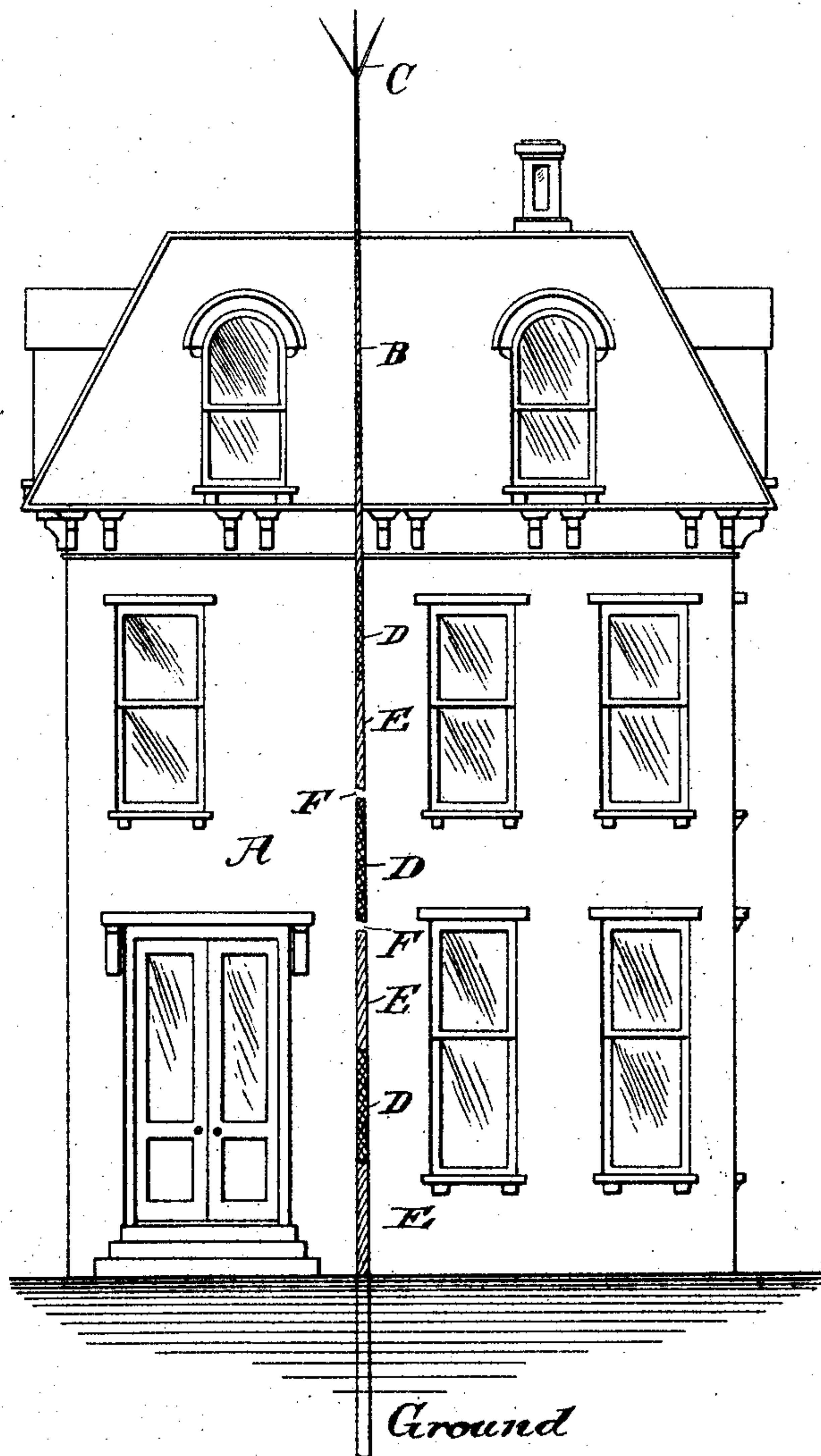


(No Model.)

