(No Model.)

E. M. BOYNTON.

ELECTRIC CONDUCTOR SUPPORT AND PROTECTOR.

No. 427,221. Patented May 6, 1890.

Fig. 1.

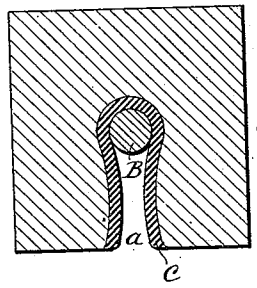


Fig. 9.

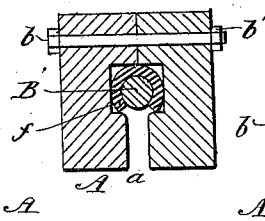


Fig. 2.

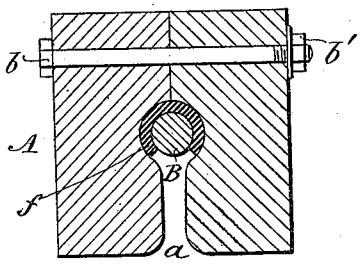


Fig. 7.

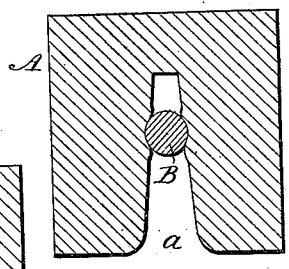


Fig. 3.

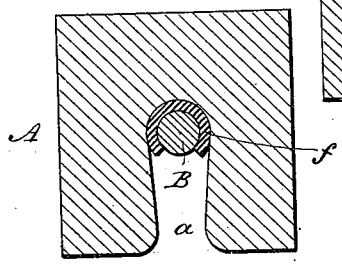


Fig. 4.

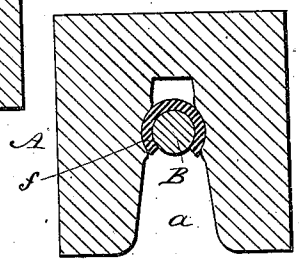


Fig. 8.

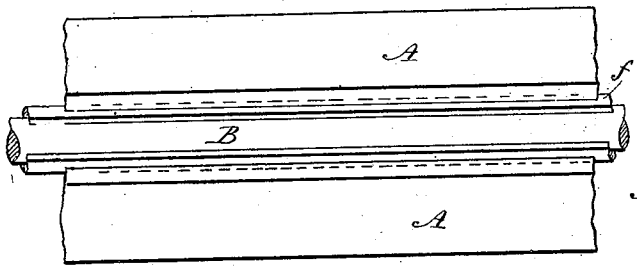


Fig. 5.

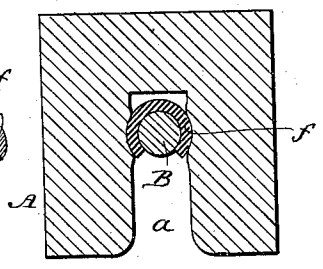
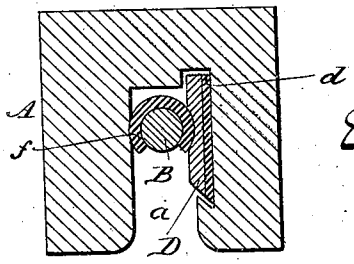


Fig. 6.



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EBEN MOODY BOYNTON, OF WEST NEWBURY, MASSACHUSETTS.

ELECTRIC CONDUCTOR SUPPORT AND PROTECTOR.

SPECIFICATION forming part of Letters Patent No. 427,221, dated May 6, 1890.

Application filed February 26, 1890. Serial No. 341,816. (No model.)

