May 12, 1925. 1,537,160

F. DIEHL

CONNECTER

Filed Jan. 24, 1924

Fig.1.

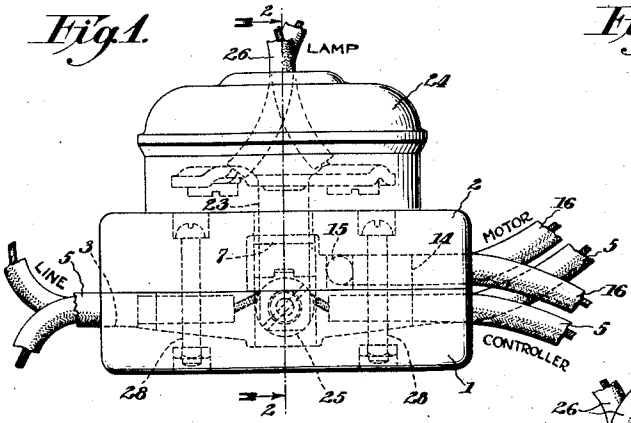


Fig.2.

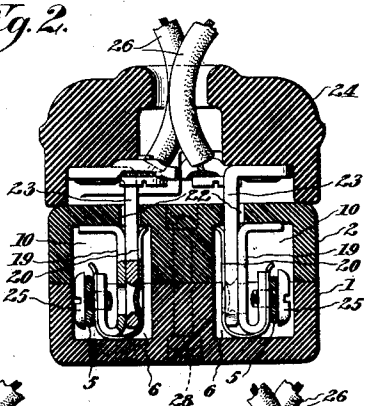


Fig.3.

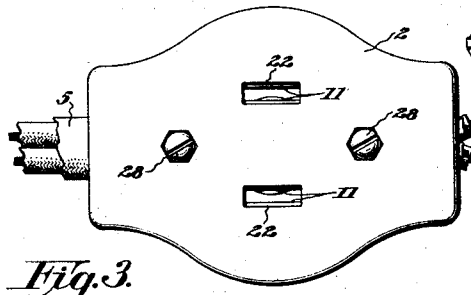


Fig.4.

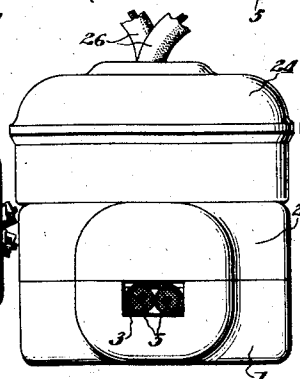


Fig.5.

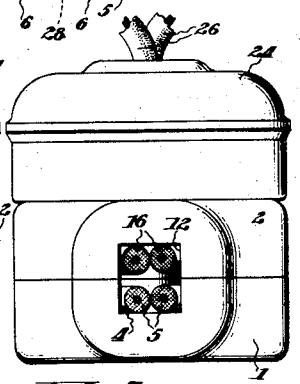


Fig.8.

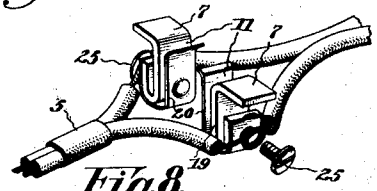


Fig.7.

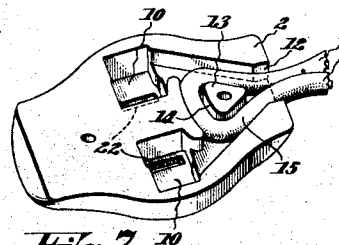


Fig.9.

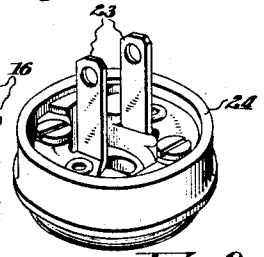


Fig.6.

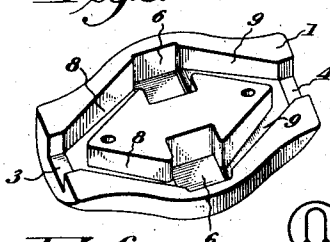


Fig.10.



Fig.11.

