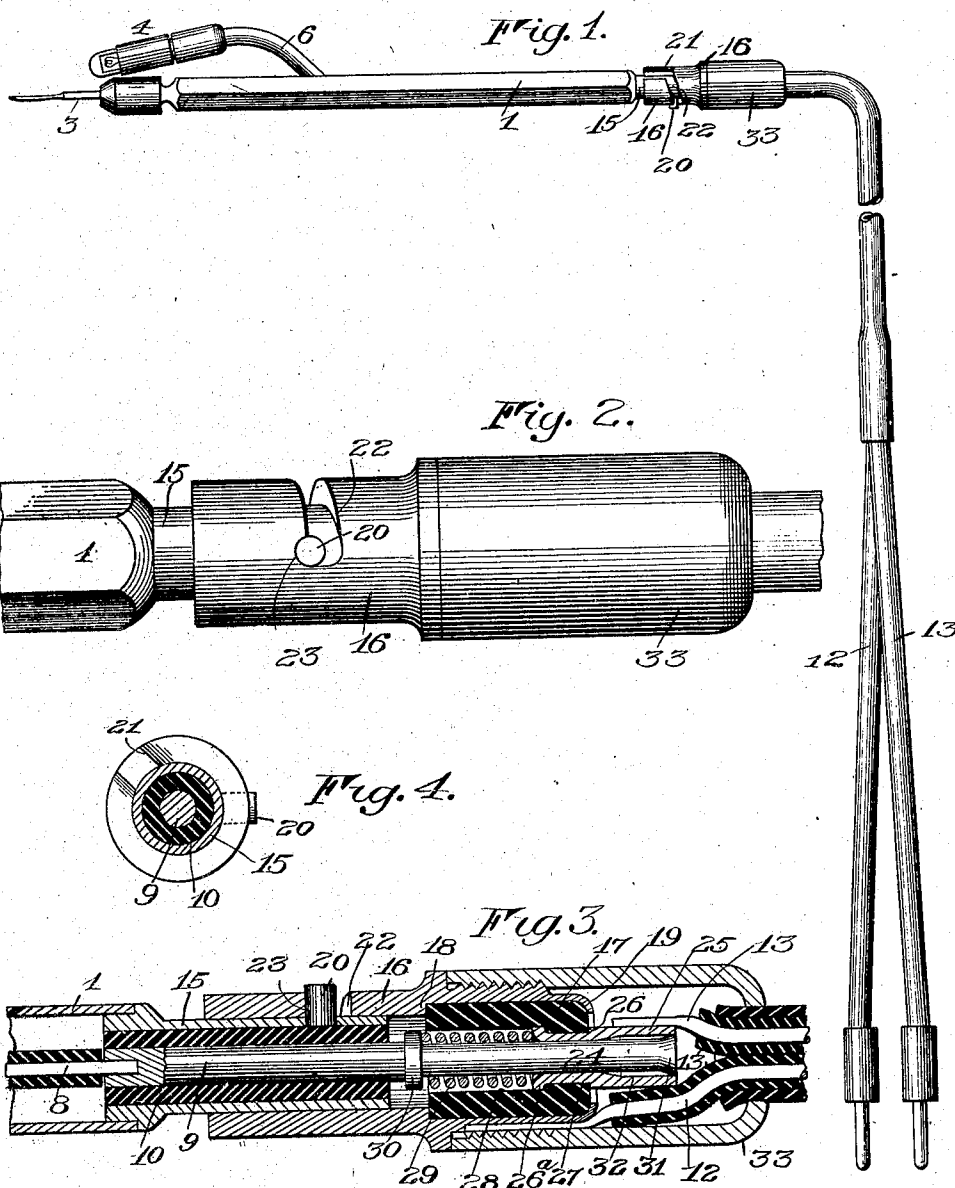


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ELECTRIC COUPLING.
APPLICATION FILED JULY 10, 1908.

930,873.

Patented Aug. 10, 1909.



Witnesses

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ELECTRIC COUPLING.

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To all whom it may concern:

Be it known that I, THORVALD MAIJGREN, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Electric Couplings; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

The present invention relates to electrical couplings and it has for one of its objects to provide an effective means for locking the two members of the coupling against accidental separation; and for another object to make improved provision for yieldingly mounting one of the terminals or contacts so that a firm engagement will be obtained.

To these and other ends the invention consists in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings: Figure 1 shows an embodiment of the improved coupling employed for connecting a tool holder to suitable line wires; Fig. 2 shows the same coupling in side elevation; Fig. 3 shows it in longitudinal section; and Fig. 4 is a transverse section through the plug member of the coupling.

The coupling comprises two members, a plug and a socket piece, the plug, in the present instance, being formed as a reduced end on a hollow tool holder 1 which carries a suitable tool 3 and an electric incandescent lamp bulb 4 on an arm 6 branched therefrom, while the socket piece has the line wires 12 and 13, connected thereto. One of these members, in this instance, the socket piece is formed with a yielding terminal 24 which is preferably in the form of a plunger slidably mounted in a conducting sleeve 25. This conducting sleeve, in this instance, projects from one end of the socket piece and has the line wire 13 secured thereto by solder or in any other suitable manner. The sleeve also has at one end an enlarged bore 32 in which the enlarged end 31 of the plunger 24 works to limit the movement of the latter under the action of helical spring or other resilient element 29 that may surround the plunger and abut the other end of the sleeve

25 and a shoulder formed by an enlargement 30 on the adjacent end of the plunger.

