

(No Model.)

F. A. C. PERRINE.
ELECTRIC CONDUCTOR.

No. 479,525.

Patented July 26, 1892.

Fig. 1.



Fig. 2.



Fig. 3.



Fig. 5.

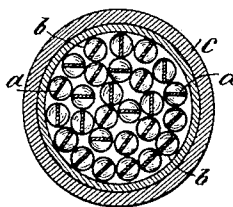


Fig. 4.



Attest:
Geo H. Bots
C. J. Sawyer

Inventor:
Fredric A. C. Perrine
by
Phieff. Munson Phelps
Attys:

UNITED STATES PATENT OFFICE.

FREDERIC A. C. PERRINE, OF TRENTON, NEW JERSEY, ASSIGNOR TO THE
JOHN A. ROEBLING'S SONS COMPANY, OF SAME PLACE.

ELECTRIC CONDUCTOR.

SPECIFICATION forming part of Letters Patent No. 479,525, dated July 26, 1892.

Application filed September 23, 1891. Serial No. 406,562. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC A. C. PERRINE, a citizen of the United States, residing at Trenton, county of Mercer, and State of New Jersey, have invented certain new and useful Improvements in Electric Conductors, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of the present invention is to improve the construction of insulated electric conductors and cables, consisting of a plurality of such conductors, by providing an insulated electric conductor having a low static capacity.

It is well known that dry air about a conductor reduces largely its static capacity, and many constructions have been devised having for their object the provision of air-spaces between conductors and their insulating-coverings. I provide a simple and cheap construction by which large air-spaces are provided about the conductor by the use of a conductor twisted to spiral form and so constructed that the covering is supported only on the exterior lines formed by the spirals.

In carrying out my invention any suitable method or means may be used for twisting the conductor and the spiral form may be given to it either at the same operation with making the strip or bar forming the conductor or subsequently. Any suitable insulating material may be used for the covering and applied in any desired manner. I prefer, however, to use paper, as it has been found well adapted to secure a low static capacity, and this will preferably be applied by winding a strip about the conductor either straight or spirally, as preferred.

In the accompanying drawings, illustrating my invention, Figure 1 is a perspective view, partly in section, of a partially-covered conductor. Fig. 2 is a cross-section of the same. Fig. 3 is a cross-section of a conductor of modified form. Fig. 4 is a view similar to Fig. 1, showing a further modification. Fig. 5 shows a cable formed of conductors insulated in accordance with my invention.

Referring to said drawings, *a* is the conductor, which, as shown in Figs. 1, 2, and 5,

consists of a flat strip of conducting material twisted to form a spiral, so that the covering *b* is supported by the edges of the strip which form the exterior lines of the spiral, the complete construction of covered conductor thus being of circular cross-section, with the conductor passing diametrically through it and having large air-spaces on either side within the covering.

In Fig. 3 I have shown a modified form of conductor consisting of a central core and thin fins projecting therefrom on opposite sides, so as to form a conductor of substantially flat form, which when twisted to spiral form supports the covering by the edges of the conductor substantially as in the construction previously described. The extent of surface in contact with the insulating-covering is thus further reduced and larger air-spaces provided. Substantially the same result may be attained by the use of a single fin on one side of the conductor, which will support the paper away from the core when the conductor is twisted into a spiral. It may be found desirable to use only a sufficient extent of surface upon the edges forming the exterior lines of the spiral to support the covering, in which case portions of the edges of either of the strips shown may be cut away, so as to leave the paper supported only at certain points on the exterior lines of the spiral instead of on continuous lines, as shown in Fig. 4.

In Fig. 5 the conductors are shown as grouped within a lead sheath *c* to form an ordinary lead-covered cable, the space between the insulated conductors and sheath being shown as unfilled, forming a dry-core cable. It will be understood, however, that these spaces may be filled with sealing material or the conductors grouped and insulated in any other suitable manner in forming a cable.

What I claim is—

1. The combination, with a single-strand conductor twisted to spiral form, of a covering of paper or other suitable material applied about the conductor and supported on the exterior lines of the spiral to form air-spaces between the conductor and covering, substantially as described.

2. The combination, with a flat conductor

twisted to spiral form, of a covering of paper
or other suitable material applied about the
conductor and supported on the edges of the
conductor to form air-spaces between the
5 conductor and covering, substantially as de-
scribed.

In testimony whereof I have hereunto set

my hand in the presence of two subscribing
witnesses.

FREDERIC A. C. PERRINE.

Witnesses:

GEORGIANA T. FREAS,
FRANK V. BRIGGS.