

No. 667,366.

Patented Feb. 5, 1901.

E. J. HANSEN.
LIGHTNING ROD.

(Application filed May 22, 1900.)

(No Model.)

Fig. 1.



Fig. 2.

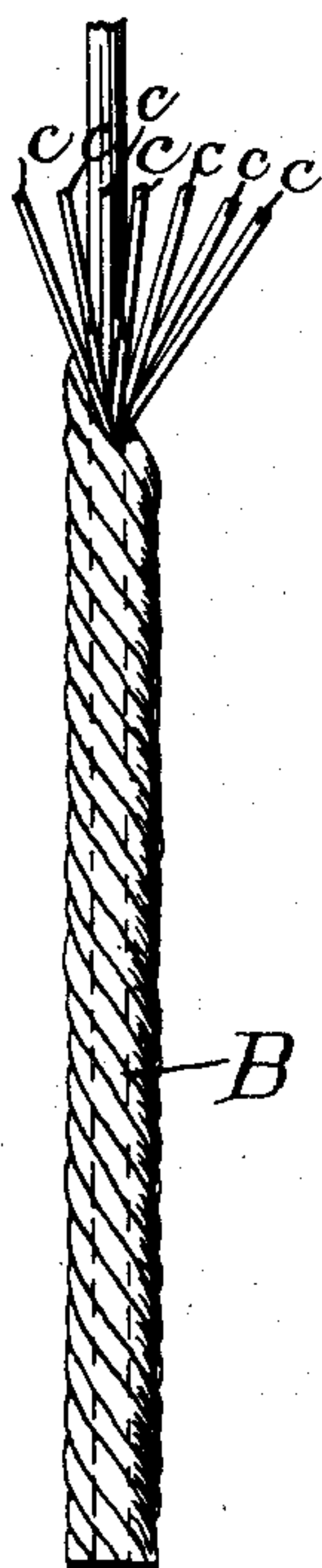
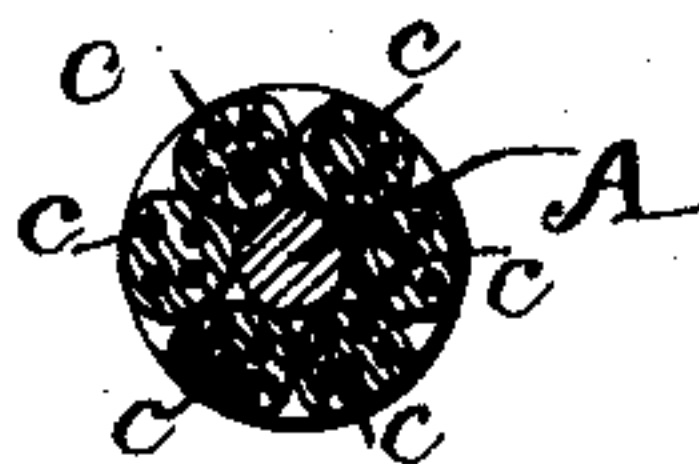


Fig. 3.



WITNESSES

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EBBE J. HANSEN, OF ATLANTIC, IOWA.

LIGHTNING-ROD.

SPECIFICATION forming part of Letters Patent No. 667,366, dated February 5, 1901.

Application filed May 22, 1900. Serial No. 17,579. (No model.)

To all whom it may concern:

Be it known that I, EBBE J. HANSEN, a citizen of the United States, residing at Atlantic, in the county of Cass and State of Iowa, have
5 invented certain new and useful Improvements in Lightning-Rods; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as
10 it appertains to make and use the same.

My invention relates to improvements in lightning-rods and electric conductors; and the objects of my improvements are, first, to give spring-support to the rod when placed
15 upon buildings or other structures and to spring back into position if disturbed on the building; second, to cause the rod to roll straight from the spool on which the rod may be wound for the purpose of shipping,
20 thereby preventing kinking of the rod when unwound; third, to facilitate fastening the rod around corners, eaves, chimneys, and other angular parts of the building or structures to which the rod may be applied, and, fourth, to
25 provide a central support for the rod, which increases the conductivity and durability of the rod over lightning-rods and electric conductors now in use, as it is the inside of a copper lightning-rod cable that gives away first
30 on account of corrosion where the same consists of fine wire, my improvements adding one great advantage in that the center consists of a heavy tempered copper or brass wire, which will delay the decay caused by the
35 weather and other means of corrosion. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is the central spring, around which
40 ropes or clusters are wound or twisted. Fig. 2 is a cluster or rope of small wires twisted together, and Fig. 3 is a section of the finished or completed rod or conductor.

Similar letters refer to like parts throughout the several views.

The letter A designates the central spring-rod, of copper or brass.

B refers to a cluster or rope of soft small copper wires wound or twisted together. C
50 C C C indicate the individual small copper wires which make up or compose one of the ropes or clusters B. A suitable number of these ropes or clusters B having been first prepared they are laid in juxtaposition about
55 and around the spring central rod A, and the

said ropes or clusters B are then twisted or spirally wound upon and about the central spring-rod A, of copper or brass, which spring central rod is shown in the different views of the drawings and is larger than the individual
60 soft small copper wires composing the ropes or clusters B.

I may select any suitable-sized wire for the central spring core or support, but prefer wire No. 9, and various sizes of small copper wires
65 composing the ropes or clusters may be chosen with good effect.

I have in the drawings illustrated four small soft-copper wires composing one of the ropes or clusters B, yet I may use less number of such
70 small copper wires for the ropes or clusters. One of said ropes or clusters consists of six copper wires and another rope or cluster is provided with seven wires, and yet I may make my ropes or clusters of less than four
75 or more than seven of said wires.

I have shown upon the drawings six ropes or clusters wound spirally around or twisted about the spring central core; but it is manifest that I may select more than six or less
80 than six such ropes or clusters in carrying out my invention.

I do not desire to confine my invention to the precise number of wires shown and herein described composing the ropes or clusters;
85 neither do I desire to confine my invention to the exact number of ropes or clusters spirally wound or laid about the central core or support of spring metal; but

What I claim as my invention, and desire
90 to secure by Letters Patent, is—

1. A lightning-rod consisting of the heavy central spring-core support, copper wires twisted together upon themselves into ropes,
95 said ropes laid in juxtaposition upon said tempered spring central core-support, and spirally wound or twisted thereon.

2. A lightning-rod consisting of a core of spring-wire of good conductivity, ropes or clusters of copper wire twisted together upon
100 themselves, and the said ropes or clusters spirally wound or twisted upon the said spring-core.

In testimony whereof I have hereunto affixed my signature in presence of two wit-
105 nesses.

EBBE J. HANSEN.

Witnesses:

JACOB CHRISTENSEN,
LARS P. HANSEN.