W. S. REYBURN & F. J. MARTIN.

LIGHTNING-ROD COUPLING.

No. 186,877. Patented Jan. 30, 1877.

Fig. 1.

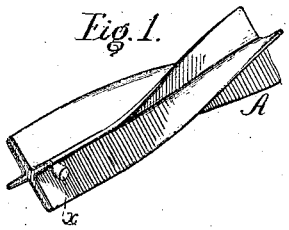


Fig. 2.

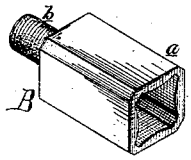


Fig. 3.

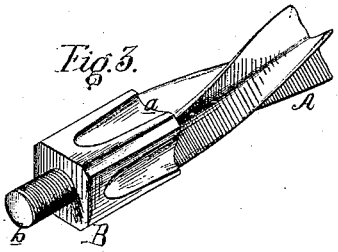


Fig 4.

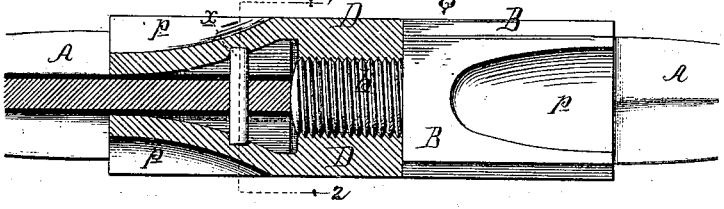
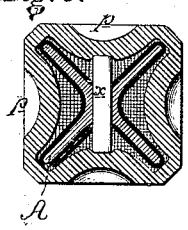


Fig. 5.



Witnesses
Hermann Moesner.
Harry Smith.

William S. Reyburn
and
Frederick J. Martin
by their Attorneys.
Howson & Howson

UNITED STATES PATENT OFFICE.

WILLIAM S. REYBURN AND FREDERICK J. MARTIN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN LIGHTNING-ROD COUPLINGS.

Specification forming part of Letters Patent No. **186,877**, dated January 30, 1877; application filed December 20, 1876.

To all whom it may concern:

Be it known that we, WILLIAM S. REYBURN and FREDERICK J. MARTIN, both of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Couplings for Lightning-Rods, of which the following is a specification:

The object of our invention is to provide lightning-rods with simple, permanent, and economical couplings, by which a perfect metallic union of the rods may be effected; and this object we attain in the manner which we will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a perspective view of a portion of a lightning-rod prepared for attachment to the couplings; Fig. 2, a perspective view of one portion of the coupling; Fig. 3, a perspective view of the same portion of the coupling attached to one end of the rod; Fig. 4, a view, partly in section, and drawn to an enlarged scale, of the complete coupling; and Fig. 5, a transverse section on the line 1 2, Fig. 4.

The lightning-rod A is of wrought-iron, and has a cruciform section, so as to present four longitudinal ribs, the rod being clothed with thin copper, and being twisted so that the ribs take a spiral course throughout the entire length of the rod, excepting at the opposite ends, where we prefer to have the ribs straight for a short distance, as shown.

It should be understood, however, that our invention is not restricted to lightning-rods of the character described; but may be adopted in connection with any style of rods.

The coupling is in two parts, one being attached to one end, and the other to the opposite end, of each rod. One part, B, of the coupling (illustrated in the perspective view, Fig. 2) consists of the socket *a*, for the reception of one end of the rod, and a threaded projection, *b*, at the closed end of, and forming a part of, the socket. The other part, D, of the coupling consists of a precisely similar socket, with a threaded orifice adapted to the threaded projection *b* of the other part. These two parts of the coupling are connected one to each end of one rod, in a manner which constitutes the main feature of our invention, and which we will now proceed to describe.

Near each end of the rod a hole is drilled or punched, and into this hole is driven a pin, *x*, as best observed in the enlarged views, Figs. 4 and 5, or pins or projections may be otherwise attached to, or formed on, the end of the rod, which is then inserted into the socket of one part of the coupling, and the latter is placed on a suitable anvil, and submitted to the action of a drop-hammer or swage, by which two opposite sides of the socket are indented, and forced toward each other and into the cavities formed by adjoining ribs of the rods.

The result of this will be best observed in the enlarged views, where it will be seen that the indentations *p p* contract the socket in the metal of which the ends of the pins are embedded by the force of the blows which caused the indentations, for it should be understood that the pins or projections are of iron, and that the couplings are made of softer metal or alloy.

The socket, owing to this forcing of opposite sides of the same toward each other and against the pins, is now firmly secured to the rod.

The two remaining sides of the socket are subjected to a similar swaging action, partly with the view of causing the socket to more tightly embrace the end of the rod, and partly for the purpose of making all four sides of the socket appear alike.

After the other portion of the coupling has been secured to the opposite end of the rod, the latter is complete, and a number of these rods may be connected together, as shown in Fig. 4, by screwing the threaded projection of the part B of the coupling on one rod into the threaded orifice of the part D of the coupling of another rod.

We have found this economical plan of coupling lightning-rods together to be most efficient in practice.

We claim as our invention—

1. The mode described of connecting each portion of the coupling to the rod—that is to say, by indenting opposite sides of the said

socket, and forcing them against pins or projections on the rod, as set forth.

2. The combination of two rods each having near the end a pin or projection, *x*, with the two parts B and D of the coupling constructed to be screwed together, and having sockets adapted to and compressed to the rods and pins, all substantially as set forth.

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

WM. S. REYBURN.
FREDERICK J. MARTIN.

Witnesses:
HERMANN MOESSNER,
HARRY SMITH.