(No Model.) 2 Sheets—Sheet 1.

C. O. MUEHLBERG.

INSULATOR.

No. 434,992. Patented Aug. 26, 1890.

FIG. 1.

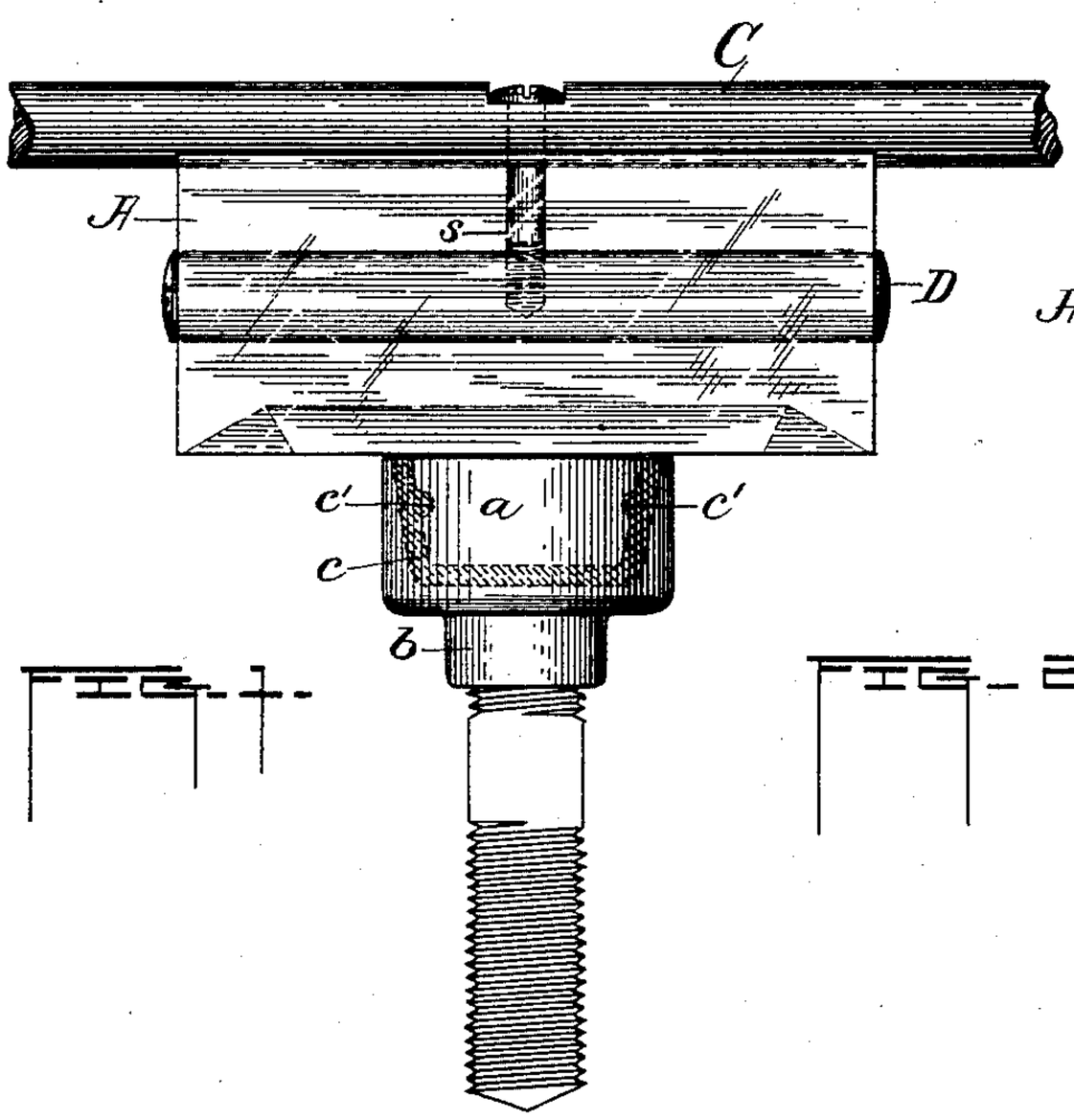


FIG. 2.

