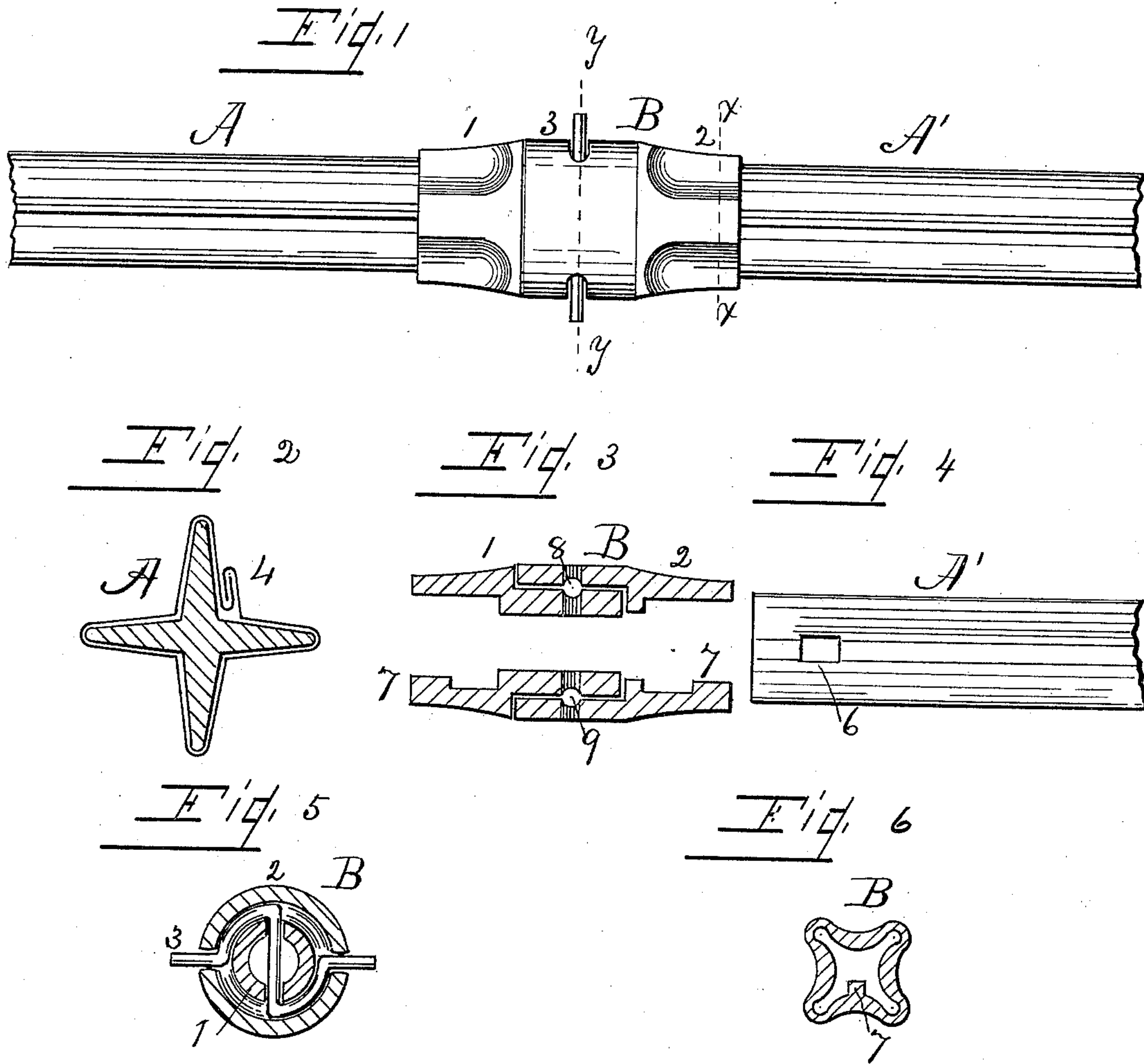


(No Model.)

