J. T. SHUSTER.

Telegraph Conductor.

No. 213,458. Patented Mar. 18, 1879.

Fig. 1

Fig. 2

Fig. 3

WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN T. SHUSTER, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN TELEGRAPH-CONDUCTORS.

Specification forming part of Letters Patent No. **213,458**, dated March 18, 1879; application filed June 18, 1878.

To all whom it may concern:

Be it known that I, JOHN T. SHUSTER, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Telegraph-Cables; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a perspective of a telegraph-wire having the asbestus fiber wound or wrapped thereon. Fig. 2 is a perspective of the same with the asbestus braided thereon, and Fig. 3 is a perspective of a cluster of wires having a braided asbestus covering.

My invention has for its object to provide an indestructible fire-proof telegraph wire or cable—*i. e.*, a wire or cable which can be placed, without risk of deterioration, in the ground, or in any other position in which moisture or other causes soon work destruction of cables as ordinarily constructed, and which at the same time shall be perfectly insulated and proof against fire from external causes, and from heat generated internally by the passage of electricity through the conducting-wires.

My invention consists of a wire or number of wires embedded in or covered by asbestus or amianthus, forming a telegraph wire or cable.

Referring to the accompanying drawings, Fig. 1 indicates a single wire, A, covered with asbestus or amianthus, B, applied in any suitable manner, as by wrapping or winding yarn formed of asbestus or amianthus fiber.

Fig. 3 shows a cable composed of a series of wires, C C C, embedded in a covering of amianthus or asbestus fiber, said covering being applied by braiding on the wires yarn composed of asbestus or amianthus fiber.

If desired, the single wire may have its covering applied by braiding the asbestus or amianthus yarn upon it; or the cable may have said fiber wound upon it in the manner of the single wire; or any equivalent method of applying the covering to either the single or multiple wires may be employed.

To render the wire or cable water-proof, a waterproofing composition or material of any suitable kind may be applied in any appropriate manner.

A telegraph wire or cable thus constructed may be laid in the ground or in fresh or salt water without danger of deterioration, the asbestus being indestructible and not susceptible to waste or decay. Such wire or cable is also perfectly insulated, the asbestus or amianthus covering being a non-conductor. It is further proof against fire from external conflagrations, such as the burning of buildings, &c., above or in front of which the wire or cable may pass, and also against danger of fire produced by the electric current in cases where two wires come nearly or quite in contact, or where a wire is broken and the broken ends are at such a distance apart as to produce an electric spark. So, too, even where there is no break or imperfection in the wire, it has been found that, where the latter is in use for a considerable time and highly or strongly charged with electricity, it becomes so heated as to ignite canvas or other like inflammable covering heretofore employed. This source of loss and danger is avoided by the employment of asbestus or amianthus as a covering, which will not take fire or be consumed under heat of any intensity.

To obtain perfect insulation where the wire is wrapped or wound with the asbestus covering, it should be rewrapped or rewound a second time, and in an opposite direction from the first wrapping or winding, as shown at *a* in Fig. 1, where the outer reverse rewound covering is illustrated.

What I claim as my invention is—

1. As a new article of manufacture, a telegraph wire or cable composed of a metallic wire or wires embedded in or covered by asbestus or amianthus, the same being in the form of yarn or strand, and wound or braided upon the surface of the wire or cable.

2. The combination, with the wire or cable, of the asbestus insulator, composed of yarn braided upon said wire or cable, as described.

In testimony that I claim the foregoing I have hereunto set my hand.

JOHN T. SHUSTER.

Witnesses:

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CHARLES A. GALLAGHER.