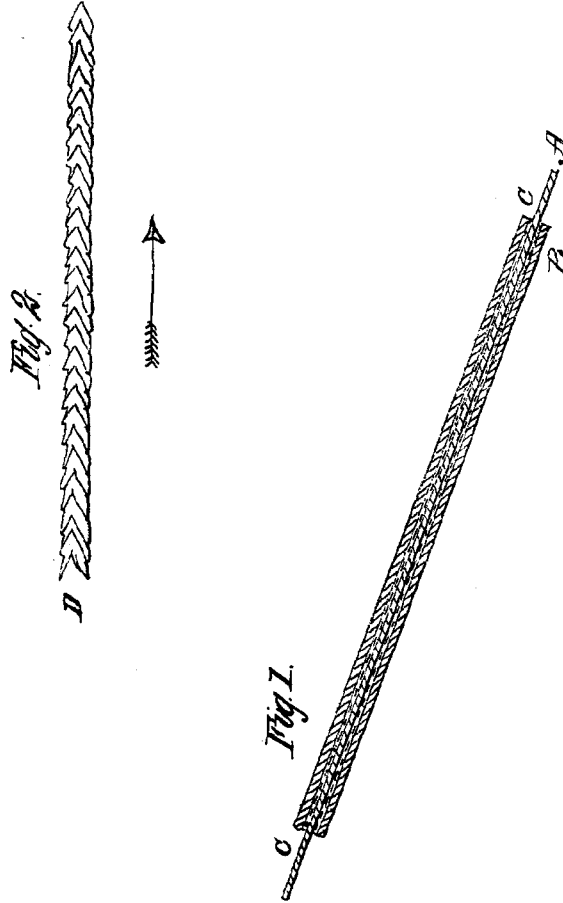


E. D. ROSENCRANTZ.
Telegraph Wire.

No. 27,475.

Patented March 13, 1860.



Witnesses
John F. Clark
Edw. Brown

Inventor.
E. D. Rosenkrantz

UNITED STATES PATENT OFFICE.

E. D. ROSENCRANTZ, OF NEW YORK, N. Y.

IMPROVED TELEGRAPH-WIRE.

Specification forming part of Letters Patent No. 27,475, dated March 13, 1860.

To all whom it may concern:

Be it known that I, EPHRAIM D. ROSENCRANTZ, of the city and county of New York, and State of New York, have invented and discovered certain new and useful Improvements in the Construction of and Placing Telegraph-Wires; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification.

In conducting electric and magnetic currents it has been found that while iron gives six hundred parts of a thousand, copper, three thousand eight hundred and thirty-eight, silver will give five thousand one hundred and fifty-two parts, thus rendering it an important medium for transmission of the fluid in telegraphing purposes.

My improvements in telegraph-wires consist in the employment of a compound wire, such as a silver central wire and an outside casing of copper, or any other metal as a center having a greater conductive power than the outside, the two metals united by heat previous to being wire-drawn, so that strength is given to the best conductor without a material increase of cost.

By my improvement in employing the better conductor as the center of the compound wire an increase of conducting property is given by said center, as it tends to centralize the current and thus prevent the dissipation of it in long circuits.

In drawing wire a direction is given the fiber or lamina so that they overlap in conical sections, as shown in Fig. 2. In placing the wires

of a telegraph I have taken advantage of this peculiarity, and by selecting the rear end of the wire D in a coil as my connection end, so that the current through it shall take the same direction that the wire did in passing through the draw-plate, the current may be thus kept more to the center of the wire. The dart indicates the direction of the wire and current.

To enable others skilled in the art to make and use my improved wire, I will describe it as follows: A hollow ingot of copper is first prepared, the silver at melting heat is poured into the heated ingot of copper. After cooling it is subjected to the ordinary process of wire-drawing, by which the copper and silver center are elongated, a perfect and complete union of the metals having taken place.

A represents the silver center, and B the outside copper of the compound metal, (shown by dotted line at *c c*.)

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The employment of a compound wire for telegraphs consisting of a silver center and outside of copper, or other equivalent metal, in which the center is the best conductor, for the purposes set forth.

2. In placing telegraph-wires, the selection of the end leaving the draw-plate, for the purposes substantially as set forth.

In testimony whereof I have signed my name before two witnesses.

E. D. ROSENCRANTZ.

Witnesses:

JOHN F. CLARK,
EDM. F. BROWN.