L. L. MAST.  
LIGHTNING ROD.

No. 395,399.

Patented Jan. 1, 1889.



Witnesses,  
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# UNITED STATES PATENT OFFICE.

LOUIS L. MAST, OF WEST MILTON, OHIO.

## LIGHTNING-ROD.

SPECIFICATION forming part of Letters Patent No. 395,399, dated January 1, 1889.

Application filed March 29, 1888. Serial No. 268,920. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS L. MAST, a citizen of the United States, residing at West Milton, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Lightning-Rods; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in lightning-rods; and the several features consist of, first, the manner of securing the edges of the copper plate covering the central iron core; second, in the manner of attaching the connection-burr to the sections of rods; third, the manner of uniting the burrs to form the connection for sections of rods.

The objects are the improvement of lightning-rods in these several features. These objects are attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view of joined sections of a lightning-rod. Fig. 2 is an enlarged transverse section of the rod. Fig. 3 is a central longitudinal section of a pair of connection-burrs. Fig. 4 is a view of the end of a rod with a slot through it. Fig. 5 is a transverse section of the connection-burrs on line *y y*, Fig. 1. Fig. 6 is a transverse section of the burr on the line *x*, Fig. 1.

Like letters designate like parts throughout the several views.

The shape of my improved rod is identical with those in use, having a central core of iron, with four flanges having converging outlines and the edges being equidistant, and over this is a covering of the copper plate 4. It has been the practice in putting on plate to simply overlap the edges. I do it by interlocking the edges, so that in bending the rod, as is requisite in attaching the same to buildings, the plate does not rise from its core, but remains snugly in connection therewith. The manner of interlocking the edges of the copper plate is illustrated at Fig. 2. The copper plate is

bent about the core and its inner edge is bent out, and the outer is bent at nearly a right angle and is then folded within the groove formed in the former, and the parts are pressed firmly together. Connection-burrs have been attached to sections of lightning-rods in a variety of ways, and that mode most allied to my plan is that of placing a burr having a quadrangular opening over the end of the flanged or "star" rod and pressing the metal of the burr tightly between the flanges. Burrs thus attached are liable to be pulled off, and to obviate this I cast the burrs with small lugs 7 on the interior. A slot, 6, is punched (see Fig. 4) at the center, and this engages the said lug as the metal of the burr is pressed down between the flanges, and this makes the fastening to the end of the rod entirely secure. The connection-burr B comprises two parts—the male 1 and the female 2—and these are attached to the ends of sections of rods A and A', as above specified. The two portions of the burr have radial orifices 8 and the semicircular grooves around the interior of the two parts, thus forming the circumferential groove 9. To unite the parts the wire 3 is put through the radial orifices, when the two parts of the burr are brought together and a turn is given. This operation draws the wire into the circular groove formed by the two parts and thus they are firmly united. It is customary to construct lightning-rods in sections and unite them as they are being attached to buildings, and these burrs are for this purpose.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a lightning-conductor, the flanged core A, infolded with copper plate 4, and the edges thereof inwrapped by the upturned edge of one side being infolded by the other, substantially as shown and described.

2. In a lightning-conductor, connection-burr having a square orifice to embrace the end of a flanged rod, said orifice provided with projection 7 to enter orifice 6 of said flanged rod as said burr is compressed between the flanges of said rod to securely unite the same, substantially as set forth.



3. The connection-burr B of mated parts 1  
and 2, having square orifices in the outer ends  
to embrace sections of rods, and each part  
having coincident semicircular circumferen-  
5 tial grooves and coincident radial orifices,  
with wire adapted to said orifices to unite said  
parts, substantially as shown and described.

In testimony that I claim the foregoing as  
my own I affix my signature in presence of two  
witnesses.

LOUIS L. MAST.

Witnesses:

B. PICKERING,  
O. E. DAVIDSON.