(No Model.)

C. F. HILL.

LIGHTNING ROD.

No. 361,520. Patented Apr. 19, 1887.

FIG. 2

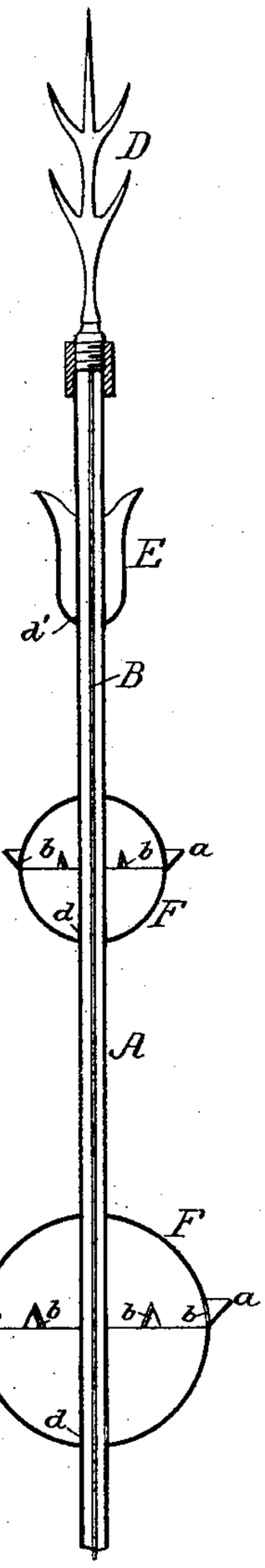


FIG. 1

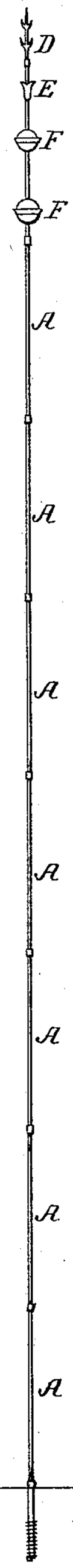


FIG. 3.

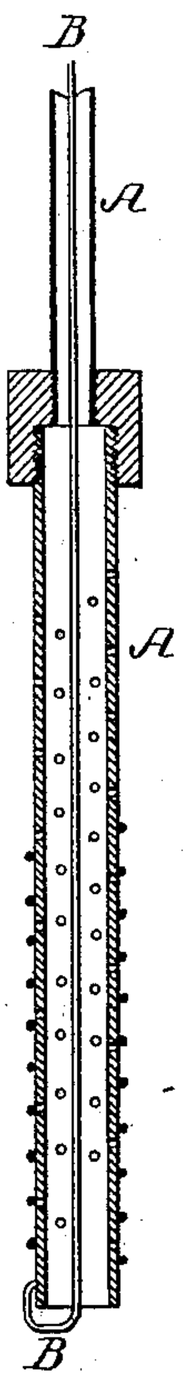
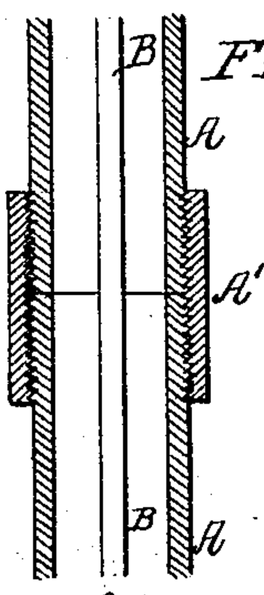


FIG. 4.



Witnesses
William F. Davis
Henry Bossert.

Inventor
Charles F. Hill
by his Attorneys
Howson and Sons

UNITED STATES PATENT OFFICE.

CHARLES F. HILL, OF HAZLETON, PENNSYLVANIA.

LIGHTNING-ROD.

SPECIFICATION forming part of Letters Patent No. 361,520, dated April 19, 1887.

