

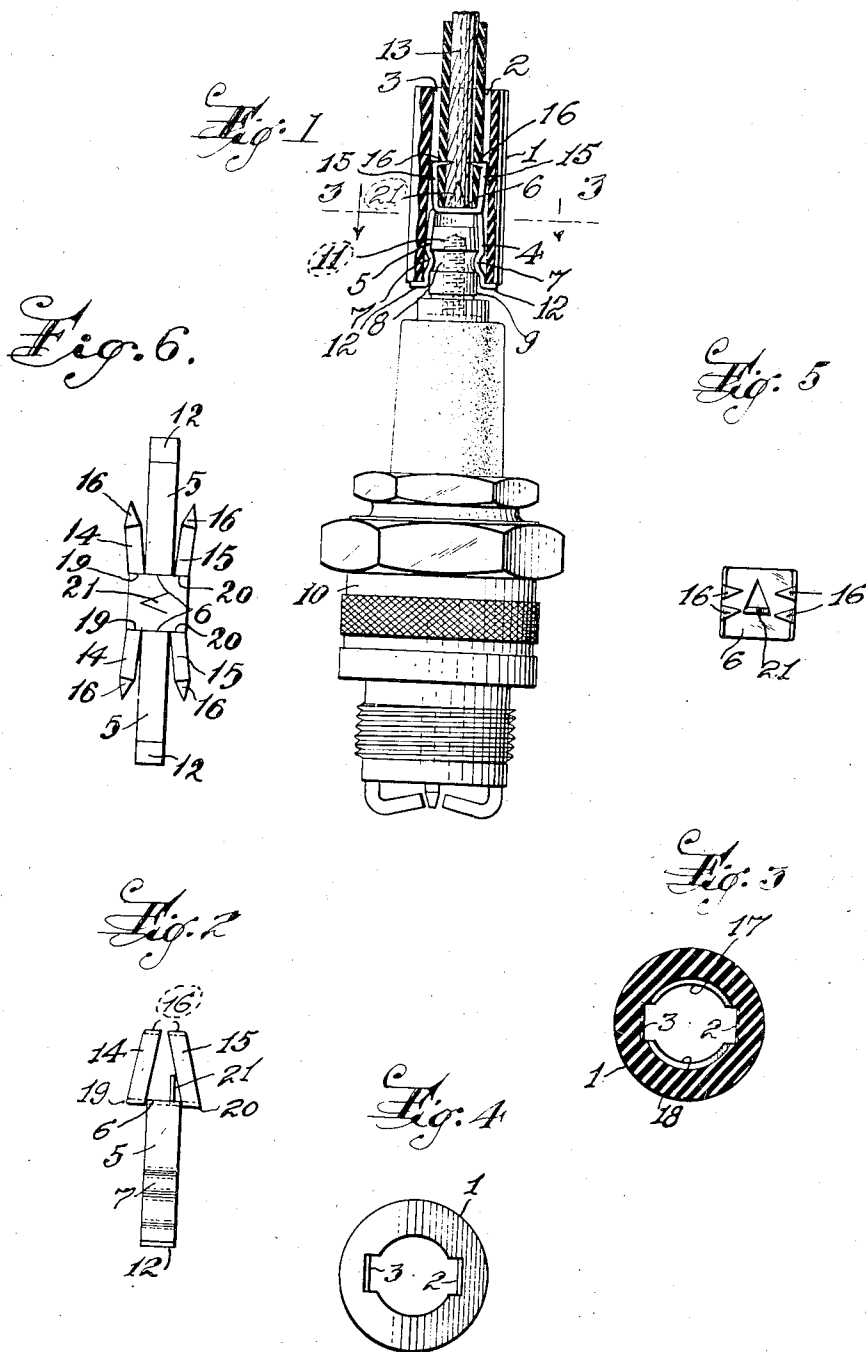
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SPARK PLUG CABLE TERMINAL

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SPARK PLUG CABLE TERMINAL

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6 Claims. (Cl. 173-269)

This invention relates to means for attaching an ignition cable to the electrode of an ignition spark plug.

It is the principal object of my invention to provide an improved form of spark plug cable terminal which may be quickly attached to the ignition cable with the least amount of work, and which may be quickly attached to a spark plug electrode, the attachment to the cable and to the plug being made in a highly efficient manner.

While attaining the principal object of my invention, it is another object to provide a spark plug cable terminal in which the electrical connection parts are substantially concealed and thereby protected.

Other and further objects will be clear to one skilled in this art, from a reading of the specification taken in connection with the annexed drawing, wherein:

Figure 1 is an enlarged view showing my improved terminal connected to an ignition cable and to the central electrode of a spark plug, the terminal per se being shown partly in elevation and partly in section.

Figure 2 is a side view on an enlarged scale, taken at right angles to Figure 1 and showing one of the metallic connecting members of the terminal.

Figure 3 is a view on an enlarged scale on the line 3-3 of Figure 1, showing the insulating sleeve of the terminal.

Figure 4 is a view on an enlarged scale of the insulating sleeve of the terminal, looking at the spark plug end.

Figure 5 is a view on an enlarged scale of the top of the member shown in Figure 2.

Figure 6 is a plan view of the blank from which the metallic member of Figure 2 is made.

