

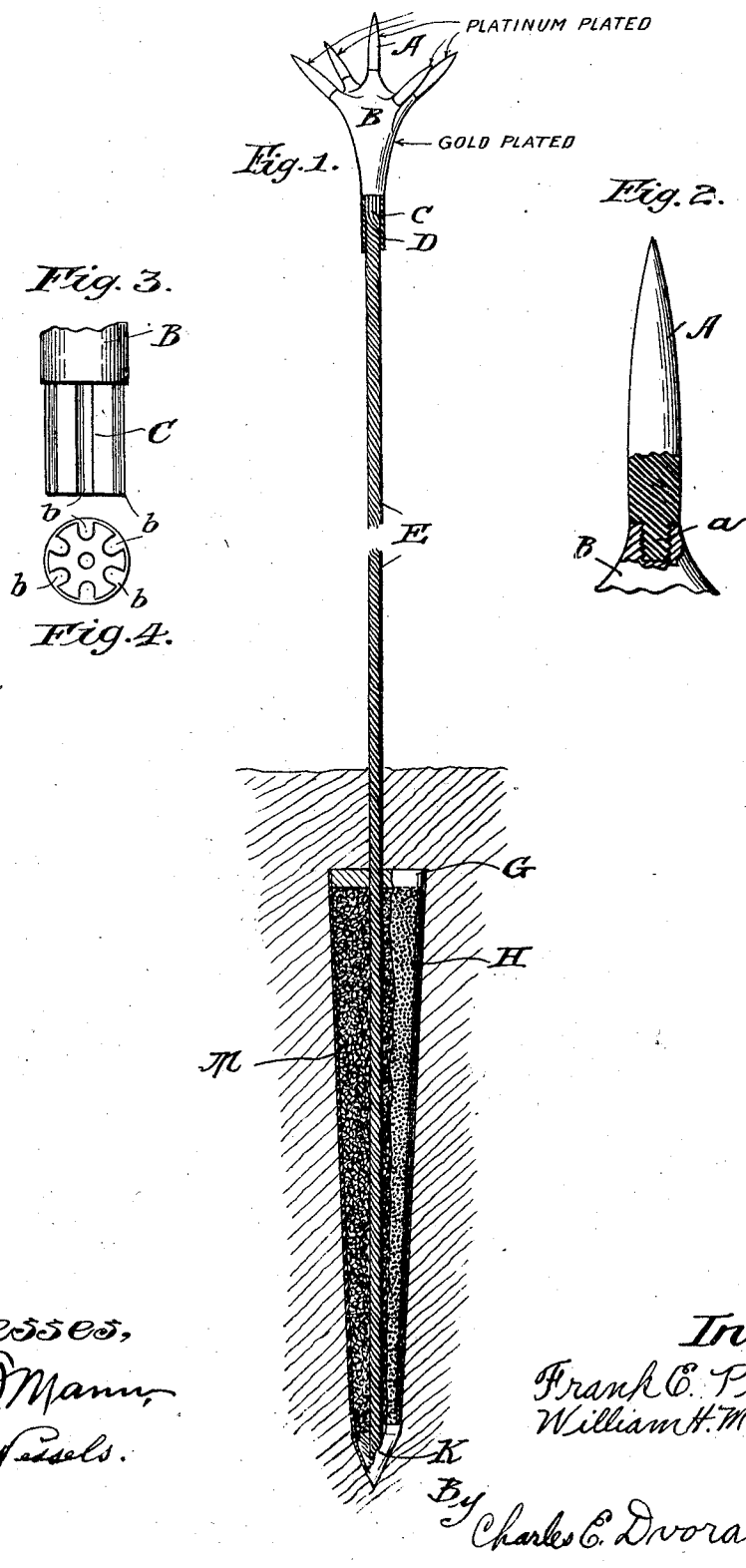
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F. E. PRICE & W. H. McCULLOUGH.

LIGHTNING CONDUCTOR.

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UNITED STATES PATENT OFFICE.

FRANK E. PRICE, OF CHICAGO, AND WILLIAM H. McCULLOUGH, OF RIVER FOREST, ILLINOIS.

LIGHTNING-CONDUCTOR.

No. 796,760.

Specification of Letters Patent.

Patented Aug. 8, 1905.

Application filed March 6, 1905. Serial No. 248,675.

To all whom it may concern:

Be it known that we, FRANK E. PRICE, residing at Chicago, and WILLIAM H. McCULLOUGH, residing at River Forest, in the county of Cook and State of Illinois, citizens of the United States, have invented new and useful Improvements in Lightning-Conductors, of which the following is a specification.

