

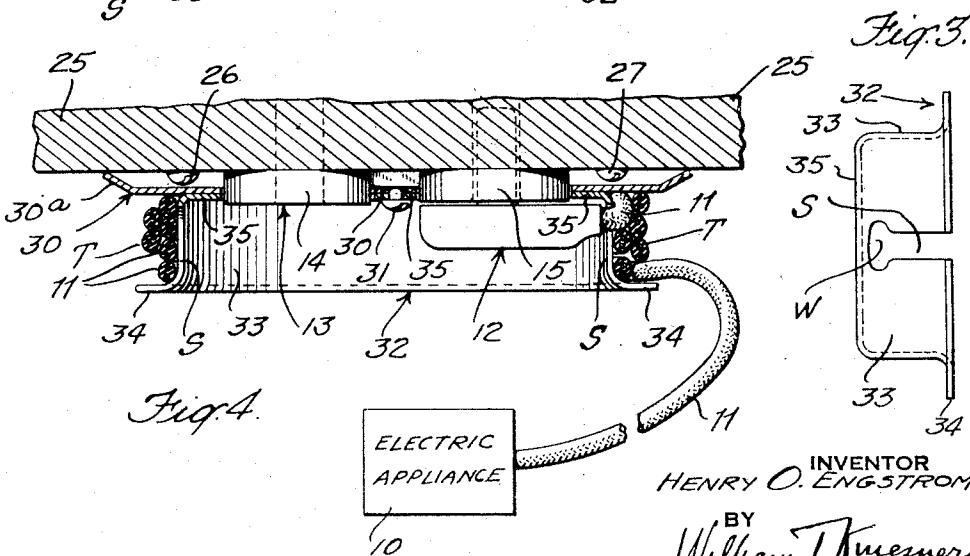
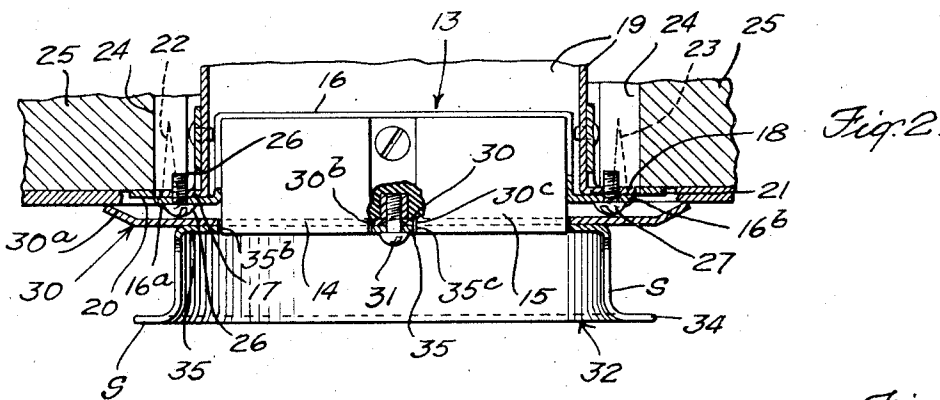
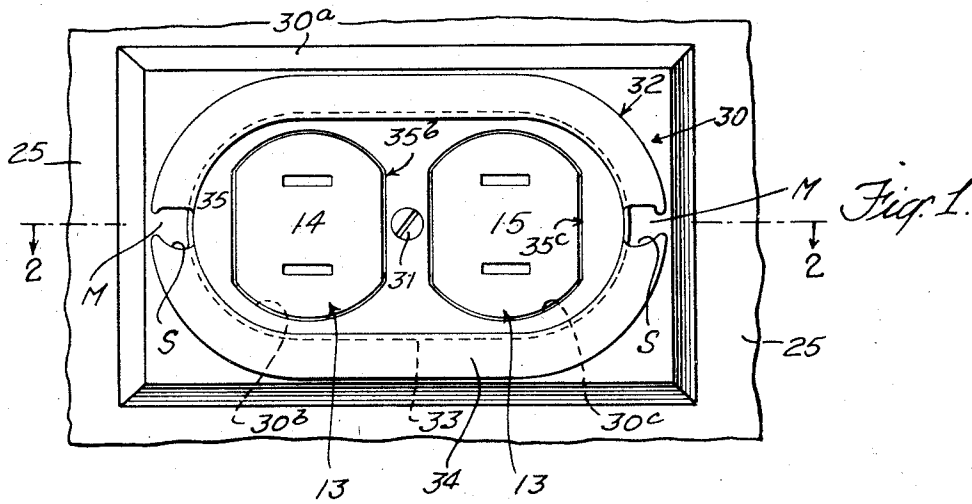
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CARRIER FOR SLACK IN ELECTRICAL CORD CONDUCTORS