In the different views, wherein like numbers refer to corresponding parts, 1 is a sleeve of suitable insulating material, having longitudinal, interiorly located channels 2 and 3. These channels are deeper at the plug end of the insulator 1 than at the cable end for at least two reasons: first, to assist in the manufacture of the sleeve 1, and, second, to provide more space at the plug end of the sleeve to allow movement of the arms 4 and 5 which extend from the base portion 6 of the metallic member shown in elevation in Figure 2.

The arms 4 and 5 have indented portions of formations 7 to engage an annular groove 8 in a plug member 9 which is adapted to be attached to the central electrode of the spark plug 10. The

central electrode is shown in dotted lines at 11 and, as indicated, is screw-threaded to receive the plug portion 9 of the terminal device. The outer or plug ends of the arms 4 and 5 are bent outwardly at 12 for a purpose to be later described.

The metallic member has a pair of arms 14 and 15 formed on opposite sides of the base portion 6 in the manner indicated in Figure 2, and these arms are provided with tines 16 which are adapted to be forced through the insulation of the cable into the conductor thereof, as shown in Figure 1. After the metallic member has been attached to the cable in the manner indicated, then the cable and terminal member are inserted into the sleeve 1, the bent ends 12 of the arms 4 and 5 following the channels 2 and 3. The sleeve 1 is provided with internal flanges 17 and 18 at about the position indicated in Figure 1, where section 3-3 is taken which act as a stop and seat for the edges 19 and 20 of the base portion 6 of the metallic contact member.

When the metallic contact member reaches its seat the bent ends 12 of the arms 4 and 5 pass over the end of the sleeve 1, thereby positioning the sleeve on the cable so that in handling and shipping it will not slide off or be accidentally pulled off the contact member. This construction is also highly advantageous after the parts have been assembled on a spark plug as shown in Figure 1, since a pull on the ignition cable, sufficient to pull the device from the spark plug, will carry the sleeve with the cable without disturbing their assembled relation.

The metal plug member 9 which forms a part of the terminal connection with the spark plug is usually a fitting furnished with the spark plug, although when it is desired to apply my terminal to a spark plug not equipped with the metal fitting plug 9, it may be furnished along with my terminal.

It will be seen from the above description that the terminal device is rotatable about the plug 9, while at the same time making a good contact for the ignition current through the medium of the metallic member 5 attached to the ignition cable in the manner described.

The base portion 6 may be provided with an up-turned projection or tine 21 which is adapted to enter the end of the conductor 13 between the strands thereof to better insure a good electrical contact with the ignition cable.

What I claim is:

1. A spark plug cable terminal including a sleeve of insulating material and having an internal stop and seat, a metallic member posi-

tioned within said sleeve, said metallic member having a base portion resting against said stop and seat, arms extending from the base portion toward one end of the sleeve and having inturned tines piercing into the conductor of the cable, other arms extending from said base portion to the opposite end of the sleeve, for engaging a plug member and having outwardly turned ends extending across the end of the sleeve when said metallic member is forced into position within the sleeve.

2. A spark plug cable terminal as set forth in claim 1, further characterized in that the sleeve has spaced channels within which said other arms are positioned, thereby preventing the said metallic member from turning in the sleeve.

3. A spark plug cable terminal as set forth in claim 1, further characterized in that the sleeve has spaced channels within which said other arms are positioned, thereby preventing the said metallic member from turning in the sleeve, and further characterized in that the channels spread apart from the cable end of the sleeve toward the plug-end, and the circular opening in the cable end of the sleeve is greater than at the plug-end, whereby the metallic member can be assembled in the sleeve in only the proper manner, the other of said arms being spaced to cooperate with the channels so they can be moved laterally therein.

4. A spark plug terminal including a metallic member having sets of arms formed integrally from a base portion and extending in opposite direction from the base, one set of arms being spaced somewhat wider than the other set, one set of arms having inturned tines adapted to pierce into an ignition cable inserted between the arms having the tines, another set of arms having formations to engage a cooperating formation fixed on a spark plug electrode, and a sleeve of insulation having internal formations to receive said metallic member in only one position with

its arms to hold them in operative position and to prevent the metallic member from turning, the arms engaged by said spark plug formation having outwardly turned ends extending across the outer end of the sleeve to prevent the metallic member from being withdrawn from the sleeve by a pull on the ignition cable.

5. A unitary spark plug terminal device comprising a sleeve of insulating material and a metallic member housed within the sleeve, said sleeve having internal formations and the metallic member cooperative formations to properly position the metallic member within the sleeve and preventing its exit in one direction, said metallic member having arms with inturned tines located within the sleeve for gripping an ignition cable and contacting with the conductor thereof, and held in gripping position by the sleeve, the metallic member having other spaced arms protruding from the sleeve at the end opposite to said tines for engaging a plug member, said spaced arms having outwardly turned ends extending over the end wall of the sleeve to lock the metallic member in the sleeve.

6. An article of commerce comprising a spark plug terminal having a sleeve of insulating material and a metallic member housed within the sleeve, said metallic member having arms with inturned tines for gripping an ignition cable and contacting with the conductor thereof, the metallic member also having arms extending in an opposite direction to the arms having the tines and having their ends protruding from the end of the sleeve and bent thereover to normally prevent the metallic member from moving through the sleeve in the direction of the cable opening, and cooperative means between the sleeve and metallic member for limiting the longitudinal movement of the metallic member in the sleeve in a direction opposite to the first-mentioned direction.

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