(No Model.) 2 Sheets—Sheet 1.

W. R. PATTERSON.

TELEGRAPH CABLE.

No. 382,829. Patented May 15, 1888.

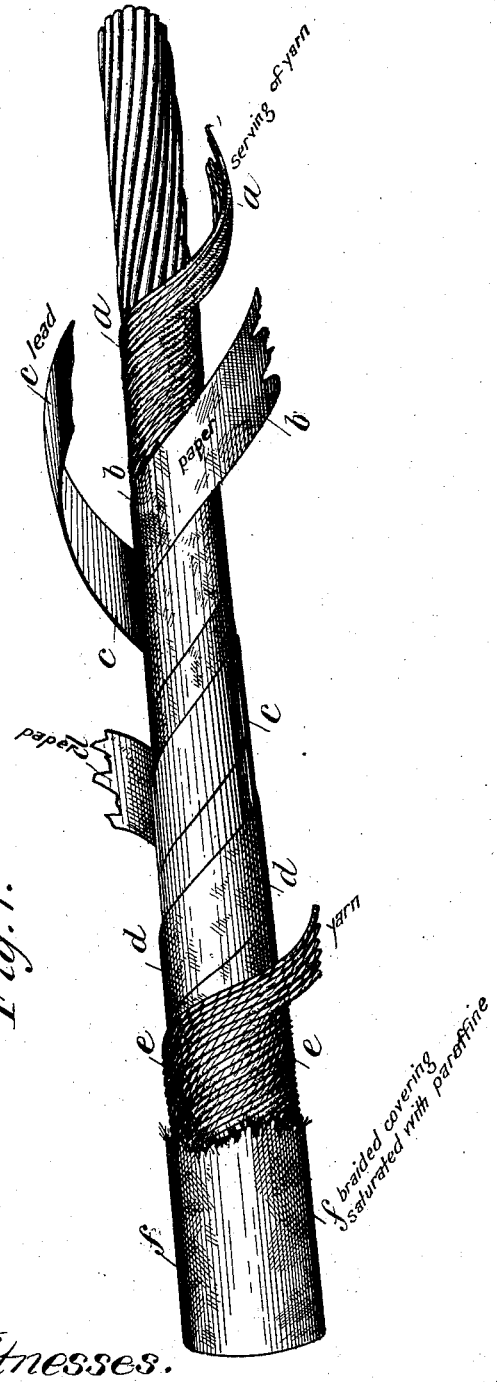

Fig. 1.

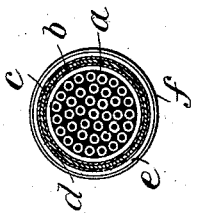

Fig. 2.

Witnesses.
Sam't B. Dover.
E. W. McCulloch.

Inventor:
William R. Patterson.
By Geo. P. Barton
Attorney.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

W. R. PATTERSON.

TELEGRAPH CABLE.

No. 382,829. Patented May 15, 1888.

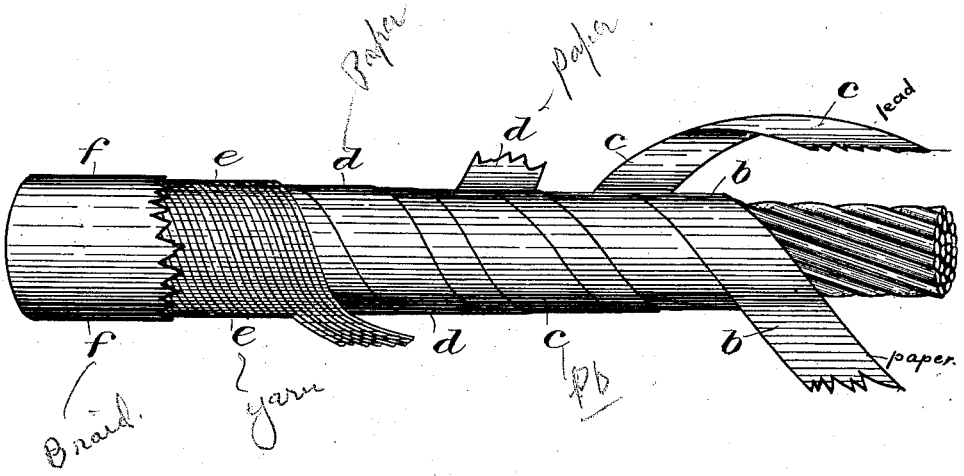

Fig. 3.

