

O. PRESTON.

Improvement in Lightning Rods.

No. 120,457.

Patented Oct. 31, 1871.

Fig. 1.

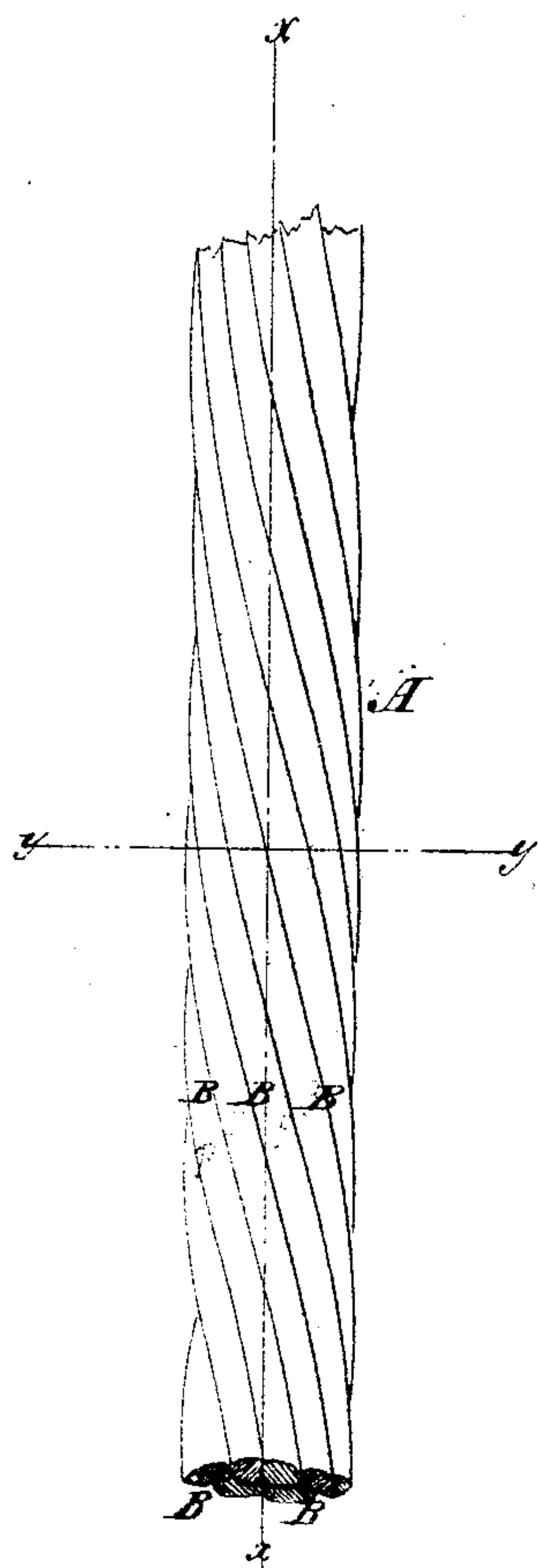


Fig. 2.

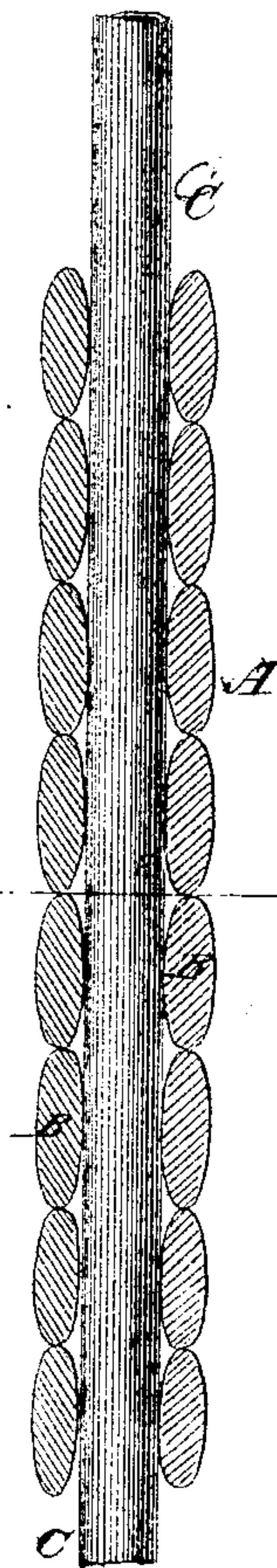


Fig. 3.