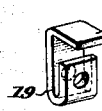
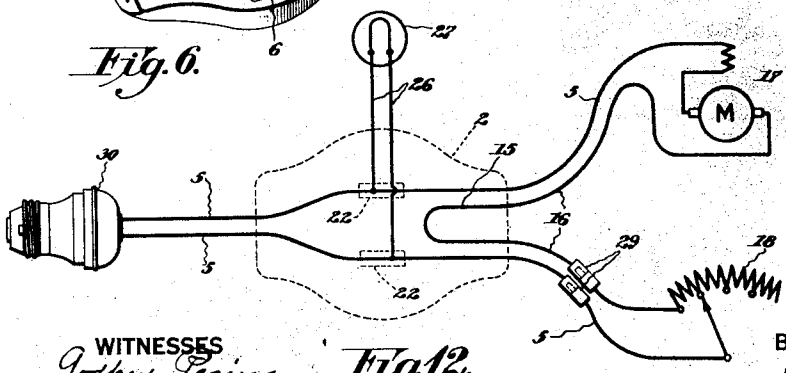


Fig.12.



WITNESSES

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UNITED STATES PATENT OFFICE.

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CONNECTER.

Application filed January 24, 1924. Serial No. 688,335.

To all whom it may concern:

Be it known that I, FREDERICK DIEHL, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Connecters, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to connecters for electric circuits and has for an object to provide a connecter which may be applied to and between the ends of a length of flexible twin-conductor cord, without severing such cord, and when so applied will afford a current tap in which a standard plug may be readily inserted to connect a branch circuit in multiple with a main circuit of which such cord is a part. Stated differently, an object of the invention is to provide a through-cord current tap adapted for application to the usual flexible twin-conductor cord ordinarily known as lamp-cord.

A further object of the invention is to provide a cord-holder adapted to hold together a plurality of flexible electric conductors branching in pairs from said holder and connecting in series with each other a plurality of electrical appliances to be concomitantly supplied with current from a common source.

A further object of the invention is to provide a cord-holder and connecter, the parts of which are few in number and of simple construction requiring a minimum amount of time to assemble.

Still further the invention has for an object to provide a cord-holder and connecter particularly adapted for application to flexible conductor cord without the necessity of severing such cord and which will hold the emergent wires of a plurality of circuits against slippage or displacement relative to one another and to the cord-holder.

To the attainment of the ends in view the device comprises an oblong insulating casing made in two mating halves which are adapted to be held together by suitable means. The casing sections are preferably made of substantially the same size and shape as the device is not intended to be screwed to a support of any kind. It is formed with transversely spaced internal cavities which loosely receive but hold in position a pair of female connecter elements or terminal sockets to which the flexible line conductors entering and emerging from the connecter casing may be readily connected without severing such conductors. The exposed face of the upper half-section of the connecter casing is formed with apertures through which the male elements of a standard plug connecter may be inserted into contact relation with the connecter elements within the casing. The upper half-section of the connecter casing is formed at the outlet end with an aperture within which is a groove extending around an anchor post for holding in position a looped conductor forming a part of a series connection between separated electrical devices such as a motor and its controller to which the emergent line conductors separately lead.

In the accompanying drawings, Fig. 1 is a side elevation of a connecter embodying the invention. Fig. 2 is a section on the line 2—2, Fig. 1. Fig. 3 is a top plan view of the connecter. Figs. 4 and 5 are respectively inlet end and outlet end elevations of the connecter. Fig. 6 is a perspective view of the under half-section of the connecter casing. Fig. 7 is a similar view of the upper half-section of the connector casing. Fig. 8 is a perspective view of the line conductors with female connecter elements attached in position for reception by the under half-section of the connecter casing shown in Fig. 6. Fig. 9 is a perspective view of a standard male plug connecter element. Figs. 10 and 11 are perspective views of component parts of the female connecter elements shown in Fig. 8, and Fig. 12 is a diagram of connecters illustrating a use to which the present invention may be put.

In the preferred embodiment of the invention illustrated, 1 represents the under and 2 the upper half-section of the connecter casing. These parts may conveniently be molded from any suitable insulating material or composition. The under section 1 is formed at one end with an inlet aperture 3 and at its opposite end with an outlet aperture 4 for the flexible line conductors 5. Midway between the apertures 3 and 4 the casing section 1 is formed with the

transversely spaced cavities 6 which are adapted to loosely receive but prevent material displacement of the terminal sockets 7. Leading from the inlet aperture 3 to the cavities 6 are the divergent grooves 8 and from the cavities 6 to the outlet apertures 4 are the convergent grooves 9; the grooves 8 and 9 forming a diamond shaped figure permitting the conductors of a twin conductor cord to be separated within the casing for attachment to the terminal socket elements 7.

