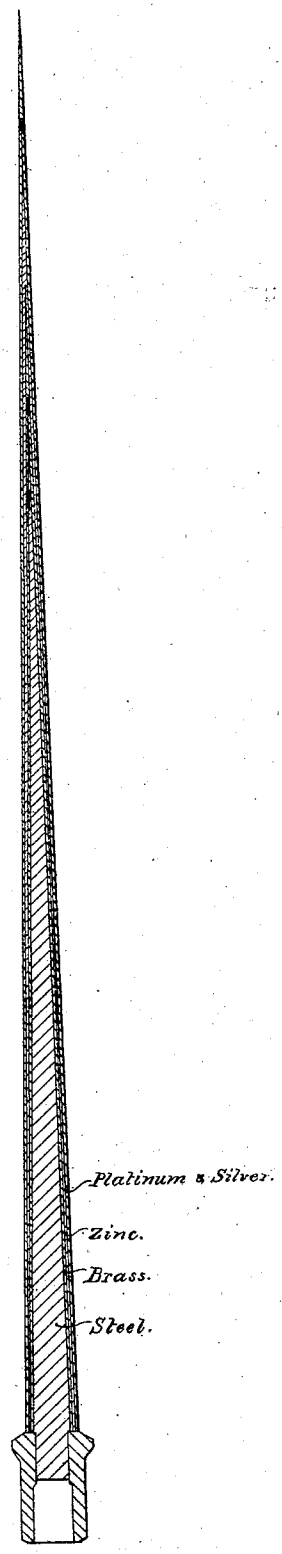
J. Spratt.

Lightning Rod.

No. 8,930. Patented May 4, 1852.



UNITED STATES PATENT OFFICE.

JAMES SPRATT, OF CINCINNATI, OHIO.

IMPROVEMENT IN LIGHTNING-RODS.

Specification forming part of Letters Patent No. **8,930**, dated May 4, 1852.

To all whom it may concern:

Be it known that I, JAMES SPRATT, of Cincinnati, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in the Points of Lightning-Rods, of which the following is a specification.

The object of my improvements is to provide against the destruction of lightning-rod points by melting, as they not unfrequently do, from the sudden overcharge of the electric current.

Having, in the course of several years' experience in the manufacture and setting up of lightning-rods, frequently observed instances of destruction of the points by lightning, and recollecting that some time previous a point formed of successive layers of iron, brass, and tin, which I had set up in an isolated position for experiment, being soon after struck by lightning, the outer covering of tin melted off, leaving the brass entirely unaffected; and subsequently, during the same season, receiving another shock, the brass was melted off from the iron, which, in its turn, was also left entire, I was led to the plan of forming my points of a number of metals incased one within another, the most fusible to the outside. The effect of this arrangement is that the fusing action of an excessive shock of lightning is confined to the outer metallic layer or coating, which in flowing may be said to carry the electric fluid with it, or rather perhaps it receives in the act of melting an accession to its conducting powers; but whatever may be the true scientific solution of the phenomenon, the fact is demonstrated by experience that after the melting of one layer the next below it is left unscathed and perfect. Thus, by means of a sufficient number of layers—say from three to four—a point may be made capable of surviving as many extraordinary shocks as any one point is likely to encounter, at least during the existence of any kind of rod such as now in use.

The number of layers may vary from two to three, or upward, according to the desired completeness of the instrument, but the following I have found suitable: The innermost point may be of steel, which may be incased in brass, the brass in zinc, and, lastly, the zinc may be coated with the alloy of platinum, silver, &c., formerly patented by me, which is a superior conducting medium, and capable of receiving and preserving a high finish. Each layer should be about from one-sixteenth to one-eighth of an inch thick, and may be cast onto the preceding one.

In the annexed drawings the rod is shown in section, manufactured as above described.

Having thus fully described the nature of my improvement, what I claim therein as new, and desire to secure by Letters Patent, is—

The formation of the point of a lightning-rod, of three or more metals, incased one within another, the most fusible to the outside, in order to prevent the destruction of the entire point by melting from an overcharge of the electric fluid.

In testimony whereof I have hereunto set my hand before two subscribing witnesses.

JAMES SPRATT.

Witnesses:

GEO. H. KNIGHT,

EDWARD H. KNIGHT.