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CARRIER FOR SLACK IN ELECTRICAL CORD
CONDUCTORS

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11 Claims. (Cl. 174—135)

This invention relates to electrical fittings or fixtures and more particularly to a carrier for accommodating the surplus or slack amount of the electrical flexible cord conductor.

One of the objects of this invention is to provide a simple, practical and readily applicable device for accommodating and carrying thereon surplus or slack portions of the length of cord conductor, such as is employed in connection with electric lamps, electrical household appliances, and the like, and thus to do away, in a simple and effective yet widely flexible and convenient way, with the numerous disadvantages, such as unsightliness, dirt-collecting, and hazards, inherent in electrical connections or installations where the cord conductor is, for example, either too long anyway or too long for the particular location or circumstance of use of the electrical appliance. Another object is to provide a carrier construction of the above-mentioned nature that will be inexpensive, easy to install, and neat in appearance. Another object is to provide a carrier construction of the above-mentioned nature that will be of wide flexibility of range of action, capable of functioning dependably under widely varying conditions and yet be compact in construction and unobtrusive in bulk or appearance.

Another object is to provide a carrier construction of the above-mentioned character that may be readily and quickly installed or attached in a position preferably adjacent or at a terminus or end portion of the cord conductor such as, for example, at that end of the cord conductor that has associated with it a disconnectible electrical connection means, such as a plug connector. Another object is to provide a carrier of the above-mentioned character that may be readily and conveniently installed without disturbing the end portion or terminus of the cord conductor itself. Another object is to provide such a carrier construction capable of ready and convenient attachment operatively to a plug receptacle, such as a wall outlet plug receptacle. Another object is to provide a device that will be capable of ready and easy incorporation with an outlet plug receptacle structure and capable of accommodating an appropriate portion or portions of the cord conductor or conductors that are put into electrical connection with the outlet receptacle by way of a plug or plugs. Another object is generally to provide an improved means for accommodating at will surplus or slack portions of the length of a flexible cord conductor. Other objects will be in part obvious or in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts as will be exemplified in the structure to be hereinafter described and the scope of the application of which will be indicated in the following claims.

In the accompanying drawing in which is shown by way of illustration one of the various possible embodiments of my invention:

Figure 1 is a plan view of a cord carrier construction interrelated with an illustrative form of plug receptacle;

Figure 2 is a longitudinal transverse sectional view, partly in elevation, as seen along the lines 2—2 of Figure 1, certain parts being omitted or broken away;

Figure 3 is an end view as seen from the left in Figure 1 or in Figure 2;

Figure 4 is a view like that of Figure 2 showing the illustrative installation in coaction with a cord conductor and plug connector.

Similar reference characters refer to similar parts throughout the several views of the drawing.