Witnesses:
Chas. G. Hawley.
L. M. Page.

Inventor:
William R. Patterson
By George P. Barton
Attorney.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM R. PATTERSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN ELECTRIC COMPANY, OF SAME PLACE.

TELEGRAPH-CABLE.

SPECIFICATION forming part of Letters Patent No. 382,829, dated May 15, 1888.

Application filed February 2, 1886. Serial No. 190,651. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. PATTERSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Telegraph-Cables, (Case 51,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention herein relates to the manufacture of electric conductors, and is an improvement upon the conductor described and claimed in my Reissued Letters Patent No. 10,563, granted February 24, 1885.

In my pending application, Serial No. 160,453, filed March 28, 1885, I have described and claimed a machine for winding a serving of lead tape and paper upon a telegraph-cable.

My invention herein is designed to render cables more durable, of higher insulation, and of better appearance than heretofore; and it consists in a layer of dry-paper tape either outside or inside the lead tape, or preferably inside and outside the lead tape, whereby the shellac or paint from the lead tape is absorbed, the cutting or puncturing of the lead tape prevented, and the cable rendered smooth and even.

In the drawings, Figure 1 is a detail elevation of a telegraph-cable embodying my invention. Fig. 2 is a transverse section thereof. Fig. 3 is a view showing the paper tape wound directly upon the core of insulated conductors.

Any desired number of conductors may be included in the same cable. These conductors are twisted together into cable form and wound, preferably, with a serving of yarn, *a*, in the usual manner. I now dry the cable thus formed in an oven heated to about 220° Fahrenheit, and while the cable is thus heated I immerse it in a vat of melted paraffine heated, preferably, to a temperature of 300°. All moisture is thus expelled and the interstices and pores in the covering and among the conductors are filled with paraffine. I then preferably compress and polish the core in the well-known way. I now wind about the serving *a*, preferably at one operation and by the machine before referred to, the paper tape *b*, the lead tape *c*, the paper tape *d*, and, finally, the yarn-serving *e*, in the order mentioned, as shown. I then preferably braid about the whole the braided covering *f*. If this braiding is to be exposed to view, I preferably paraffine, compress, and polish again in the well-known way. If, however, the cable is to be concealed behind the switch-boards, or otherwise, I saturate the outside braiding with some fire-proof paint.

The edges of the lead tape are made to overlap, and as it is wound on shellac is applied so as to make the joints water-tight. The paper covering *b* serves as a bed for the lead tape and prevents any knots in the yarn or any irregularities or imperfections in the first serving from cutting through or injuring the lead tape. This layer of paper, in addition to affording a smooth bed for the lead tape, serves to absorb any excess of shellac that may be taken up by the edges of the lead tape. The edges of the paper may be lapped over each other or may be laid with edges abutting. The outside tape, *d*, is of great advantage in protecting the lead tape from knots or irregularities in the serving *e*, especially when the cable is paraffined and polished on the outside.

In Fig. 3 I have omitted the serving *a* shown in Fig. 1. Such a serving is, however, usually employed in cables having insulated conductors bunched together. My invention, however, is not in any way limited by the manner of making the core.

By the use of my invention as above described a light, flexible, and durable cable of high insulation is formed, which is better for office use than any with which I am familiar.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A telegraph-cable covered with a winding of lead tape with overlapping edges, shellacked as described, wound upon a bed or covering of dry-paper tape, a covering of paper tape outside the lead tape, and an outer serving of yarn, substantially as shown and described.

2. A telegraph-cable consisting of a flexible core of one or more conductors, a winding of lead tape with overlapping edges, the overlapping portions of the lead tape being cemented together by a water-proof cement like shellac, a winding of paper tape outside the lead, and an outer serving of yarn wound upon the paper, the lead tape being separated and

protected from the yarn by said paper tape, substantially as and for the purpose specified.

3. The combination, in a telegraph-cable, of a winding of lead tape with shellacked and overlapping edges, a bed or winding of paper tape under the lead tape for absorbing the excess of shellac, the core of conductors, and an outer serving, substantially as and for the purpose specified.

In witness whereof I hereunto subscribe my name this 20th day of January, A. D. 1886.

WILLIAM R. PATTERSON.

Witnesses:
GEORGE P. BARTON,
F. H. MCCULLOCH.