To all whom it may concern:

Be it known that I, EBEN MOODY BOYNTON, of West Newbury, county of Essex, and State of Massachusetts, have invented certain new and useful Improvements in Electric Conductor Supports and Protectors, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to improved means for supporting, protecting, and insulating an overhead conductor for electric railways and analogous purposes; and it consists of an overhead continuous rail, preferably of wood, having a longitudinal groove or slot cut through its inferior face, into which slot the conductor is forced, and in which it is retained by constant lateral pressure produced by the elasticity of the wood, the insulating material, or both.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a transverse section of one form of my improved support and protector with an electric conductor in place. Figs. 2, 3, 4, 5, 6, 7, and 9 represent, respectively, other forms thereof. Fig. 8 represents an inverted plan of the same.

In the drawings, A represents the electric-conductor support and protector, which is designed to extend continuously overhead the length of the railway when applied to such purpose, and is preferably constructed of squared joists or timbers, and is designed to be supported on posts, (not shown,) though in some instances properly-grooved metal rails may be substituted for the wooden ones.

In the inferior face of the support and protector A a vertical groove or slot *a*, preferably extending to about the center of the support, is made for receiving the electric wire or rod connection B, that may be of any desired figure in cross-section.

In Fig. 1 the slot or groove *a* is slightly contracted just above the mouth thereof, and then widened, and is lined throughout with sheet-rubber C, or other suitable insulating material, which practically reduces the width of the groove *a* to less than the diameter of the conductor, that in this instance is a naked wire. Then the conductor B is forced by a traveling disk or wheel or other suitable tool into the top of said lined groove, where it is securely held by the continuous lateral compression of the insulator C, and where it is absolutely protected from rain, snow, and ice.

In Figs. 2 and 9 other forms of my device are shown, wherein the support and protector is composed of two rails or joists bolted together face to face by bolts *b*, and being cut away on their opposing faces. The grooves *a* are formed when they are brought in contact, as shown, and by turning the nuts *b'* on the bolts the parts of the rail are brought together to laterally compress the conductor and hold it in place. In these instances, as in Figs. 3, 4, 5, and 6, the electric conductor may be a wire covered with an elastic or compressible insulating substance—such as rubber, fibrous material, or lead—and when the conductor is in place in the groove an abrading disk or wheel or a planer is designed to be applied to remove the insulation from the wire along its inferior face to expose it for the contact of the transmitter. (Not shown.)

In Figs. 3, 4, 5, and 7 the same construction of support is shown as in Fig. 1, but with other equivalent forms of grooves or slots.

In Fig. 6 the groove *a* is rectangular, and a longitudinal side groove *d*, connecting therewith, is made, in which is entered lengthwise a composite strip D, of wood and rubber or other elastic substances, that projects into the groove *a*, and thereby contracts it; hence when the conductor B is entered into the said groove *a* and up into the contracted portions thereof it is held in place by the lateral compression of the said strips D, as indicated.

With a current of low tension a naked wire conductor may be used, and in Fig. 7 one is shown held in the slot or groove of the support and protector by the elasticity of the latter.

I do not confine myself to any particular cross-section shape of support or of groove therein, as the lines of both are capable of many variations within the scope of my invention, which, essentially, is to provide a device that shall hold and support an overhead

electric conductor by lateral compression, and at the same time protect it absolutely from the interference of rain, snow, and ice.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with an overhead electric conductor, of a support and protector, consisting of a rail having a longitudinal groove cut through its inferior face, in which groove the said conductor is held by lateral pressure, substantially as herein shown and described.

2. The combination, with an electric conductor, of a rail having a longitudinal groove lined with an elastic or compressible insulating substance, whereby the conductor is held in the groove by the lateral compression of said insulator, substantially as herein shown and described.

3. The combination, with an electric conductor having an insulating-covering, of a rail having a longitudinal groove wherein the conductor is held by the lateral pressure upon it of the walls of the said groove, substantially as herein shown and described.

In testimony that I claim the foregoing I have hereunto set my hand, in the presence of two witnesses, this 21st day of February, 1890.

EBEN MOODY BOYNTON.

Witnesses:
JACOB J. STORER,
CHAS. H. LOTT.