As conducive to a clearer understanding of certain features of my invention, it might at this point be noted that numerous electrical devices, such as lamps, and other household appliances, are usually provided with a fixed length of cord conductor usually permanently connected at its one end to the appliance and having at its other end or terminus a plug, usually two-pronged, for making a disconnectible connection to the electrical circuit as by way of a suitable plug receptacle, usually a wall type of receptacle; the cord lengths thus provided on such appliances are of fixed or invariable lengths and unless the appliance is physically positioned at such a distance from the plug receptacle that there is no slack in the cord (which is not usually the case), the slack in the cord virtually invariably presents numerous disadvantages. Thus, it is unsightly, usually, where related to a baseboard plug receptacle, the slack is positioned to collect dirt and dust, and also to form a physical obstacle, giving rise to hazards, such as tripping or stumbling, or breakage of or injury to the cord itself, and others. Also, it is not unusual in such instances as have been set forth by way of illustration only, that such disadvantages give rise also to subjecting the plug and plug receptacle or the mechanical and electrical anchorage of the cord itself, or both, to strains or pulls, often resulting in the forced withdrawal of the plug from the receptacle and thus also interrupting the

electrical circuit. One of the dominant aims of this invention is to provide a simple, practical and dependable, yet inexpensive means for overcoming such disadvantages as these.

Accordingly, for purposes of illustration, and referring first to Figure 4, I have there indicated diagrammatically at 10 an electrical device or appliance of the character above indicated, such as a floor lamp, for example, which is to be supplied with electrical energy from a suitable electrical circuit by way of the flexible cord conductor 11 which may be of any suitable construction and is preferably a two-conductor cord. Usually a purpose in using the flexible cord 11 is to provide for some range of mobility or change of location of the appliance 10 and accordingly, as above indicated, occasion frequently arises where the cord 11 is longer than is necessary for a particular circumstance or location of use of the device 10, thus presenting a certain amount of slack or surplus in its length. That surplus I prefer to take up adjacent or at one end portion or terminus of the cord 11, illustratively and preferably that end or terminus where the cord 11 is mechanically and electrically related to the electrical supply or feed circuit, the cord 11 having at that end a suitable two-pronged plug connector generally indicated at 12 in Figure 4.

As illustrative of a possible form of plug receptacle for receiving the plug 12, I have shown in Figures 1 and 2 a common or more usual type of plug receptacle for relation to a wall to form a wall outlet. The plug receptacle per se forms as to its details no part of my invention and may, for example, comprise a double plug-receptacle structure 13 provided with two upstanding portions 14—15 each provided with two recesses (Figure 1) for the reception of the contact prongs of a plug for electrical and mechanical engagement with suitable brushes or contacts within the structure 13.

The latter is provided with any suitable means, such as a metal strap 16 suitably secured to it and provided with apertured end portions 16^a and 16^b that take over and rest against suitable lugs or ears 17, 18, respectively, of an outlet or wall box 19 of usual or standard construction provided with any suitable means, such as the lugs 20 and 21 for the reception of screws 22, 23, respectively, for securing and holding the outlet box 19 in a suitable recess 24 in the wall 25.

It is into the wall box 19 that the wires of the feed circuit are brought in any usual or suitable way (not shown) and electrically connected to the plug-receptacle structure 13 in any suitable way (also not shown), whence the structure 13 with its supporting strap 16 is inserted into the box 19 and held in position by the screws 26, 27 which pass through the lugs or end portions 16^a, 16^b and are threaded into the lugs or ears 17, 18, respectively.

In such a receptacle installation, it is usual to provide a finishing or cover plate 30 peripherally flanged as at 30^a to take against the facing of the wall 25 and suitably apertured to expose therethrough the plug-receptacle or receptacles. Thus, where two plug receptacles may be provided the finishing plate 30 has two apertures 30^b and 30^c (Figures 1 and 2) through which the plug-receiving portions 14 and 15, respectively, are exposed or project. The finishing plate 13 may be made of any suitable material, such as sheet metal, molded plastic, or the

like, and it is provided with any suitable means for holding it in position, usually comprising screw means threaded into the plug-receptacle structure. Where the latter is of the double type, a single screw 31 (Figures 1 and 2) passes through a suitable centrally positioned hole in the finishing plate 30 and threaded into a suitable threaded portion or nut of the structure 13, the projection of the parts 14 and 15 into the apertures 30^b and 30^c of the finishing plate 30 sufficing to prevent the finishing plate 30 from swinging or rotating about the axis of the securing screw 31.