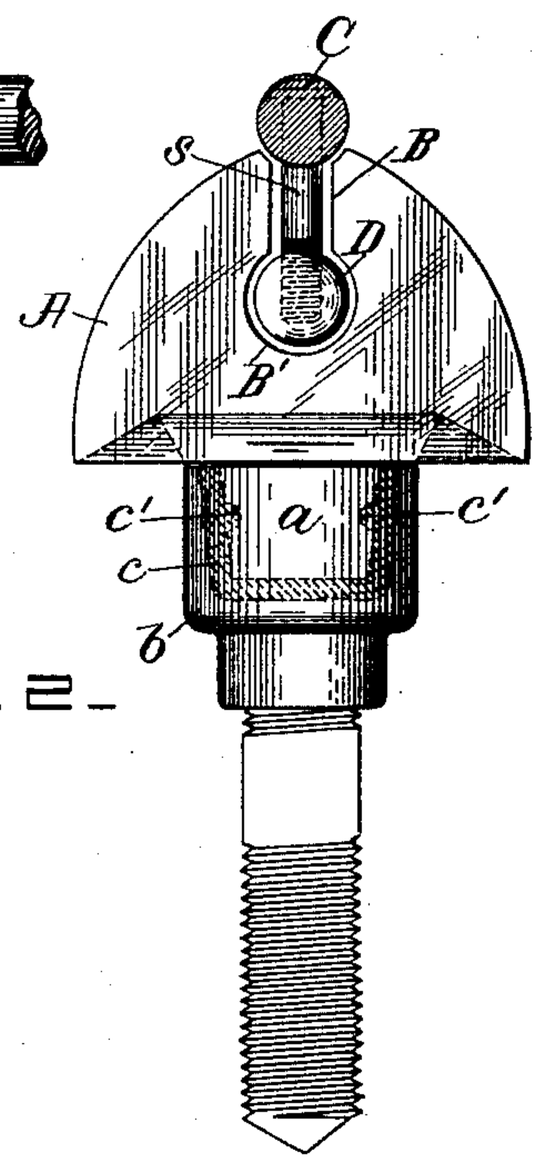


FIG. 3.

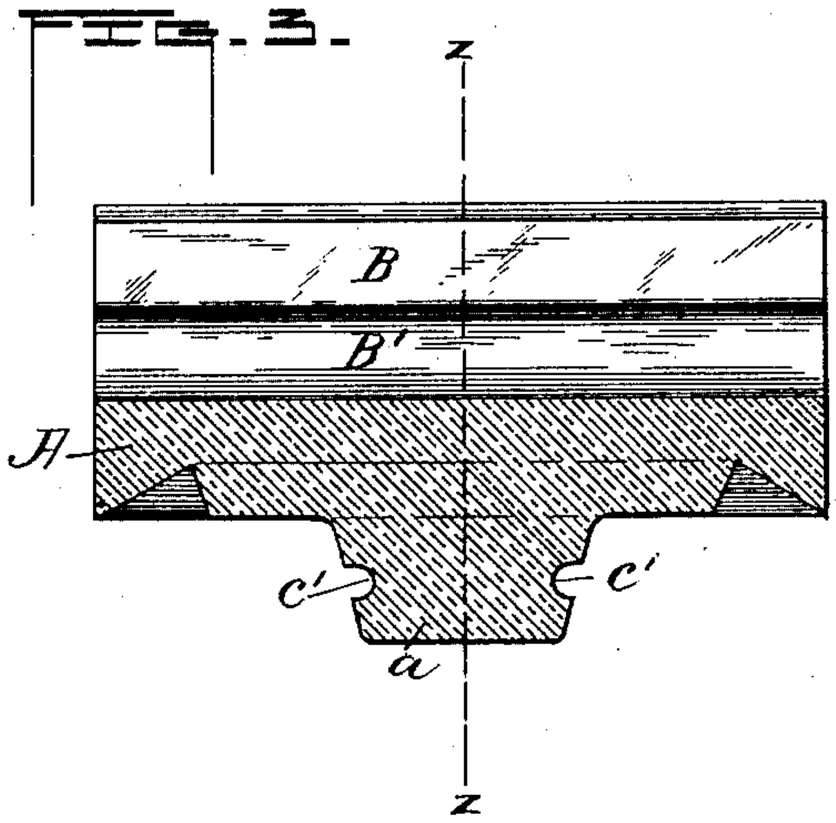
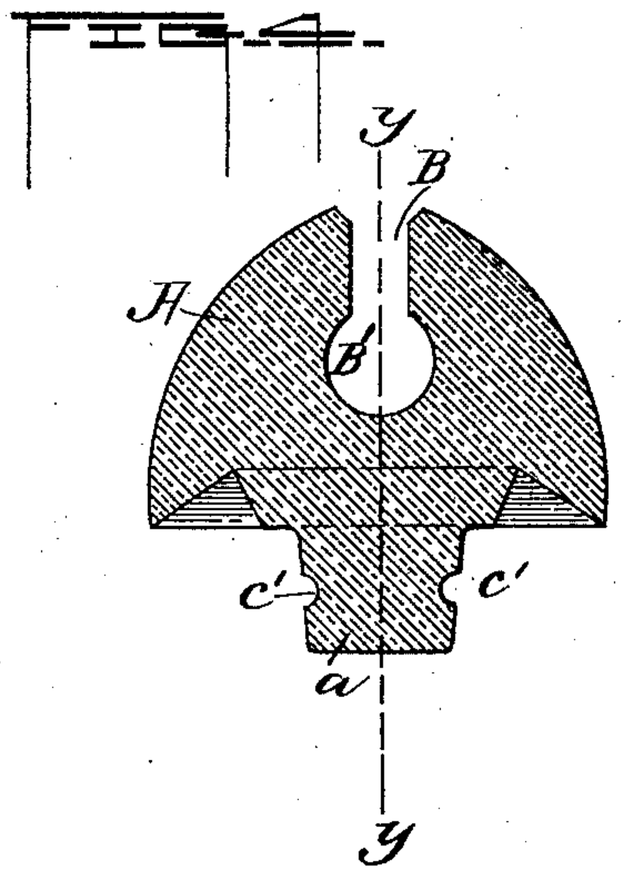


