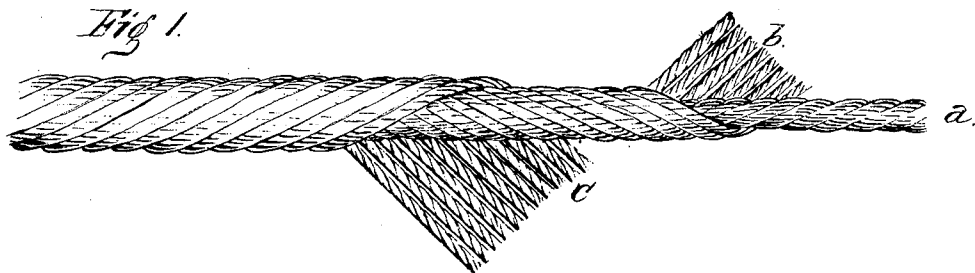


J. R. FRICKE
LIGHTNING ROD.

No. 112,137.

Patented Feb. 28, 1871.



witness: *L. Lee*
witness: *A. Hatterson*

Joseph R. Fricke

United States Patent Office.

JOSEPH R. FRICKE, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 112,137, dated February 28, 1871.

IMPROVEMENT IN LIGHTNING-RODS.

The Schedule referred to in these Letters Patent and making part of the same.

I, JOSEPH R. FRICKE, of Pittsburg, Pennsylvania, have invented certain Improvements in Copper-Cable Lightning-Rods, of which the following is a specification.

Nature and Objects of the Invention.

The object of my invention is to produce a "copper-cable lightning-rod" of greater flexibility, and of superior conducting capacity, than those heretofore made of equal mass of material, and also to enable me to conveniently increase the size and conducting power of a cable-conductor by adding to one that is already made one or more additional layers of wire or strands of wire.

The usual mode of making copper-cable lightning-rods has been to unite a number of strands of copper-wire, as a "cable-laid" rope is made. This form of manufacture necessarily gives very great rigidity to the copper-cable, and makes it less convenient to coil for transportation, or to turn neatly at the angles of buildings to which it is applied.

To obviate these objections, and at the same time produce a cable of better and more merchantable appearance, and, as I believe, of better conducting power, I make my improved cable as follows:

Around a central wire, strand of wire, or wire-rope, I wind a number of parallel wires or strands of wire, and around these another series, and again another, until I have the desired thickness.

These succeeding layers may be wound in the same or in alternate directions at the same or different angles to the axis of the core or central strand, and will give the desired flexibility and smoothness of appearance, and a conducting power equal to the best old-style cables of equal weight and surface.

By reference to the drawing the peculiar construction of my improved cable will be fully understood.

Figure 1 is a compound cable made on my im-

proved plan, with two layers of strands surrounding the central strands or core-rope *a*.

b is the first layer surrounding it.

c is the second layer.

There may be either a greater or lesser number of layers, according to the conducting capacity desired.

I am fully aware that the wires of submarine telegraphic cables have been "laid" somewhat in the manner described, but with layers of insulating material between them; such a cable would, therefore, be unfitted for an efficient lightning-conductor.

By using, as my invention enables me to do, strands of three or four (say No. 18) copper-wire in the formation of my improved cable, I secure the advantage of a very fine appearance, greater flexibility, and a greater conducting surface in large cables than can be obtained with the same weight of metal if larger wires or larger strands are used, and the cable is laid in the usual manner.

It will be readily perceived by reference to the drawing that I am enabled to make cables of any size required from this medium-sized wire, and thus I avoid the necessity of using wires that are too large to be flexible, or too small to resist the tendency to fuse under powerful discharges of electricity.

A further important economic advantage is, that the machinery required to make any size of cable need only be adapted to work one size of wire.

Having thus fully described my improvement, its advantages, and wherein it differs from other similar constructions,

I claim—

As an improved article of manufacture, a copper-cable lightning-rod or conductor, when constructed as herein described and shown.

Witnesses:

L. KLEE,

A. PATTERSON.

JOSEPH R. FRICKE.