N. D. C. HODGES.  
LIGHTNING ROD.

No. 505,106.

Patented Sept. 19, 1893.



WITNESSES:

*W. H. Benjamin*  
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BY

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# UNITED STATES PATENT OFFICE.

NATHANIEL D. C. HODGES, OF PLAINFIELD, NEW JERSEY, ASSIGNOR TO  
THE AMERICAN LIGHTNING PROTECTION COMPANY, OF SIOUX CITY,  
IOWA.

## LIGHTNING-ROD.

SPECIFICATION forming part of Letters Patent No. 505,106, dated September 19, 1893.

Application filed December 17, 1890. Serial No. 374,987. (No model.)

*To all whom it may concern:*

Be it known that I, NATHANIEL D. C. HODGES, a citizen of the United States, and a resident of the city of Plainfield, in the county of Union and State of New Jersey, have invented new and useful Improvements in Lightning-Rods, of which the following is a specification.

Lightning rods as heretofore used have been constructed on the principle of furnishing a channel or path, which would be selected by the electricity of the surrounding atmosphere as a means of reaching the earth in preference to other paths; and inventors have sought to aid this selection by increasing the conductivity of the lightning rod, rendering it homogeneous as to electrical resistance, and making the surface of the rod sufficiently large to provide for the safe passage of a large quantity of electricity. In spite of the ingenuity displayed and the advances made in this construction, buildings provided with the most perfect lightning rods heretofore known have been damaged by lightning, and in consequence thereof such rods have fallen into disrepute.

I have discovered that the utility of a lightning rod as a protecting agent lies in quite another direction, and that the inventors aforesaid have been going away from the proper object point rather than drawing nearer to it. I therefore construct my improved lightning rod, not as a channel of communication between the clouds and the earth, but as a body yielding readily to the destructive power of electricity; and to this end I diminish its conductivity and vary its resistance in different parts of its length. This varying resistance I accomplish sometimes by altering the character or texture of different portions of the rod, and sometimes by actually breaking the continuity of the rod, so that adjacent lengths do not quite meet each other but leave an air space; nor is it necessary to make the rod wholly of metal, for a straw rope as a covering of the rod, or as a linear portion of the rod, would probably prove efficacious.

My invention consists, therefore, in a lightning rod of considerable resistance, and presenting at one or more points of its length an electrical resistance different from that of the main portions of the rod.

One form of my invention is shown in the accompanying drawing, in which—

A represents a house to be provided with my improved rod.

B represents the rod provided with the usual uplifted point C.

D represents sections of the rod which offer less resistance to the passage of an electrical current, and E represents portions of the rod so constructed as to offer greater resistance.

F represents places where the rod is cut so as to offer a break and the resistance of the air to the passage of an electric current along the rod.

The use of the point C is a matter of taste, as my rod would probably be an ample protection without it.

The rod is preferably of low conductivity,—that is, of moderate high resistance, electrically speaking,—but should be made of a substance which does not possess too great cohesion, as it is intended, that, if at any time the electrical influence to which a given portion of the rod is subjected is sufficiently strong to be dangerous, it shall spend itself in shattering the substance of the rod.

In practical use, the rod may be of a fine copper wire, constructed without any attempt to make it homogeneous throughout its entire length; and such a rod would probably be ample protection in ordinary cases. It is, however, a more scientific construction for the rod, to make it in short lengths which do not quite touch each other, or to alter the texture or substance of the rod at short intervals, so that an electric current, seeking to travel along the rod, shall not meet a uniform amount of resistance.

I claim—

1. A lightning rod provided with one or more deflagrating sections adapted to be destroyed by the passage of a discharge of lightning.

2. A lightning rod of considerable resistance, made up of two or more lengths which do not quite touch each other at their ends, substantially as shown and described.

NATHANIEL D. C. HODGES.

Witnesses:

A. G. SHERWOOD,  
GEO. SHERWOOD.