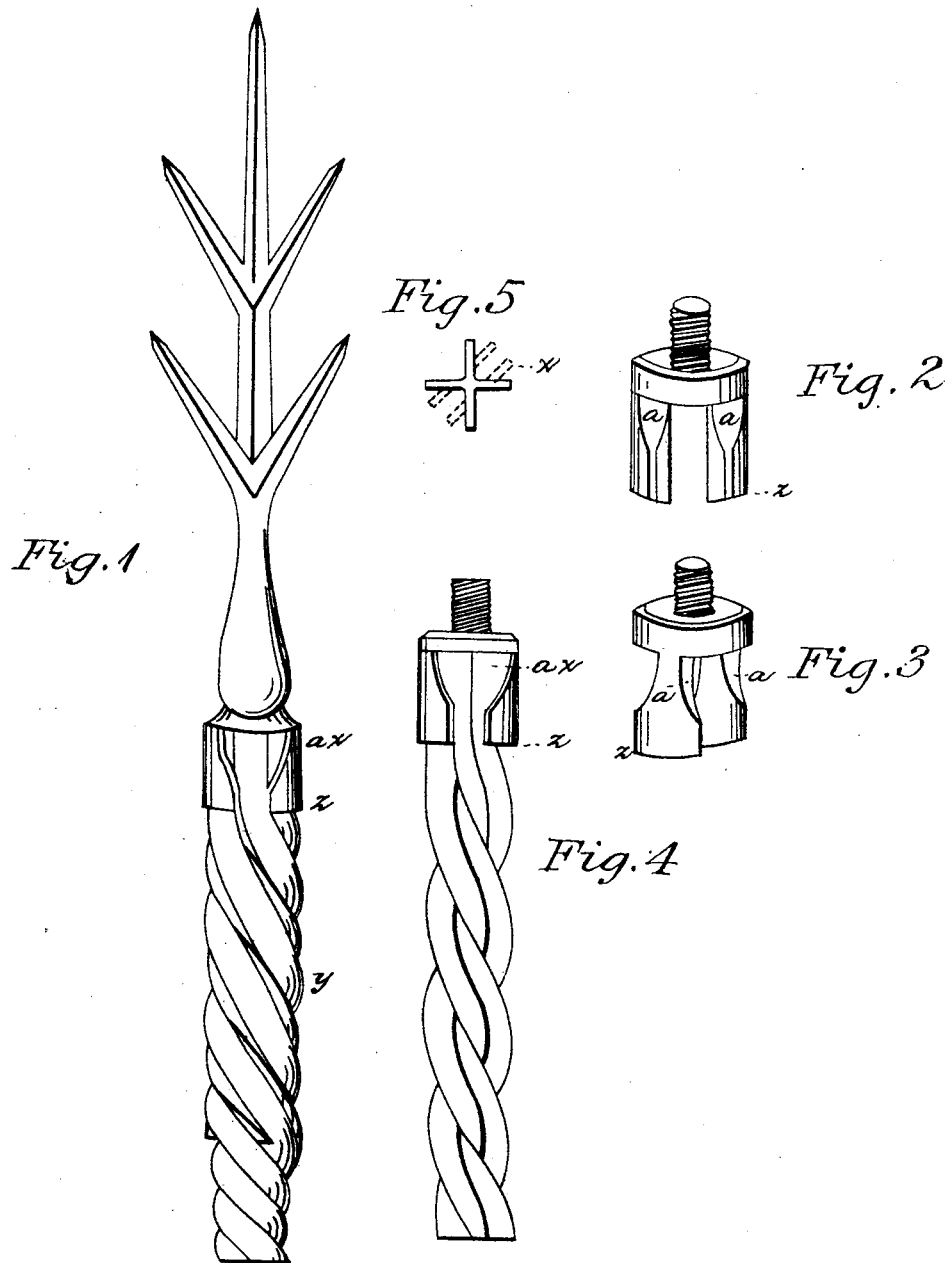


J. R. FRICKE.  
Lightning Rod.

No. 111,052.

Patented Jan. 17, 1871.



Witnesses:  
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JOSEPH R. FRICKE, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 111,052, dated January 17, 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 Lightning-Rods, of which the following is a specification.

### *Nature and Objects of the Invention.*

The first part of my invention relates to a mode of stiffening "copper-wire cable" lightning-rods, so that they will be sustained in upright projection above their highest point of attachment to the building to which they may be applied, and consists in inserting a suitable spiral-flanged copper core or rod in that portion of the cable that is to be stiffened.

The second part of my invention relates to the mode of attaching or coupling the usual "points" to the core or rod, and consists in making the coupling-screw with a dovetail recess in its lower part, into which recess the end of the spiral-flanged rod or core is inserted, and locked by bending the said spiral-flanged rod into the dovetailed recesses on the coupling.

### *Description of the Accompanying Drawing.*

Figure 1 is a perspective view of a short piece of a wire cable rod mounted on a stiffening core, and embodying the other part of my invention in the mode of attaching the point.

Figure 2 represents the coupling-screw, separate from all other attachments.

Figure 3 represents an oblique perspective view of the same, more clearly showing the dovetail.

Figure 4 represents a short piece of a flanged spiral rod or core to which the coupling-screw has been attached.

Figure 5 is a section of the end of the core, showing by the full lines its original shape, and by the dotted lines  $x$  the position of the spiral flanges, when bent down, as at  $a$ , after being inserted in the coupling-piece.

Like letters refer to the same parts in the drawing.

$o$  represents the cable without any stiffening;  
 $y$  represents a spirally-grooved or flanged rod, which forms the stiffening core;

$z$  is the dovetail on the coupling-piece; and

$a$  represents the recess, into which the flanges are bent so as to form a counter-dovetail, and thus lock

the coupling-piece, figs. 2 and 3, to the core-rod, as shown at  $a$ , figs 1 and 4.

In using the first part of my invention I take a four-stranded copper-wire cable of suitable dimensions and conducting power, and a four-flanged spiral copper rod of sufficient length to reach a foot or two below the highest attachment, and to extend the required height above the building; and I connect this stiffening rod to the cable by inserting it in the center of the cable, that is, by winding the separate strands of the cable in the grooves of the rod and for the entire length of the rod. I secure the ends of the strands of the cable to the core by a suitable copper wire binding around all.

My improved rod is attached to the bindings by any convenient form of insulator.

By my improvement, whatever of superiority is in the cable conductor over a solid rod in sections is secured throughout its entire length.

I am aware that other means of extending and stiffening the points of cable conductors above the buildings have been employed. It has been the custom to insert the cable in iron tubes; and also to terminate it below the top of the building and couple it with a solid rod, that would project above the attachments; but these plans are objectionable as being thought to injuriously affect the conducting power of the cable as a whole.

The advantage of my improved mode of attaching the coupling-screw to the spiral-flanged rod is in the facility with which a secure connection can thus be made.

### *Claims.*

Having fully described my improvement,

I claim as my invention—

1. The combination, with a copper-wire cable lightning-rod, of a spirally-flanged core or stiffener, the whole arranged and constructed substantially as herein set forth.

2. The dovetail connection between the end of the spiral rod and the coupling-screw, when constructed as herein described and shown.

Witnesses:

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