The plug connector 12 (Figure 4) may thus be plugged into either receptacle portion 14 or 15 to extend the circuit to the appliance 10 and as above indicated I prefer to relate the carrier for the surplus cord to that end or terminus of the cord 11 to which is related the plug connector 12. In such case a preferred form of cord carrier is that indicated generally by the reference character 32 and it may be made of any suitable material, such as sheet metal, moldable plastic, or the like, illustratively and preferably of sheet metal.

Preferably, it comprises a band-like supporting portion 33 of a shape commensurate with that of the finishing plate 30 but preferably encompassing a lesser area, the band portion 33 extending about and encompassing the plug receptacle portion or portions and terminating at its end remote from from the finishing plate 30 in an outwardly directed retaining flange 34 whose outer periphery preferably falls just within the flat or submerged portion or area (see Figure 1) of the finishing plate 30. Thus, where the finishing plate 30 is generally rectangular, the outlines of the parts 33 and 34 are generally rectangular but preferably rounded off as at the corners, as indicated in Figure 1.

The device 32 is secured in place preferably by the same means, such as the screw 31, which holds the finishing plate 30 in assembled relation to the plug receptacle and preferably, therefore, the carrier 32 is provided with a bottom or base portion 35 preferably formed to close off the inner end of the band portion 33 and to rest flat against the finishing plate 30. Preferably and conveniently, like the latter, the base portion 33 is apertured to expose therethrough the plug receptacle portion or portions, as at 35^b and 35^c, respectively, for the receptacle portions 14 and 15 and is also preferably apertured to accommodate to accommodate the securing means, such as the screw 31, that holds the finishing plate 30 assembled to the rest of the structure.

According to the above-described preferred form of device 32 may be readily attached and installed to an existing outlet receptacle installation, and the attachment thereof may be effected simply by removing the finishing plate 30 and then replacing the latter with the device 32 superimposed thereon, utilizing the same securing means, such as the screw 31, to secure the unit 32—30 in place. Possible rotary movement of the device 32 about the axis of the securing screw, where only one is employed, may be prevented in any suitable way. For example, the apertures 35^b and 35^c may coact with the outwardly projecting plug-receiving portions 14 and 15. Also, the insertion of a plug, such as plug 12, into one of the plug receptacles, such as the portion 14, dependably prevents such rotary movement, since the spacing between the upper and

lower horizontal portions, as seen in Figure 1, of the band portion 33 is preferably so proportioned that the body part of the plug is freely accommodated therebetween, and being dependably anchored against transverse movement by its prongs, the body part of the plug 12 may thus be made reliably to limit or prevent such rotary movement of the device 32.

It is about the band portion 33 that the surplus or slack in the cord 11 is wound, the finishing plate 30 and the flange 34 (Figures 2, 3 and 4) coacting with the portion 33 and holding of the turns T of the cord 11 from slipping off of the portion 33. These parts may be given any suitable or desired proportions according to the number of turns T that it is desired to accommodate; illustratively, and as indicated in Figure 4, proportions and dimensions to accommodate say six turns in several layers, may suffice for ordinary or usual circumstances.

At a suitable point or points, preferably two points, where the carrier 32 is related to a double receptacle, I provide a suitable slot, as at each of the end portions, for entering the surplus cord into or bringing it out of the winding space. Where more than one such slot is employed they are preferably identical.

Each slot is preferably positioned on the center line extending between the prong-receiving recesses in the plug-receptacle portion or portions, as appears clearly from Figures 1 and 2 where the two slots are indicated by the reference character S, and preferably each slot S extends not only through the flange 34 but also through at least a substantial or major portion of the band part 33 (see Figures 3 and 4); this relationship I prefer particularly where the plug connector 12 is of the specific type indicated in Figure 4 where the cord conductor 11 is brought out of the plug body laterally and along the center line between the two prongs; a suitable plug for this preferred purpose may take the form of that disclosed in Patent No. 2,112,752 of March 29, 1938.

