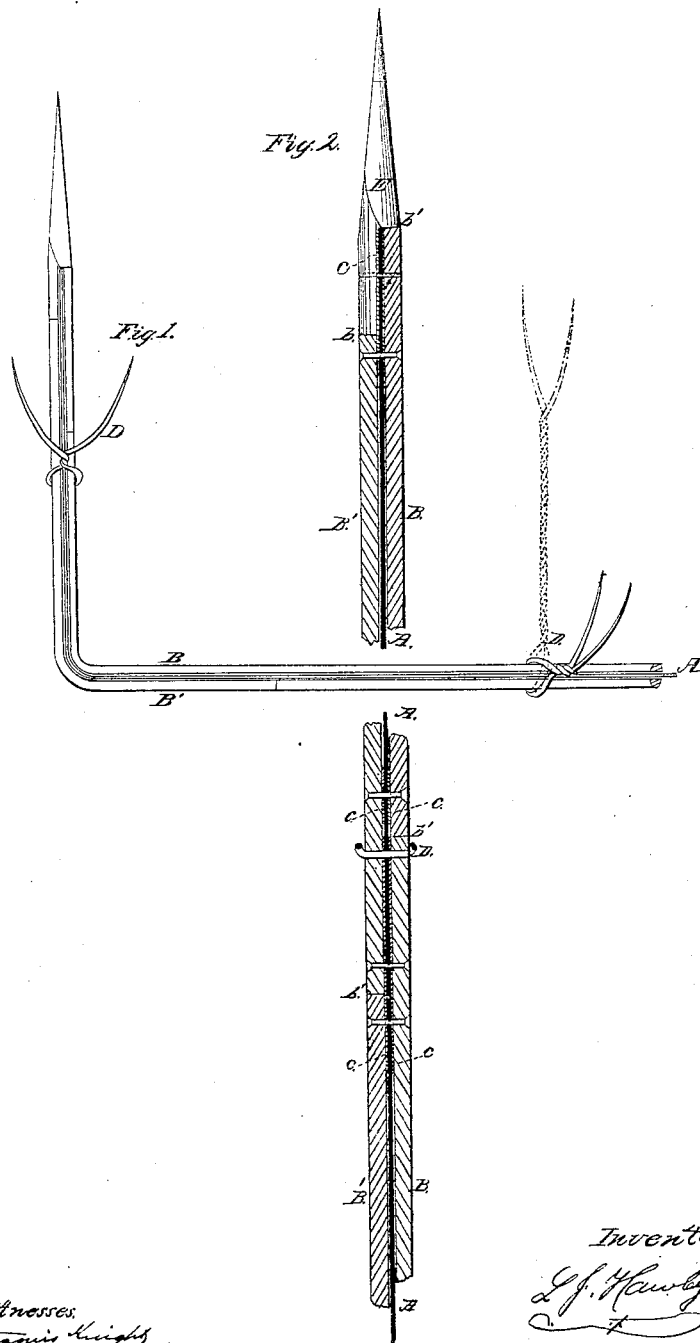


L. J. HAWLEY.
Lightning Rod.

No. 52,411.

Patented Feb. 6, 1866.



Witnesses,
Octavius Knight
Edward H. Knight,

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UNITED STATES PATENT OFFICE.

LOUIS J. HAWLEY, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN LIGHTNING-RODS.

Specification forming part of Letters Patent No. **52,411**, dated February 6, 1866.

To all whom it may concern:

Be it known that I, LOUIS J. HAWLEY, of the city and county of Baltimore, and State of Maryland, have made new and useful Improvements in Lightning-Rods; and I do hereby declare the following to be a full, clear, and exact description of the nature, construction, and operation of the same, sufficient to enable one skilled in the art to which it appertains to construct and use the same, reference being had to the accompanying drawings, which are made part of this specification, and in which—

Figure 1 is an elevation. Fig. 2 is a vertical central section.

The invention consists in the arrangement and mode of attachment of the metals of which the rod is composed, and in utilizing the ends of the wires whereby the metals are tied together as supplementary conductors distributed along the length of the rod.

The rod is made in sections of any suitable length—say ten feet—and consists of a central copper strip, A, of that length inclosed between two pieces of half-round or half-oval iron, B B'. The inclosing iron rods B B' are so prolonged, one at each end, as to make a splice-joint, (shown at *b b'*,) where one section is attached by a lap-joint to the next section, whether it be the point or another section of the same character as itself. This lap may extend about three inches, more or less.

The two iron bars and their inclosed strip are fastened together by rivets C C, and by wires D D, which are passed through holes in the metal rods and strips, and, being twisted, are afterward prolonged and pointed, projecting from the rod so as to act as conductors to increase the protective power of the rod.

Between the iron and the copper is interposed a layer of zinc at all the places where by rivet C or wire D the parts are joined, the intention of which is to separate and expose the surfaces of the bars and induce a galvanic action in the rod by placing the best conductor in the center supported by side conductors. By this arrangement the central strip may conduct a positive charge, while the side strips may discharge a negative or assist in diffusing a heavy charge of either, the combined rod affording a very large amount of conducting-surface within the limited diameter and equal at the splices to any other part, while the zinc at the connections preserves the rod in good condition by the galvanic action induced.

The point E, of plated copper, is lapped by its shank upon the upper section of the rod and attached thereto, and the rod is secured in any suitable manner to the building.

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

1. The lightning-rod constructed as described and represented, consisting of a central copper strip inclosed between lap-joint iron side pieces, the points of connection being provided with interposed zinc plates.
2. The supplementary conductor formed by the points of the prolonged wire band D D, as described and represented.

The above specification of my improvement in lightning-rods signed this 28th day of August, 1865.

L. J. HAWLEY.

Witnesses:

ALEX. A. C. KLAUCKE,
OCTAVIUS KNIGHT.