and 41b, when in position in the casing as best seen in Figure 4. A second pair of arms 42a and 42b, slightly smaller but otherwise identical to the arms 39a and 39b, extend outwardly from the bight 38 at the opposite end of the clip member 36 from the arms 39a and 39b. The single clip member 37 has only one pair of arms, which are likewise substantially identical to those described above.

Two double clip members 36 and two single clip members 37 are used in the fixture, single clip members 37 being pressed with the recesses 23 and 24, respectively, and double clip members 36 being pressed into the recesses 22, 26 and 25, 27, respectively. The flared outer ends of each of the recesses guide the paired arms of the clip members into position, camming them toward each other to tighten the reentrant channels 41. When fully received in the respective recesses, the bights 38 of the clip members are clinched tightly on the corresponding electrical conductors to form a tight mechanical and electrical coupling therewith. So disposed, certain of the reentrant channels 41 are disposed adjacent a corresponding opening or slot 14a, 14b, 15a or 15b of the cord cap receptacles so that the blade of the cord cap entering the apertures passes into the channels to establish rubbing contact with the blade for efficient electrical coupling. It will be observed that the arms 40a and 40b are able to flex more or less independently of the bight 38 so that the presence of a cord cap blade does not have any pronounced effect on the action of the bight on the electrical conductor. Similarly, the remaining reentrant channels 41, as constituted by the arms 42a—42b of the double clip members, are disposed in the recesses 26 and 27, respectively, to receive the conductor blades 28 and 32 of the lamp fixture 13.

The assembly can be completed by means of a back cover portion 43 as best seen in Figure 7, and which is not shown in place on the housing of Figures 2 or 3. The cover portion 43 is generally the shape of the channel 18, which it is adapted to overlie, and is formed with series of mounting holes 43a, 43b and 43c adapted to fall into register with internally threaded bosses 44a, 44b and 44c, respectively (Figure 2) in the casing 11 to facilitate attachment of the back cover to the housing by means of suitable screws (not shown). The inside surface of the cover 43 can be formed with pairs of shallow rounded recesses 45 and 46 at its respective ends generally conforming to the raised rounded edges of the electrical conduit C with its insulation in place. A pair of screw receiving openings 46 and 47 are formed at either end of the base 50 to receive mounting screws passing through the openings 16 and 17 in the casing (Figure 2) to mount the fixture on a supporting surface such as a wall or ceiling. It will be observed that the mounting screws pass through the insulating material of the conduit between the conductors thereby to form a mechanical coupling between the casing and the insulation which prevents slipping of the insulation backwardly to bare the electrical conductors externally of the housing.

It will be observed that the double clip members 36 each include one pair of arms 39a and 39b which enter recesses corresponding to a cord cap receptacle and a

second pair of arms 42a and 42b which enter recesses corresponding to the lamp socket fixture. The two sets of arms are joined by the common bight 38. Thus, the occasional use of the cord cap receptacles 14 and 15 results in certain limited translational movement of the clip members 36 within the casing which is reflected in the arms 42a and 42b by a slight wiping action which tends to insure good electrical contact. Use of the fixture does not, however, result in spreading of the bight and lessening of the lateral pressure of the inner contact arms, such as 40a and 40b, because the latter flex independently of the bight. Furthermore, the longitudinally offset relationship of the two recesses 26 and 27 for the socket assembly 13 facilitates the use of shortened double clip members 36 and at the same time strengthening of the internal walls of the casing.

While the invention has been described herein having reference to a preferred embodiment thereof, it will be understood that it can take various other forms and shapes and should not, therefore, be regarded as limited except as defined by the following claim.

I claim:

In an electrical fixture adapted to be attached to a strip conduit comprising spaced parallel electrical conductors, an electrically insulating housing, means defining a longitudinal channel in the base of the housing to receive a strip conduit, a lamp bulb socket assembly mounted in the housing above the channel including a pair of terminals for engaging the base of an electric lamp bulb, a pair of contact blades connected respectively to the terminals of the socket assembly disposed opposite the channel and spaced therefrom, wall means defining a pair of recesses in the housing placing opposite sides of the channel in communication with the blades, said blades and corresponding recesses being offset laterally and longitudinally of the housing, first and second cord cap plug receptacles in the housing disposed on opposite sides of the socket assembly, each comprising a pair of complementary prong-receiving openings opposite said channel and spaced therefrom, wall means defining a second and third pair of recesses corresponding respectively to the prong-receiving openings and placing the opposite sides of the channel in communication with the openings, and a first pair of identical metallic clip members each including an elongated bight portion to envelop a conductor of the conduit between the cord cap receptacle and the socket and two pairs of complementary divergent arms extending outwardly from the bight to enter respectively a recess corresponding to the receptacle to define a prong-receiving channel and a recess corresponding to a contact blade to connect the conductor to the socket assembly, said pair of clip members being arranged in opposite ends and opposite sides of the housing to engage the respective conductors of the conduit to complete a circuit to the lamp socket assembly and to define respectively one prong-receiving channel of each receptacle, whereby said cord cap receptacles include, respectively, one of the clip members which is common with the lamp socket assembly, and whereby the laterally and longitudinally offset blades of the socket assembly are spaced substantially diametrically with respect to the lamp bulb socket of said assembly, a second pair of metallic clip members received in the recesses corresponding to the second prong-receiving openings of the receptacles, and a detachable cover portion over the base of the housing to cover said channel and to back up the bight portions of all of said clip members.

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