

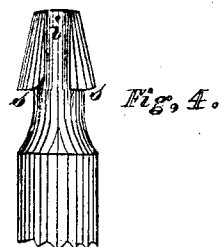
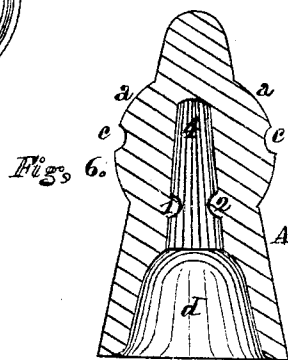
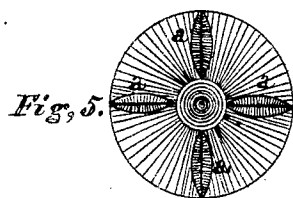
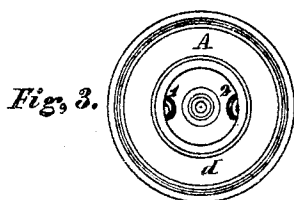
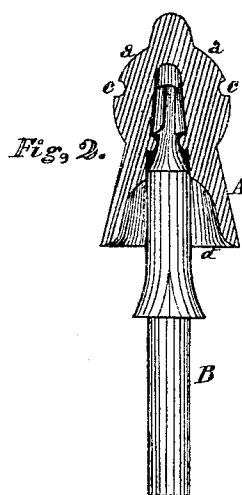
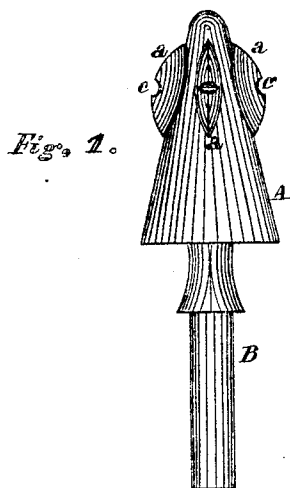
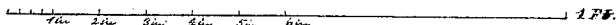
D. R. P. EMMINGER.

Improvement in Telegraph Insulators.

No. 123,878.

Patented Feb. 20, 1872.

Scale 2 in. to Ft.



Witnesses.
Wm. P. Patton
Geo. Heitzmann

Inventor.
David R. P. Emminger

UNITED STATES PATENT OFFICE.

DAVID R. P. EMMINGER, OF HARRISBURG, PENNSYLVANIA.

IMPROVEMENT IN TELEGRAPH-INSULATORS.

Specification forming part of Letters Patent No. 123,878, dated February 20, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, DAVID R. P. EMMINGER, of the city of Harrisburg, county of Dauphin, and State of Pennsylvania, have invented a new and Improved "Insulator for Telegraph Purposes;" and I do hereby declare the following to be a full, clear, and exact description of the same, reference being made to the accompanying drawing making a part of this specification, and to the letters of reference marked thereon.

The nature of my invention consists in so constructing my improved "insulator" that dust and dirt are prevented from accumulating upon its outer surface. Also in reducing the points of contact of the conducting-wire with the insulator, in a great degree, by a peculiar method of construction of said insulator.

In the drawing, Figure 1 represents a perspective view of the device. Fig. 2 is a longitudinal section of the insulator, taken through its center. Fig. 3 is an interior view, as seen from the lower edge. Fig. 5 is a top view of the insulator. Figs. 4, 6, and 7 are views of the insulator and the upper end of its supporting-pin. These views, as well as Figs. 3 and 5, are on an enlarged scale, to render the details more clear. Figs. 1 and 2 are drawn to the scale shown in the drawing.

In all the views in which it appears A represents the body of the insulator. It is constructed of glass, and is made conical in form, as is shown in Figs. 1, 2, and 6. Upon its outer surface, a proper distance from the upper rounded end, four rhombus or lozenge-shaped projections, *a a a a*, are formed. These projections have circular or rounded notches formed in their outer edges a proper distance from their terminations. They are intended to receive and retain in place the binding-wire that secures the conducting-wire to the insulator. The projections may be increased in number, if desired. Four are considered sufficient, and that number is preferred on account of facility of construction. The lower part of the body of the insulator is hollowed out in cup-form, as seen in the sections in Figs. 2 and 6. From the upper part of this cup, concentric with the outer surface, a conical recess extends upward. It is made of such relative height to the insulator's length

that a sufficient portion of material will be allowed above it to insure strength. Upon the surface of this recess 4, at points directly opposite each other, two knobs or rounded projections are formed, as seen in Figs. 2 and 6. The recess 4, (see Fig. 6,) is designed to receive the supporting-pin B, (see Figs. 2 and 4.) This pin is made of wood. The lower part is rounded, as is shown, to enter the sustaining-bracket. The upper end, (see Figs. 2 and 4,) is reduced so as to form a shoulder around its body. Two parallel grooves, *i i*, are cut at opposite points in the conical part that projects above this shoulder. These grooves *i i* are made of sufficient depth and width to allow of the easy insertion of the projecting knobs 1 2 that are formed on the wall of the recess 4. The shoulders are cut away so as to form inclines that slope from one edge of each of the grooves *i i*, as is shown in Figs. 2 and 4. The neck formed below the shoulder is made a little smaller than the distance between the projections 1 2 in the recess 4 in the body of the insulator. The thickness of wood between the bottoms of the grooves is the same as the diameter of the neck above-mentioned. It will be observed that from this method of construction, the supporting-pin B can be instantly and securely locked into the recess in the insulator by inserting its upper end in the lower end of said recess, entering the knobs 1 2 in the grooves *i i*; then, by pushing and at the same time turning the insulator slightly, the knobs 1 2 engage below the shoulders *s s*, and rigidly connect the two together.

It is a fact well known to experts in telegraph construction that the ordinary cylindrical glass insulator is very defective in operation. This is mainly owing to the fact that dust and dirt accumulate around the groove and upon the surface below the groove until a partial conducting-medium is formed between the wire and the supporting-pin. I have overcome this difficulty by constructing the body of the insulator of conical form, thus permitting the rain to dash upon every part of its surface and wash it clean. The peculiar form of the grooved projections *a a a a* also permits the rain to perfectly cleanse them of dirt. Another advantage is obtained by this method of construction, which is, that the bearing surface between the conducting-wire and the in-

ulator is reduced to a minimum. I am aware that this feature has been attempted before in a cylindrical insulator: A rigid metallic band encircling it, bearing upon knobs formed on the surface, and held in place by a set-screw. This insulator is defective from the fact that the unyielding nature of the connection between the band and the insulator causes breakage by the action of frost. I avoid this by using a binding-wire to connect the main wire with the insulator, which, by its elasticity, preserves the glass from breakage. I therefore disclaim the use of rigid encircling bands on cylindrical insulators. But—

What I do claim as new, of my invention, and desire to secure by Letters Patent of the United States, is—

An insulator constructed with its outer surface conical or flaring from the apex to the base, provided with the peculiarly-shaped and grooved projections *a a a*, as herein set forth and for the purposes specified.

DAVID R. P. EMMINGER.

Witnesses:

WM. P. PATTON,

GEO. H. HEITZMANN.