

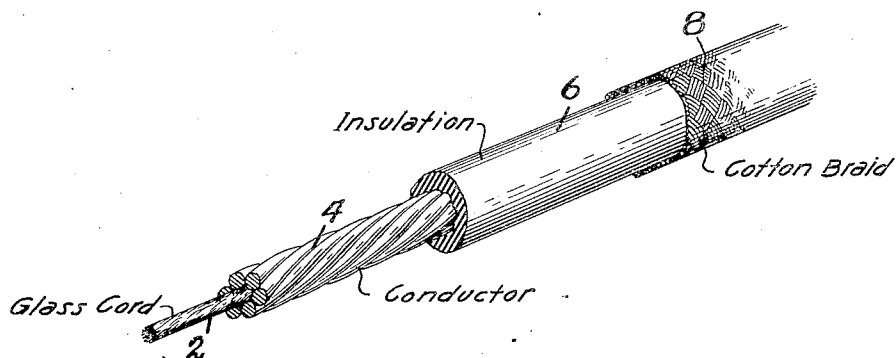
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IGNITION CABLE

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## UNITED STATES PATENT OFFICE

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## IGNITION CABLE

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## 1 Claim. (Cl. 174-110)

My invention is directed to an improvement in ignition cables for internal combustion engines, and has for some of its objects the provision of a cable of great tensile strength, light weight and possessing excellent conducting properties.

The usual ignition cable merely comprises an insulated copper conductor. Such a cable has little tensile strength and for this reason trouble is experienced with rupturing of the cable when it is pulled into the usual shielding harness so often employed in practice, particularly in airplane work. The suggestion has been made that the conductor be made of steel instead of copper. While steel has greater tensile strength than copper, it is a relatively poor electrical conductor. Consequently such a cable while better in one respect is poorer in the more important respect, to wit, electrical conducting characteristics.

By the present invention I provide an ignition cable possessing the tensile strength of steel, of light weight as compared with a steel conductor cable or a cable employing copper and steel, and inasmuch as in my cable I employ copper for the conductor the conducting characteristic of the cable is high.

More specifically my invention provides an ignition cable comprising a continuous glass cord center about which I strand copper wires constituting the conductor of the cable. Over-all I provide any of the insulating layers or sheaths employed in ignition cable practice, all of which are familiar to those skilled in this art. The glass cord core takes the pull on the cable and inasmuch as it has such high tensile strength, it will be evident that my construction permits of the use of smaller copper wire than used previously, whereas previously it was necessary to use steel or similar material, but, in any event, a poor conductor, in order to reduce conductor size while retaining strength.

Furthermore, since continuous glass cord is stronger per unit cross sectional area than silk, for example, its use results in a smaller size conductor resulting in possible lower capacity per unit length. Low capacity is of appreciable advantage in ignition cable and due to generally

fixed cable size is best accomplished by using the smallest conductor practicable.

It is appreciated that a copper conductor is far superior to steel, for instance, so far as the spark produced at the spark plug is concerned, and while some contend that radio interference is reduced by employing a high resistance conductor such as steel, it is very evident that radio interference is not a problem where, as is the usual case in modern practice, the cable is installed in metal shielding harness.

In the accompanying drawing I have illustrated an embodiment of my invention on a greatly enlarged scale. 2 designates the continuous glass cord core of my cable. 4 designates the conductor. This conductor is copper and is composed of a plurality of strands stranded about the core. 6 is the insulation which is of any of the materials now used in practice and well known to all skilled in this art. 8 is the outer covering such as lacquered cotton braid. It will be appreciated that the glass cord core takes the longitudinal pull on the cable, and inasmuch as this core has the tensile strength of steel my cable possesses all of the advantages of a steel conductor cable so far as strength is concerned with none of the disadvantages due to poor conducting characteristics.

It is to be understood that changes may be made in the details of construction and arrangement of parts hereinabove described without departing from the spirit and scope of the invention.

What I claim is:

35 High tension ignition cable for internal combustion engines comprising in combination a continuous glass cord core, having a tensile strength substantially equivalent to that of steel, a copper conductor stranded about the core, and an insulating covering about the core and conductor assembly, the core and conductor being so assembled that rupturing of the conductor due to a longitudinal pull on the cable is prevented by the core.

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