

(No Model.)

W. VOGLER.
ELECTRIC CABLE.

No. 468,585.

Patented Feb. 9. 1892.

Fig. 1.

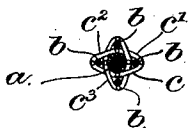


Fig. 2.

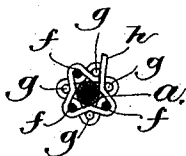
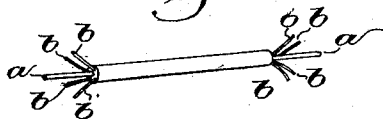


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM VOGLER, OF SOMERVILLE, MASSACHUSETTS.

ELECTRIC CABLE.

SPECIFICATION forming part of Letters Patent No. 468,585, dated February 9, 1892.

Application filed March 7, 1891. Serial No. 384,097. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM VOGLER, of Somerville, county of Middlesex, State of Massachusetts, have invented an Improvement in Electric Cables, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

Prior to my invention it has been customary to unite in one cable two conductors, the ends of which may be joined to constitute a loop or metallic circuit. In other instances a metallic central core has been insulated and thereafter a series of fine wires have been applied outside the insulated covering, the conductivity of which fine wires equaled the conductivity of the central core, and a second tubular jacket has been placed over all to form a cable. This latter form of cable possesses merit so long as it is not subjected to any short bends, for when bent the fine wires, laid side by side, come together at that side of the cable where the bend is the sharpest, and when the cable is straightened again the wire bulges outwardly and leaves a lump in the outer covering where the bend was the sharpest.

In my experiments to provide a more practical and servicable cable I have combined with an insulated central or main metallic core a series of parallel wires and have intermeshed or interwoven with them outside the central wire a series of fibrous threads which act to separate the outer series of wire each from the other and from the central wire, so that the outer wires, which may be used for a return-circuit, are really made as a part of a seamless tubular jacket or cover for the central wire. The wire and fibrous material are thereafter suitably insulated.

Figure 1 shows in cross-section a piece of cable embodying my invention, the wires being represented as uncovered at their ends; Fig. 2, a cross-section, on an enlarged scale, of one form of my novel cable; and Fig. 3 shows a portion of the covered table.

The main or central wire *a*, (see Fig. 1,) of any suitable size or form, has on it a covering of insulating material and is also surrounded by a series of fine wires *b*, represented as four in number, and these fine wires *b* are so in-

terlooped or interwoven with fibrous threads *c c' c² c³* as to form a seamless tubular jacket, in which the wires *b* are kept substantially parallel and each separated from the other by the fibrous threads, the wires entering into the formation of the said jacket.

A cable of the kind described may be bent more or less without displacing the wires *b* or causing them to bulge and make a lump in the covering.

The cable having the braided or interwoven jacket on it is thereafter covered with insulating material in any usual manner.

In Fig. 1 it is supposed that the jacket contains eight fibrous threads, and such a cable may be produced in a machine such as shown in my application, Serial No. 384,096, filed on the 7th of March, 1891, said machine being a sort of braiding-machine.

The cable represented in Fig. 2 is composed of a central insulated wire *a*, and the surrounding-jacket contains three return or other wires *f*, and the fibrous warps *g* are interposed between them, the wires *f* and warps *g* being made into a seamless tubular jacket by a weft-thread *h*.

The form of cable shown in Fig. 2 may be produced on a machine such as shown in United States Patent No. 16,248 to T. Nelson, which is a sort of circular loom adapted to weave a cover about a core.

I prefer that the outer series of wires shall constitute the return-wires; but, if desired, the central core may be utilized as the return-circuit, the ends of the wire being united at the extremities of the cable, and in the manufacture of the cable care will or should be taken to properly equalize or proportion the relative conductivity of the core and the surrounding connected wires.

The cable shown may be used for sending a current in but one and over each set of wires, their ends being then disconnected.

Having described my invention, I claim—

An electric cable composed of a central insulated metallic core and surrounding fibrous threads and two or more wires arranged outside the said core substantially parallel to each other and separated by said threads, the latter wires and fibrous threads being interlooped or interwoven together, substantially

as described, to constitute a seamless tubular
jacket containing both wire and fibrous
threads and surrounding the said central me-
tallic core, the relative conductivity of the
5 core and the surrounding wires being sub-
stantially equal, to operate substantially as
described.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

WILLIAM VOGLER.

Witnesses:

BERNICE J. NOYES,
EDWARD F. ALLEN.