Accordingly, the cord, as is better shown in Figure 4, in leaving the plug body laterally and in line with the center line between the two prongs, may extend along the base portion 35 of the device 32 whence it is slipped through the slot S and wrapped or turned into the winding space for as many preferably complete turns as is desired, whence it may be brought out through that portion of the slot S that is in the flange portion 34, all as indicated in Figure 4.

Preferably, that portion of the slot S that is in the flange 34 has an inner relatively wide part terminating adjacent the periphery of the flange 34 in a mouth M that is relatively narrow but not sufficiently so as to preclude the passing of the cord 11 therethrough even, if desired, with the accompaniment of some restriction or compression of the cord, usually embodying resilient rubber. With this preferred shaping of the outer portion of the slot S, the free or extraneous length of the cord 11 is sufficiently well held to prevent the turns T from unwinding and to hold the cord 11 in place.

Preferably, also, the inner or bottom end portion of the slot S that extends into the band portion 34 is widened out as at W to give the extreme end portion of the cord 11 adequate free play when none of it is wound into the winding space and also to relieve against the possibility of effecting too sharp a bend in the cord 11 when winding of any surplus thereof is commenced and completed. In either case, the carrier de-

vice 33 dependably functions to take any pulls or strains to which the cord 11 is subjected as, for example, upon movement of the appliance 10, and thus such pull or strain cannot be transmitted to the plug and receptacle structure or to the mechanical and electrical anchorages of the conductor 11 to the plug.

Where several plug receptacles are provided such as the double structure illustratively above described, the winding space provided by the device 32 and the finishing plate 30 may be used, as will now be clear, to accommodate the surplus or slack portions of more than just one of the flexible cords.

It will thus be seen that there has been provided in this invention a construction in which the various objects hereinbefore noted together with many thoroughly practical advantages are successfully achieved. It will be seen that the construction is simple and inexpensive and lends itself readily to production on a quantity basis. For example, where the carrier 32 is made of sheet metal, it will be noted that in the illustrative form above described it lends itself readily to inexpensive fabrication, as by stamping or the like. Where the invention is embodied in the form of an attachment, as in the illustrative form, its assembly or attachment to existing installations will be seen to involve only the simplest manual operations and can be effected speedily.

As many possible embodiments may be made of the above invention and as many changes might be made in the embodiment above set forth, it is to be understood that all matter hereinbefore set forth, or shown in the accompanying drawing, is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. In construction of the character described, in combination, a wall type of plug receptacle construction having a finishing plate that has an aperture therein and a plug receptacle exposed through said aperture, with means for securing said finishing plate in position, a cord carrier comprising a member having a flat portion of lesser expanse than said finishing plate for resting against the latter and having an aperture through which said plug receptacle is exposed, a band-like portion extending peripherally about said flat portion in a direction generally away from the surface of said finishing plate, said band-like portion terminating in a flange-like portion extending peripherally away from said band-like portion and spaced from the surface of the finishing plate, and means whereby said securing means is effective to hold said carrier assembled to said receptacle construction, said peripheral band-like portion being of sufficient expanse to provide internally thereof a space for freely accommodating a plug for movement into and out of operative relation to said plug receptacle exposed through said apertures, the cord extending from a plug inserted in said exposed plug receptacle when wrapped about said band-like portion and between the finishing plate and said flange-like portion becomes thereby anchored to said receptacle construction independently of the connection between the plug and the plug receptacle.

