J. A. KLECKNER.

Lightning-Rod.

No. 162,828. Patented May 4, 1875.

Fig. 1.

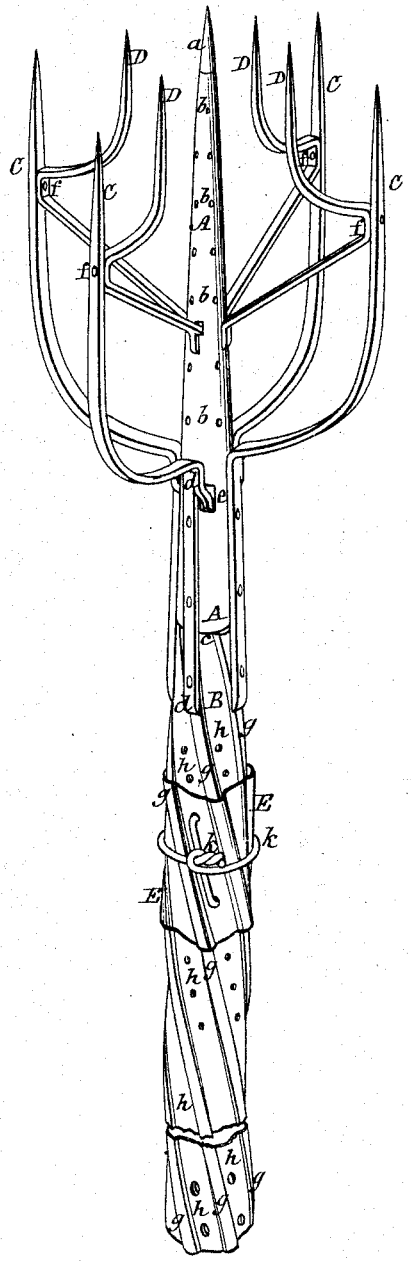

Fig. 2.

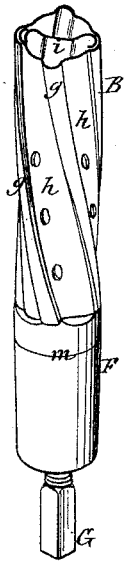

Fig. 3.

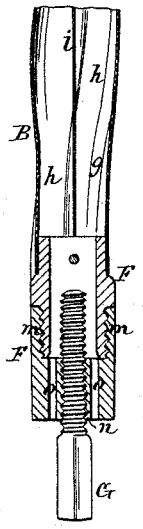

Fig. 4.

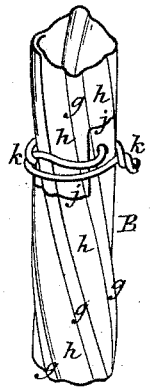

Fig. 5.

Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN A. KLECKNER, OF CANTON, OHIO, ASSIGNOR TO HIMSELF AND HENRY F. SHOLTY, OF SAME PLACE.

IMPROVEMENT IN LIGHTNING-RODS.

Specification forming part of Letters Patent No. **162,828**, dated May 4, 1875; application filed January 26, 1874.

To all whom it may concern:

Be it known that I, JOHN A. KLECKNER, of Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Lightning-Rods and their Attachments; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 represents, in perspective, the points and upper portion of the rod, together with a portion of the body or conductor, and a means of uniting the sections thereof. Figs. 2, 3, and 4 represent details of the construction of the rod, which will be more particularly referred to hereafter. Fig. 5 represents an end view of the coupling device shown at Figs. 2 and 3.

My invention relates to a lightning-rod made tubular or hollow, and ribbed or corrugated to increase the extent of conducting-surface, both inside and outside of the rod, and braced inside for a similar purpose, as also to give increased strength, and furnished with a series of points so made as to receive and conduct the fluid partially on the exterior and partially on the interior conducting-surfaces, and with openings or holes, through which the fluid may pass from the exterior to the interior of the rod, and vice versa, all of which will be more particularly described in connection with the drawings.

The main central point A is made conical and hollow, and tipped with platina *a*, or other suitable metal. This point has through it a series of holes, *b*, for allowing the fluid to divide and pass off partially on the interior and partially on the exterior surfaces thereof. The point A is connected to the main rod B at *c* by rivets or otherwise. Around the central point A are arranged a series of brace-points, C C, &c. The tangs *d* of these brace-points C are split or divided, one branch extending down outside of the main point A, crossing the joint *c*, and riveted to both the point A and the main rod B. The other branch of the tang passes through an opening, *e*, in the main point into the interior thereof, so as to divide the fluid over the interior as well as the exterior conducting-surfaces. The brace-points D, after being united, as at *f*, to the outer series C, then extend to and into the main point A, their tangs being divided, as and for the purpose above mentioned, in relation to those *d*. Openings are made through the main rod at various points or distances throughout its length, so that the fluid may equalize itself by passing from the exterior to the interior, or vice versa, as the case may be. The ground end of the rod is also furnished with holes or openings, so that the fluid may pass therethrough from the interior of the hollow rod into the earth. The main rod A is best when made of copper, and to make it light, strong, and inexpensive the copper may be thin, but formed of a series of spiral raised ribs, *g*, with plain, or slightly-arched or corrugated, lands *h* between them, and across the interior of the so made hollow rod is a corrugated wall or partition, *i*, which adds not only to the extent of interior conducting-surface, but materially strengthens the rod itself. The main rod B, being made of sheet metal, ribbed and corrugated as described, will be in sections, which must be united when the rod is to be put up. To make a convenient and ready splice, I shoulder and recess the adjacent ends of the sections, as at *j*, Fig. 4, forming, as it were, alternating tongues and grooves; and these being matched and slipped one into the other, a wire, *k*, is passed through the lapped ends, and brought around the exterior and fastened, as seen in Fig. 4. Such a splice will answer in most cases; but if the rod be heavy and much exposed, then a sleeve, E, as in Fig. 1, may be first passed over this tongue and groove or lapped joint *j*, and the wire *k* run through around the joint and sleeve, which will greatly strengthen the splice. If it be desirable to connect the point and portion of this special rod to any other kind of a lightning rod or conductor, a coupling-pin, as at F, Figs. 2, 3, 5 may be used, wherein B represents my form of rod, and G represents another form of rod to be united thereto. The coupling-piece F is made in two parts, which screw together, as at *m*, and it is, moreover, hollow, for a purpose to be hereinafter mentioned. The rod B is set over a shoulder on

the upper end of the coupling, and riveted to it. In the lower end of the coupling is a nut, *n*, with openings *o* around it, which connect with the open space through the coupling, so that a hollow rod, B, may be connected with a solid one, G, and both the exterior and interior conducting-surfaces of the hollow rod lead onto the exterior of the solid rod. To unite the two kinds of rods, the coupling F and its connected section and points is screwed onto a screw-shank on the rod G, as seen at Fig. 3.

Having thus fully described my invention, what I claim is—

1. In combination with a hollow, ribbed, or corrugated main rod, the hollow conical main point A, when both the rod and point are pierced to admit the passage of the fluid into the interior of the point and rod, as and for the purpose described.

2. In combination with the hollow and pierced point and rod, the brace-points, with branched tangs, so as to conduct the fluid both onto and into the hollow point or rod, or both, substantially as described.

3. The tongued and grooved joint and wired splice *j k*, with or without the sleeve E, as and for the purpose described.

4. In combination with the hollow, ribbed, corrugated, and pierced main rod B, the coupling-piece F, for the purpose of joining said rod B to a solid rod of any kind, as described and represented.

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Witnesses:
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