Our invention relates to improvements in lightning-conductors in the way of specially-constructed points of contact to receive charges of lightning, a means of connecting said points to the cable, and a grounding device called a "ground-reservoir;" and the objects of our improvements are, first, to provide less oxidizable and less fusible points; second, to provide an effective connection between the points and cable; third, to provide an efficient grounding device which will economize space, hold moisture, and be lasting both in regard to its durability and to its conducting powers, as evidenced by galvanometer tests. We attain these objects by means of the apparatus illustrated in the accompanying drawings, in which—

Figure 1 is a full view of the cluster of points mounted on the cable which runs down and is connected with the ground-reservoir. Fig. 2 shows in detail one of the points. Fig. 3 shows the neck of the body of the cluster of points. Fig. 4 shows an end view of Fig. 3.

Similar letters refer to similar parts throughout the several views.

In Fig. 1 the upper part is the cluster of points in which both the body B and the points A are made of copper cast in the form shown in the drawings. The points are plated by the electric process with platinum, which renders them less fusible and less oxidizable, and are threaded so as to screw into holes made in the body of the cluster—in this drawing five holes, one at the top and four arranged around it similarly to the four corners of a square. Fig. 2 shows in detail a point with the screw arrangement *a* screwed into the body B. The body B in order to make it non-oxidizable is plated by the electric process with gold.

The neck of the body B is shown in Fig. 3 as C. It is bored lengthwise in the middle and on the outside with a bit large enough to make grooves into which the strands of the copper cable when unspliced will fit. Fig. 4 shows the end view of the neck. The cop-

per tube or collar D (shown in Fig. 1) is first slipped over the upper end of the cable, which is then unspliced, the strands being laid in the grooves of the neck with the center strand going into the central hole of the neck. Then the collar is drawn up over the body of the neck and sweated in, the copper cable and tube being soldered together. The length of this tube or collar varies according to whether it is to be put upon the chimney of a private house or of a factory or on posts near a gas-tank. This tube or collar serves a double purpose. It is a means of connection between the cluster of points and the cable and is also used as a means of support for connection with the chimney to be protected.

In the lower illustration of Fig. 1 the grounding device, or "ground-reservoir," as we choose to call it, is made as follows: The body H is made of No. 21 Brown & Sharpe gage soft-rolled sheet-copper with not less than seventy-five perforations per square inch, two feet long, four inches in diameter at the top and two inches at the bottom. Soldered to it at the top is a copper-bronze head G one inch in height, through the center of which the conductor or cable E passes. The bottom has soldered to it a copper-bronze neck, which is capped by a detachable copper-bronze cone K three inches in length.

The depth at which the reservoir is put down depends upon the moisture of the ground—digging to extend until moisture is reached. Generally a post-hole auger is sufficient. Then the cable is run through the reservoir, the copper cone of the lower end being taken off. The end of the cable is then soldered as perfectly as possible into the cone, the inside of the reservoir is filled with powdered charcoal M, as shown in illustration, and the cable is pulled up so that the cone fits over the neck of the body of the reservoir, where it is soldered in like manner as above mentioned. Then the reservoir is lowered into the hole and covered up.

We are aware that points and ground-reservoirs have been used before, and we do not, therefore, claim such a combination broadly; but

What we do claim as our invention, and desire to secure by Letters Patent, is—

1. In combination with a lightning-conductor, a connection between the conductor and the tip formed by strands of the conductor

being laid into grooves on the sides of the neck of the tip, the center strand of the conductor being inserted into a hole in the center of the neck, the strands and neck being covered by a copper collar, which is sweated in, all substantially as set forth.

2. In combination with a lightning-conductor, a cluster of points made of copper, the body of which plated with gold has a number of screw-holes in it, into which are screwed the points, plated with platinum; the body of the cluster having a neck through which is bored a hole lengthwise, and along the outside of which are bored a number of grooves in such a way that the strands of the conductor may be laid in them with the center strand going into the hole in the center, the neck and strands being covered by a copper collar which is sweated in, all substantially as set forth.

3. In combination with a lightning-conduc-

tor, a grounding device, called a ground-reservoir, conically shaped, made of perforated copper; the upper cap made of copper bronze, is soldered to the body, and has a hole in the middle to admit of the conductor passing through to the other end; the lower cap also of copper bronze, and cone-shaped, is detachable and is soldered first, to the end of the cable, and then after the interior of the reservoir is filled with powdered charcoal, to the body of the reservoir, all substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

FRANK E. PRICE.

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