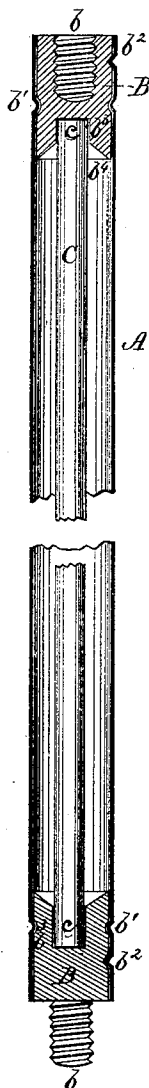


I. JOHNSON & D. A. PRICE.

LIGHTNING-ROD.

No. 173,963.

Patented Feb. 22, 1876.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ISAAC JOHNSON AND DAVID A. PRICE, OF CHICAGO, ILLINOIS, ASSIGNORS
TO REYBURN, HUNTER & CO., OF SAME PLACE.

IMPROVEMENT IN LIGHTNING-RODS.

Specification forming part of Letters Patent No. **173,963**, dated February 22, 1876; application filed.
November 30, 1875.

To all whom it may concern:

Be it known that we, ISAAC JOHNSON and DAVID A. PRICE, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Lightning-Rod; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which the figure is a longitudinal section.

The invention relates to that class of lightning-rods made of tubular form and in several parts joined together.

It consists in re-enforcing and stiffening the tube-sections with a metallic rod, that does not fit up to the inside of the tube, but is maintained in a rigid and immovable position on the axial line of the outer cylinder by attachment at each end to a coupler; also, in combining each section with a pair of peculiarly-constructed couplers, one having a threaded socket and the other a screw, while each is provided with an opposite central recess for receiving the strengthening-rod, and a conical cavity at the outer end of recess for directing and guiding the end of rod to its seat in the recess.

A represents the tubular section of our lightning-rod; B B, the couplers, and C the re-enforcing-rod on the inside. The plugs or couplers B B have, respectively, a corresponding screw and screw-socket, $b\ b$, by which another section may be jointed at each end of the tube-section A. In order to prevent the tube A from turning or moving circularly on the couplers B B, which would not be prevented by the annular joint b^1 , we make, in connection with the latter, one or more notches or depressions, b^2 , that produce a very rigid fastening, and one that entirely obviates rattling. We also hold the rod C securely in the central or axial line of the tube A by causing its ends

$c\ c$ to enter the recesses $b^3\ b^3$. In order that there may be no difficulty or delay in making the end c of rod enter the recess b^3 , we form the bevel incline or conical guideway b^4 , by which it is directed at once to its seat.

The advantages are as follows: The iron center is very important to give strength, and by inserting it into the ends of the couplings it can be fastened firmly in the rod, and can be of smaller size than the conductor, and hence cheaper, more easily transported, bent, and adjusted to buildings. The sections are all made at the shop in lengths of ten feet, with some shorter sections, and have only to be screwed together and adjusted to the building, which is very easily and quickly done. By this mode of making a lightning-rod there is also the additional advantage that the iron center is perfectly protected from water, which would cause it to rust, form ice, and burst the conductor.

Having thus described our invention, what we claim as new is—

1. A tubular section, A, of a lightning-rod, strengthened by an internal rod, C, conjoining solid end plugs, thus forming a continuous rigid stiffener, as shown and described.

2. The described combination, with tube A and stiffener C, of couplers B B, having each a central recess, b^3 , for receiving the rod ends $c\ c$, holding the stiffener axially, and allowing a smaller, as well as much cheaper, rod to be used.

3. The conical or inclined guideway b^4 before the recess b^3 , as and for the purpose specified.

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Witnesses:

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