(No Model.)

W. R. PATTERSON.

TELEGRAPH CABLE.

No. 398,441. Patented Feb. 26, 1889.

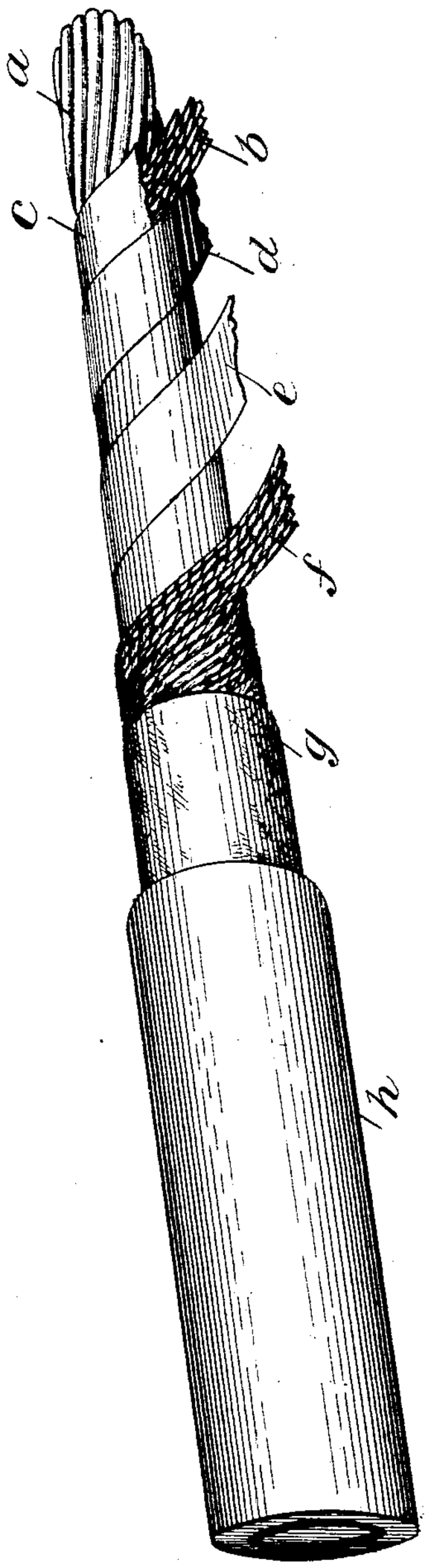

Fig. 1.

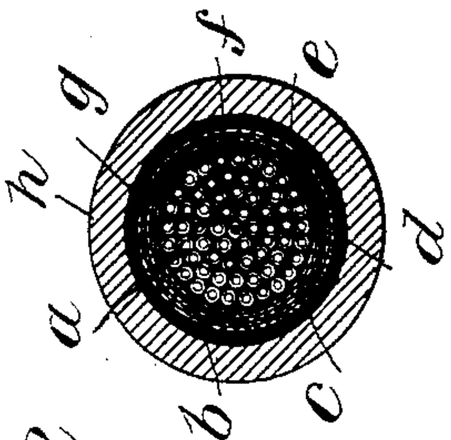

Fig. 2.

Witnesses.
Saml. B. Dover.
T. H. McCulloch

Inventor;
William R. Patterson
by George P. Barton
Attorney.

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. 398,441, dated February 26, 1889.

Application filed May 24, 1886. Serial No. 203,117. (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 59,) 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 relates to telegraph-cables in which the core is protected by a lead pipe; and my invention consists in the combination, with a core, of an impervious winding thereon, and a filling of coal-tar, paint, or similar material between the said impervious serving and the lead pipe. The core may consist of any suitable number of conductors insulated by fibrous material, like jute or cotton, and saturated, preferably, with some insulating material, like paraffine. The serving I preferably make of cotton or jute yarn and paper and lead tape wound thereon, as hereinafter described. Any serving that will not be acted upon by the paraffine or other insulating material and that will be impervious to the filling of coal-tar, paint, or other substance may be used. If the core of conductors be saturated with some compound not affected by sulphur—for example, a compound of rosin and shellac instead of paraffine—vulcanized tape may be used in place of the lead tape. The filling between the serving and the lead pipe is designed to prevent water from penetrating longitudinally into the pipe in case the pipe should be punctured. In the process of manufacture any flaws that may exist in the pipe may be detected by the filling oozing out, which is introduced in a liquid state and usually under pressure. This filling may or may not be an insulating substance. It should be insoluble in water, and of such character that it will not penetrate the serving and impair the insulation of the conductors. I prefer to use a filling material that does not become hard and brittle, in order that the flexibility of the cable may remain unimpaired. Gas-tar, crude paraffine, or asphalt I have found suitable materials.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a cable embodying my improvement. Fig. 2 is a transverse sectional view thereof.

The core *a* consists of a number of wires separately insulated by a fibrous material saturated with paraffine. The impervious covering used upon the core is made up, preferably, of, first, a winding of yarn, *b;* next, a winding of dry paper, *c*, which forms a smooth bed for the third winding of lead tape, *d*. Upon the lead tape I wind a layer of dry paper, *e*, and, finally, upon this paper I wind a serving of strong yarn, *f*. The filling, *g*, which is of some cheap material, like gas-tar, asphalt, or paint, may be forced in after the core is drawn into the lead pipe *h;* or this filling may be introduced with the core as the pipe is being formed over the whole. In case vulcanized tape be used in place of the lead tape the paper windings may be omitted, if desired. In case the fabric of the vulcanized tape be of sufficient body and strength it may be wound as a serving directly upon the core and be left without any outer covering or serving, *f*.

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

1. The combination, with a core of insulated conductors, of an impervious serving wound thereon, the outside lead pipe, and the filling of coal-tar, or its equivalent, between the pipe and serving, substantially as described.

2. The combination, with the core *a* of separately-insulated electrical conductors, of a serving wound thereon and a winding of lead tape, *d*, a serving wound upon the lead tape, the filling *g*, and the lead pipe *h*, substantially as described.

In witness whereof I hereunto subscribe my name this 15th day of May, A. D. 1886.

WILLIAM R. PATTERSON.

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