The helical spring 29 and the sleeve 25 are preferably arranged within an insulating sleeve 17, which may have a large bore 28 and a smaller bore 27, the spring being arranged within the larger bore and the sleeve 25 being arranged within the smaller bore and having a shoulder 26 which abuts the end of an insulator and a flared end 26^a which is engaged with the shoulder formed between the two bores of the insulator, thus securely fastening the sleeve in the insulator. The insulator is held within a sleeve 16 which may form the other terminal of the coupling member and also have a large and a small bore forming a shoulder 18 between them. The smaller bore forms a socket while the insulator is arranged within the larger bore and abuts the shoulder 18 at one end, its other end being engaged by a flange 19 which may be formed by contracting an end of the sleeve 16.

The end of the line wire 12 is secured to the exterior of the sleeve 16 and is inclosed with the end of terminal 13 and the projecting portion of the sleeve 25 by a cap 33 which is perforated to permit both line wires to pass therethrough and has screw threaded engagement with the sleeve 16.

The plug member of the coupling is received within the socket member and may consist of a sleeve 15 forming one terminal and a cylinder 9 forming the other terminal and arranged within an insulating sleeve 10 that is positioned within the sleeve 15 and is adapted to engage the terminal 24. In this instance, the terminal 9 is connected to a conductor 8 which leads to one terminal of bulb 4, while the terminal 15 is connected to the tool holder 1 which leads to the other terminal of the bulb.

In order to securely lock the two coupling members together, I provide a bayonet joint lock between them. This in this instance comprises a pin 20 preferably arranged on the plug member and adapted to work in a longitudinal slot 21 and a helically formed transverse slot 22 formed in the socket member, the pin being adapted to enter a locking notch 23 branched from the transverse slot near the end of the latter, and being held in said notch by the yielding contact 24.

To interlock the coupling members the

plug member has its pin 20 introduced into the longitudinal slot 21 until the inner end of the latter is reached, when the parts are turned relatively causing the pin to move in the helically formed slot 22 and compress spring 29 which when the notch 23 is reached, forces the pin 20 into said notch. The spring also holds contact 24 firmly against contact 9.

10 A coupling constructed in accordance with this invention is inexpensive to manufacture and simple to operate and its members are effectively locked together, thus adapting it for a tool, such as shown, which is turned by
15 hand in all directions. While it has been shown as employed with a tool, it is of course to be understood that it may be employed for other purposes.

What I claim is:

20 1. An electric coupling member having a pair of electrical terminals, one of which is resiliently mounted and the other of which is formed with a longitudinal slot and a transverse slot having a locking notch into
25 which a projection on another coupling member is forced by the resiliently mounted terminal.

30 2. An electrical coupling member comprising a terminal, an insulator mounted in the terminal, a movable plunger mounted in the insulator and forming the other terminal, and a helical spring surrounding the plunger and holding it in one position.

35 3. An electrical coupling member comprising a terminal, an insulator mounted in the terminal, a sleeve mounted in the insulator at one end of the latter, a plunger working in the said sleeve and a helical spring surrounding the plunger to hold the
40 latter in one position and arranged at the other end of the insulator.

45 4. An electric coupling member comprising a terminal, an insulator sleeve having two bores and arranged within the terminal, a sleeve arranged partially within the insulating sleeve and projecting from one end thereof, and a resiliently mounted plunger working within the last mentioned sleeve and forming a terminal.

5. An electric coupling member comprising a terminal, an insulator in the terminal, a sleeve arranged within the insulator having two bores, a resiliently mounted plunger forming the other terminal, working in the last mentioned sleeve and having an enlarged end working in the large bore of said sleeve to limit the movement of the plunger, and a helical spring engaging the sleeve and the head of the plunger.

6. An electric coupling member comprising a terminal, an insulator arranged in the terminal and having two bores, one of which is larger than the other, a sleeve arranged in one bore, a headed plunger movable in the sleeve and having a shoulder to cooperate with said sleeve to limit the movement of the plunger, and a helical spring arranged in the plunger bore and abutting the sleeve and the head of the plunger.

7. An electrical coupling member comprising a terminal, an insulator sleeve having two bores carried by the terminal, a sleeve arranged within the smaller bore of the insulator and having a shoulder abutting the wall at the outer end of the smaller bore and its inner end flared to engage the shoulder formed between the two bores, and a resiliently mounted plunger working within the last named sleeve and forming a terminal.

8. An electrical coupling member comprising a terminal, an insulator in the terminal, a sleeve arranged in the insulator having two bores, and a plunger forming the other terminal working in the last named sleeve and having an enlarged end working in the large bore to limit its movement.

9. An electrical coupling member comprising a sleeve forming one terminal and externally screw threaded, an insulator arranged in the sleeve, a terminal carried by the insulator and a cap for one end of the terminal sleeve engaging said screw threads.

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Witnesses:

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