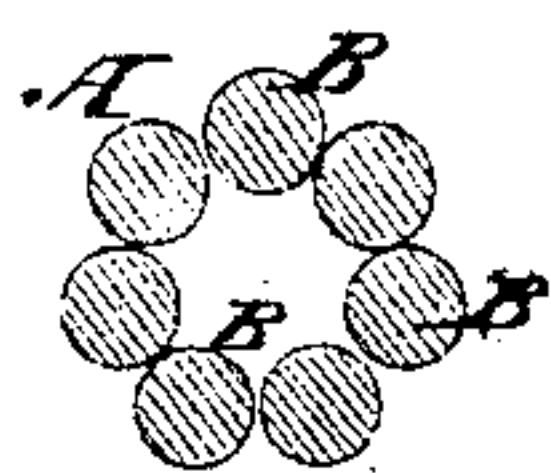
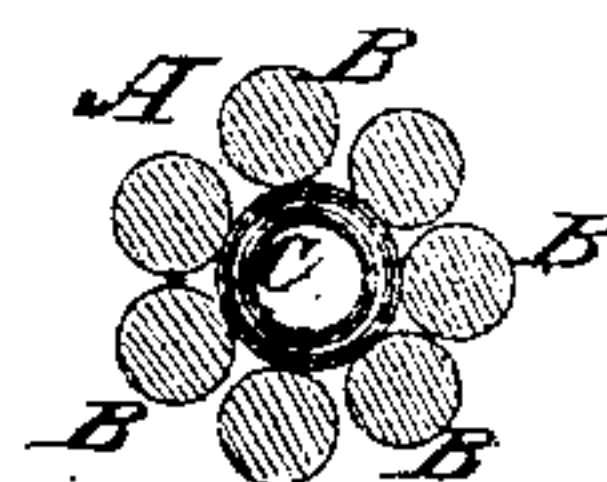


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

OTHNIEL PRESTON, OF SOUTH DANSVILLE, NEW YORK.

IMPROVEMENT IN LIGHTNING-CONDUCTORS.

Specification forming part of Letters Patent No. 120,457 dated October 31, 1871.

To all whom it may concern:

Be it known that I, OTHNIEL PRESTON, of South Dansville, in the county of Steuben and State of New York, have invented a new and useful Improvement in Lightning-Conductors; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to new and useful improvements in lightning-conductors, whereby they are made more effective than they have hitherto been; and it consists in making the conductor tubular composed of a series of wires twisted together, and either with or without an inclosed metallic tube, the construction of the conductor being as hereinafter more fully described.

In the accompanying drawing, Figure 1 represents a section of a conductor constructed of wires twisted together forming a tube. Fig. 2 is a longitudinal section of Fig. 1 on the line *x x*, showing the wires surrounding a metallic tube. Fig. 3 is a cross-section of Fig. 1 taken on the line *y y*. Fig. 4 is a cross-section of Fig. 2 on the line *z z*.

Similar letters of reference indicate corresponding parts.

A represents the conductor; B, the wires; C, the interior metallic tube. The wires B are twisted together either around a solid core which is removed, or a metallic tube, C, which latter is allowed to remain; in either case a tubular conductor is formed which greatly increases the extent of surface of the conductor.

I am aware that it is contended that the conductivity of a lightning-rod is according to the area of its cross-section. My own experience, which has not been very limited in the business of manufacturing and putting up lightning-conductors, leads me to doubt the entire correctness of that theory. In practice I have found that

surface has much to do with the conductivity of lightning-rods. Conductors composed of broad straps of metal having great superficial area and but slight cross-sectional area have been employed with good results. I am aware that, with a view of increasing the superficial area, conductors have been made of woven wire, and also of braided or plaited wire in the tubular form.

I disclaim all conductors constructed by either weaving, braiding, or plaiting the wire.

My lightning-conductor is made of wires twisted together around a core or tube, and is in outward form the same as a wire rope and continuous from end to end, and may be of any required length. In twisting the wires around a solid core, the core is withdrawn, which leaves the conductor tubular. If twisted around a metallic tube the tube is allowed to remain, which also leaves the conductor tubular. In either case the conductor is a tube composed of wires twisted together and having the strength and flexibility of a wire rope when made without the interior tube, but which is, of course, more stiff and rigid when made with the tube.

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

1. The tubular lightning-conductor A, constructed of wires B twisted together, substantially as shown and described.

2. A lightning-conductor composed of wires B twisted together in the tubular form inclosing a metallic tube, C, substantially as shown and described.

3. A tubular lightning-conductor, constructed of wires twisted together either with or without an inclosed metallic tube.

The above specification of my invention signed by me this 2d day of August, 1871.

OTHNIEL PRESTON.

Witnesses:

GEORGE W. MABEE,
T. B. MOSHER.

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