FIG. 4.



WITNESSES

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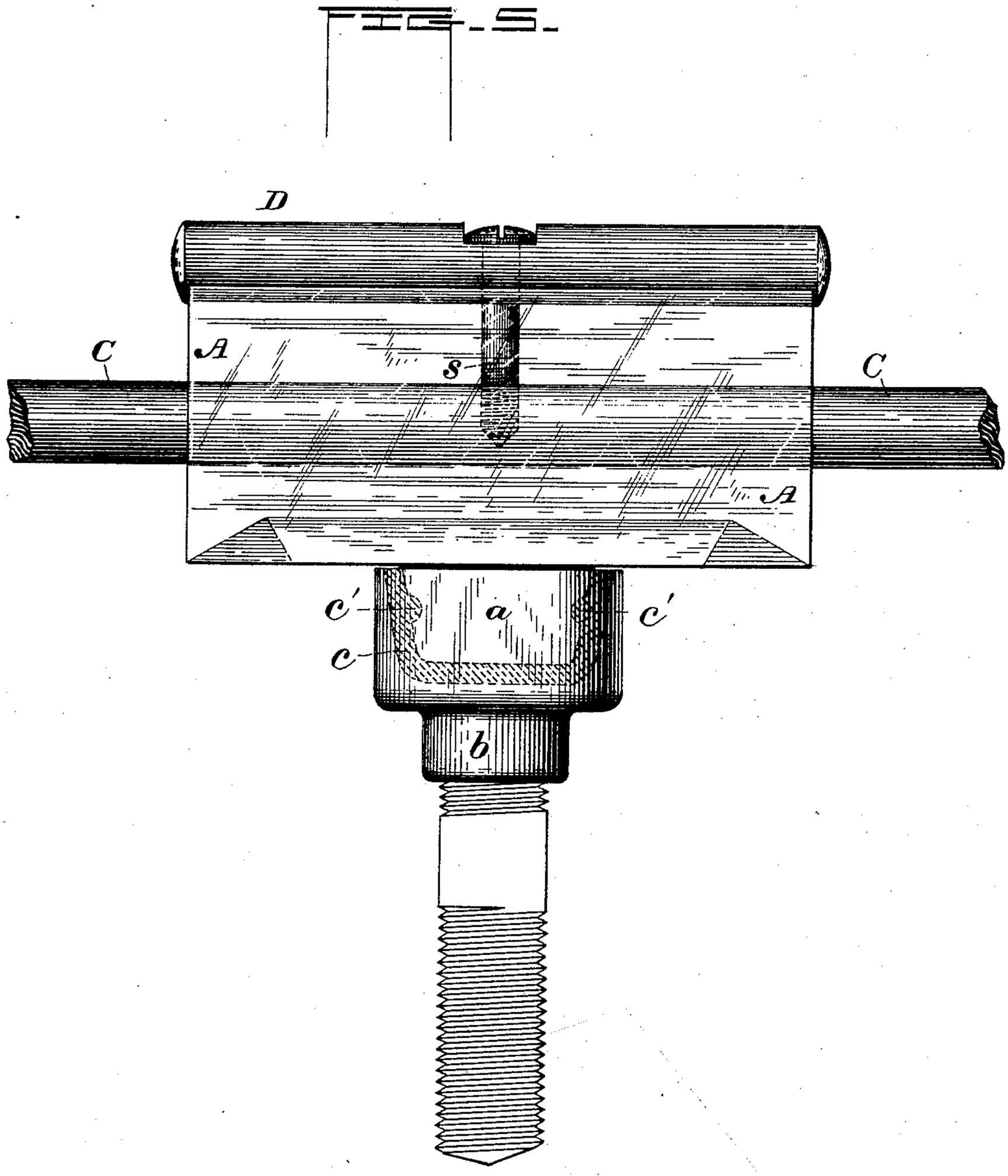
(No Model.) 2 Sheets—Sheet 2.