Application filed May 28, 1885. Serial No. 166,961. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. HILL, a citizen of the United States, and a resident of Hazleton, Luzerne county, Pennsylvania, have invented certain Improvements in Lightning-Rods, of which the following is a specification.

The object of my invention is to construct a strong and cheap lightning-rod having good conducting properties, and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of a lightning-rod constructed in accordance with my invention; Fig. 2, a vertical section, on an enlarged scale, of the upper end of the rod; and Fig. 3, a vertical section of the lower end of the rod, also on an enlarged scale. Fig. 4 is an enlarged sectional view illustrating the manner of coupling the sections of the outer rod together.

The shell of my improved lightning-rod consists of a number of sections, A, of wrought-iron tubing, preferably galvanized, these sections being of any convenient length, and being connected together by the ordinary screw-couplings, A′, Fig. 4. The lowest section projects below the surface of the ground *x* to any desired extent and is of larger diameter than the upper sections of the rod, so as to present a large surface in contact with the earth.

The rod has an internal conductor, B, preferably in the form of a wire, strip, or rope, of copper, connected at the upper end to the finial D, which is secured to the top of the rod, the lower end of the said internal conductor being coiled around the outside of the embedded lower section of the rod, as shown in Figs. 1 and 3, so as to furnish a good earth-connection.

It is well known that the ability of a lightning-rod to conduct and discharge electricity depends in a great measure upon the condition of the earth in which the rod is embedded, and various plans have been devised for moistening the earth around the lower end of the rod, the maintenance of a moist body of earth at the ground end of the conductor being considered essential to the proper performance of its duty by the said conductor. In order to effect this moistening of the earth at and near the ground end of the conductor, I place upon the tubular rod, at any desired point, preferably near the upper end of the same, water-collecting vessels, which are in communication with the interior of the tube, so that rain, dew, or other moisture collected by said vessels is conveyed directly to the embedded lower end of the rod, from which it can escape at the end and through lateral perforations, as shown in Fig. 3.

In the present instance the water-collecting vessels form ornaments upon the rod and comprise an upper cup-shaped vessel, E, and hollow spheres F, the latter having upwardly-inclined flanges *a*, any water collected by which is directed through openings *b* to the interior of the sphere, from which it passes through openings *d* to the interior of the tubular rod, similar openings, *d′*, being formed in the rod for the passage of the water collected in the cup E.

The internal conductor, B, should of course be of such size as not to interfere with the free passage of water through the tubular rod A.

Not only does the tubular rod with its central core form a conductor of large superficial area, but the provision for collecting water and conveying the same through the rod to the lower end of the latter insures the maintenance of the best possible ground-connection for the rod, and thus increases the efficiency of the latter.

I am aware that cup-shaped vessels have been applied to hollow lightning-rods for the purpose of collecting water, which passes to the interior of the rod and descends the same, so as to moisten the earth at the foot of the rod; but such cup-shaped vessels afford receptacles for the lodgment of leaves and dirt and soon become clogged, so as to fail to perform their proper duty. A closed vessel, however, having a collecting-flange of contracted area around the same is not open to this objection.

While it is preferred to use a finial at the top of the rod and to connect the internal conductor thereto, the rod may, if desired, be closed by a cap at the top and the internal conductor may be connected to said cap.

I claim as my invention—

1. The combination, in a lightning-rod, of a tubular shell, with an interior conductor having its lower end coiled around the outside of

the embedded portion of the rod to give a good earth-connection, all substantially as described.

2. The combination, in a lightning-rod, of a tubular shell open to the earth at the lower end and having in its upper portion openings for the passage of the water into the interior of the shell with a vessel surrounding said shell and having an external water-collecting flange of contracted area, and openings through which the water collected in said flange can pass to the interior of the vessel, said vessel being otherwise closed, all substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHAS. F. HILL.

Witnesses:
R. C. JONES,
A. S. MUNROE.