The upper half-section 2 of the casing is formed with spaced cavities 10 adapted to register with the cavities 6 of the under half-section 1 and house the open mouths 11 and upper end portions of the terminal socket elements 7. The section 2 is also formed with an aperture 12 in register with the outlet aperture 4 of the section 1 and with an anchor post 13 within the aperture, which post is surrounded by a groove 14 for reception of a loop 15 of conductor cord 16 serving to connect in series two electrical devices such, for example, as a motor 17 and its foot or knee operated controller 18 constituting a sewing machine driving attachment. By virtue of this arrangement, one of the conductors 16 may be paired with an emergent line conductor 5 and led as a twin conductor cord to the motor while the other conductor 16 and emergent line conductor 5 may be paired and led as a twin conductor cord to the controller. The terminal socket elements 7 preferably each comprise nested U-shaped rigid and resilient elements 19, 20, the inner leg of the rigid element 19 is longer and is formed with a lateral extension 21 overhanging the outer leg. The inner leg of the resilient element 20 is spaced from the inner leg of the rigid element 19 sufficiently to receive through the casing apertures 22 and yieldingly grip an element 23 of a standard plug connecter 24 as shown in Fig. 2. The short legs of the rigid elements 19 are tapped to receive terminal screws 25 which bind the line wires and the respective resilient sections to the rigid sections. The terminals 23 of the plug member 24 may be connected by flexible leads 26 to a lamp 27 for use, say, as a sewing machine lighting attachment. The two halves 1, 2 of the connecter casing may be held together by suitable screw bolts 28.

By referring to Figs. 1 and 2 it will be noted that the terminal socket elements 7 have their plug receiving passageways disposed transversely of the plane of division between the casing sections 1, 2 and substantially fill but are not rigidly held within their respective cavities in the connecter casing. They are thus effectively held against material displacement from their respective positions in register with the apertures 22 but can float or shift sufficiently to accommodate their positions to the plug connecter element 23 and make firm electrical contact therewith. Admission of the plug members 23 to the mouths 11 of the terminal socket members is facilitated by flaring such mouths as by bending the adjacent legs of the rigid and resilient elements away from each other.

The device is particularly useful in connection with flexible or lamp-cord wiring in connecting electrical devices for household use; it being desirable with such devices to disconnect and store the devices in a compact bundle in an out-of-the-way place when not in use. It will therefore be understood that the line wires 5 may lead from an ordinary attachment plug 30 to be screwed into a lighting fixture or wall outlet, and the leads 5, 16 of the motor and controller circuits may, if desired, be disconnected from the motor and controller by use of ordinary plug and socket connecters indicated at 29. The connecter 1, 2 is not secured to any support and is free to be moved with the conductor-cord, which is the sole means of support for such connecter.

Having thus set forth the nature of the invention, what I claim herein is—

1. An electric cord holder and current tap comprising an insulating casing formed in two mating sections and having through passageways for a pair of line conductors, an anchor post within said casing around which an additional conductor may be looped to hold its emergent legs in juxtaposition to the emergent line conductors, and a plurality of terminal sockets adapted to receive plug-connecter elements, said terminal sockets being disposed within said casing and connected with the respective line conductors.

2. An electric connecter comprising a casing of insulating material, a flexible twin-conductor line cord passing through said casing, said casing having an anchor post within its end adjacent the emerging portion of the line cord, and an additional conductor looped around said anchor post and having the legs of its loop paired respectively with the emergent line conductors, and spaced terminal socket members housed within said cord-holder and electrically connected to said line conductors but insulated from said looped conductor.

3. An electric cord-holder comprising an insulating casing formed in two mating half-sections, one half-section having at one end a single line-conductor inlet aperture and at its opposite end a single line-conductor outlet aperture; said casing half-section being formed between its ends with transversely spaced terminal socket cavities connected with said inlet and outlet apertures by convergent grooves; the other casing half-section being

formed with terminal socket cavities in register with the terminal socket cavities of the first mentioned casing half-section, and being also formed at one end with an aperture and within such end with an anchor post surrounded by a groove in communication with said last mentioned aperture, and terminal socket members disposed in said terminal socket cavities, one of the casing half-sections having plug terminal apertures in register with said terminal socket members.

In testimony whereof, I have signed my name to this specification.

FREDERICK DIEHL.