2. In construction of the character described, in combination, a wall type of plug receptacle construction having a finishing plate that has an aperture therein and a plug receptacle exposed through said aperture, with means for securing

said finishing plate in position, a cord carrier comprising a member having a flat portion of lesser expanse than said finishing plate for resting against the latter and having an aperture through which said plug receptacle is exposed, a band-like portion extending peripherally about said flat portion in a direction generally away from the surface of said finishing plate, said band-like portion providing a free space within it for by-passing a plug into or out of operative relation to said plug receptacle and terminating in a flange-like portion extending peripherally away from said band-like portion and spaced from the surface of the finishing plate, and a plug having a length of flexible cord thereon inserted through the space within said band-like portion and into said plug receptacle exposed through said apertures whereby said plug falls within the space inside of said band portion, said carrier having a cut-away portion to permit the cord from said plug to be brought into engagement with the external surface of said band-like portion and wrapped about the latter in the space between said flange portion and said finishing plate.

3. A construction as claimed in claim 2 in which the cut away portion in said carrier is in the flange-like portion thereof and is in the form of a slot open-ended in the periphery of the flange portion, said slot being of restricted width at said end portion to form a narrow mouth through which the cord may be passed and thereafter wrapped about said band-like portion.

4. A construction as claimed in claim 2 in which said cut away portion extends into said band-like portion to lead the cord from said plug into said winding space.

5. In construction of the character described, in combination, a plug receptacle construction for the reception of a plug having a flexible cord conductor attached thereto, said plug receptacle construction having means securing to it a cord carrier means, the latter comprising a band-like portion extending about the space occupied by a plug assembled to said plug receptacle construction, said space being open ended for the free passage of a plug into and out of operative relation to said receptacle, whereby said band-like portion substantially encompasses said plug laterally, said band-like portion having two spaced means extending thereabout for holding the turn or turns of cord conductor wrapped about said band-like portion against coming off of the latter.

6. A construction as claimed in claim 5 in which said carrier means comprises at least two parts and said securing means acts also to hold said two parts assembled.

7. A construction as claimed in claim 5 in which said carrier means is made up of at least two parts, one part comprising said band-like portion and one of said holding means, and means for holding said two parts assembled.

8. A construction as claimed in claim 5 in which that of said two holding means that is

nearest said plug receptacle includes a plate-like portion that is apertured to expose said plug receptacle therethrough.

9. A cord carrier device for attachment to a wall plug-receptacle structure having a finishing plate secured in place by screw means and through which finishing plate the plug receptacle is exposed, comprising a member having a base portion to rest against said finishing plate and having an aperture to expose said plug receptacle therethrough, said base portion having extending thereabout means forming a support onto which one or more turns of cord from a plug inserted in said plug receptacle may be wrapped, said base portion having aperture means for accommodating said screw means to hold it assembled to said plug-receptacle structure.

10. In construction of the character described, in combination, a plug receptacle for detachably receiving a plug having a cord extending therefrom and having mechanically anchored there-to means forming a drum about which one or more turns of the cord of a plug inserted in said receptacle may be wrapped, said drum means providing a passage for the free movement of a plug into or out of operative relation to said plug receptacle, whereby strains transmitted by the remainder of said cord are taken up by said plug receptacle and not by said plug.

11. In construction of the character described, in combination, a plug receptacle construction, and a combined cover and cord-carrier means therefor comprising a band-like portion having plate-like means to cover said receptacle construction, said plate-like means having an aperture to permit the passage therethrough and into the plug receptacle construction of the prong means of a plug and said band-like means extending about said aperture and having within it an open ended space so that a plug can be passed through said open ended space in said band-like means and assembled to said receptacle construction upon insertion of the prong means of said plug through said aperture in said plate-like means and into said receptacle construction or may be withdrawn therethrough for disengagement from said plug receptacle, said plate-like means extending beyond said band-like portion, the latter having flange means extending therefrom and spaced from said extended plate-like means to coact with the latter in holding a cord from said plug on said band-like portion when wrapped about the latter, the connection between said receptacle construction and the plug inserted therein operating only to substantially anchor the plug end of said cord and thereby facilitate manual wrapping of the cord about said band-like portion, and means for holding said combined cover and carrier means assembled to said plug receptacle construction and for permitting movement of said plug into or out of assembled relation to said receptacle construction without removal of the combined cover and carrier means.

HENRY O. ENGSTROM. 65