C. O. MUEHLBERG.

INSULATOR.

No. 434,992. Patented Aug. 26, 1890.

FIG. 5.



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CHARLES OSWALD MUEHLBERG, OF PITTSBURG, ASSIGNOR OF ONE-HALF TO HENRY STAMM, OF MOUNT OLIVER, PENNSYLVANIA.

INSULATOR.

SPECIFICATION forming part of Letters Patent No. 434,992, dated August 26, 1890.

Application filed May 22, 1890. Serial No. 352,705. (No model.)

To all whom it may concern:

Be it known that I, CHARLES OSWALD MUEHLBERG, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Insulators, of which the following is a full, clear, and exact description.

My improvement is applicable to the support or suspension and insulation of electrical conductors wherever the wire or conductor needs to be supported and insulated from its support; and it is especially adapted for the underground or overhead conductors used in electrical railways and electric-light cables; and it is also applicable to use with telegraph and telephone wires.

The special purpose of my invention is to furnish an adequate insulating and supporting device for the electrical conductor which will permit of free longitudinal motion of the wire or conduit without interfering with the insulation or separation of the same from its support.

I will now describe my invention, so that others skilled in the art may make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of my improved device. Fig. 2 is an end view thereof. Fig. 3 is a vertical longitudinal sectional view of the body of the insulator on the line *y y* of Fig. 4. Fig. 4 is a vertical cross-sectional view on the line *z z* of of Fig. 3. Fig. 5 shows in side elevation a modified construction of my improved device, adapting it to be used with conductors of telephones, telegraphs, electric lights, &c.

In the drawings, A is an insulator, formed preferably of glass, although it may be made of wrought or cast iron, or other suitable material, and be itself insulated from its support. This insulator is attached in any convenient way to a stem *a*, which is set in a cavity or socket in a bracket *b*, as is shown by the dotted lines in the drawings. The cavity of this bracket, in which the stem *a* rests, is provided with a lining of insulating material *c*, which incloses the sides of the stem and fills the retaining-groove *c'*, which surrounds the stem. By these means the insulator is firmly secured to the bracket and is insulated therefrom. The insulator A has a longitudinal groove B, which extends downward, the lower part B' being of larger diameter than the upper part, as is shown in the drawings, and being circular in cross-section, so as to receive a short metallic rod D of sufficient length to permit of as much longitudinal motion of the conductor as may be necessary.

C is the electrical conductor, wire or cable, which in use rests in a concave enlargement at the top of the slot or groove B, and is connected with the rod D by a screw *s*, or by a suitable link, so that as the conductor moves lengthwise or longitudinally the rod D moves with it, and yet is prevented from escaping from the slot or groove, as the rod is greater in diameter than the upper portion of the slot, so that even should the insulator become detached from its support the conductor will be still retained therein. In case it should be desired to remove the conductor-wire from the insulator it is only necessary to draw the conductor and rod out of the groove or slot, or, if this cannot be conveniently done, to remove the screw *s*.

I have described my improvement as adapted for use with electric railways where the brush or traveler runs over the surface of the conductor. Where the traveler runs under the conductor, the parts may be inverted. This will be illustrated by viewing Figs. 1 and 2 in an inverted position. Where the conductor is to be used for other purposes—such as for telephones, telegraph, or electric lights—the position of the rod may be changed to the top of the insulator A, while the conductor is passed through the lower portion B' of the slot or groove B. This is shown in Fig. 5.

I claim—

1. The combination, with an insulator, of a sliding rod to which the conductor is to be attached, said sliding rod being borne by the

insulator, substantially as and for the purposes described.

2. The combination of an insulator having a longitudinal groove, a sliding rod fitting in the groove, and a link for connecting the rod with the conductor, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 3d day of May, A. D. 1890.

C. OSWALD MUEHLBERG.

Witnesses:
W. B. CORWIN,
H. M. CORWIN.