C. L. PEIRCE, Jr.

INSULATOR PIN.

APPLICATION FILED MAY 17, 1916.

1,202,885. Patented Oct. 31, 1916

Fig. 1

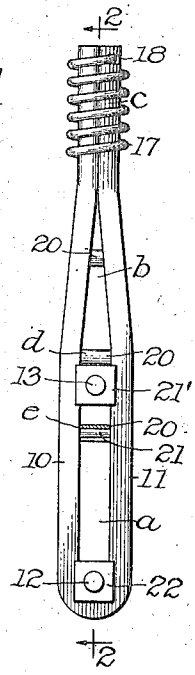


Fig. 2

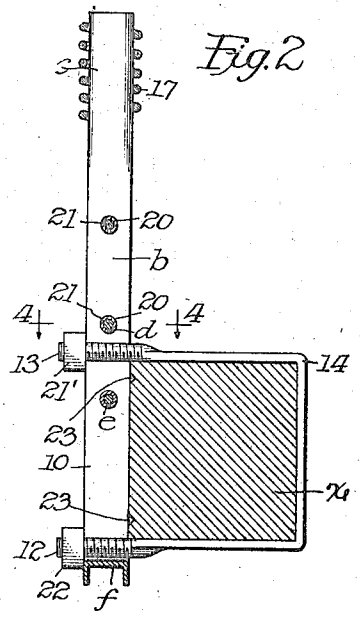


Fig. 3

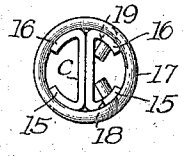


Fig. 6



Fig. 4

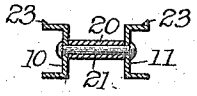


Fig. 7

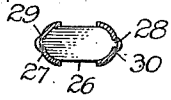
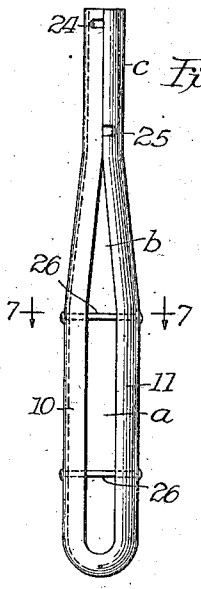


Fig. 5



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Atty

UNITED STATES PATENT OFFICE.

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INSULATOR-PIN.

1,202,885. Specification of Letters Patent. Patented Oct. 31, 1916.

Application filed May 17, 1916. Serial No. 98,031.

To all whom it may concern:

Be it known that I, CHARLES L. PEIRCE, Jr., a citizen of the United States, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Insulator-Pins, of which the following is a specification.

My invention relates to metal insulator pins particularly to a type adapted to be secured to the sides of wooden or metal cross-arms.

The object of my invention is to produce a strong, light and inexpensive metal pin to be secured against the sides of wooden or metal cross-arms to support heavy insulators used in high voltage line work.

The details of construction of my improved pin are clearly shown on the accompanying drawing in which—

Figure 1 is a front elevational view of a pin, Fig. 2 is a sectional view thereof on plane 2—2, Fig. 1, showing the pin strapped to a cross-arm, Fig. 3 is an enlarged top view, Fig. 4 is a sectional view on plane 4—4, Fig. 2, Fig. 5 is a front elevational view of a pin showing a modified construction. Fig. 6 is a top view of the pin of Fig. 5, and Fig. 7 is a sectional view on plane 7—7, Fig. 5.

In the form shown in Figs. 1 to 4, the pin is made of a single piece of channel bar bent double and comprising the lower part *a*, the intermediate part *b*, and the upper part *c*. The channel bar is bent with its flanges extending outwardly and at the lower part *a* the sides 10 and 11 are parallel and spaced apart a sufficient distance to receive bolts, screws, or the ends 12 and 13 of cross-arm straps 14. At the intermediate part *b* the sides 10 and 11 are straight but inclined toward each other, and at the upper part *c* the ends come together back to back as clearly shown in Fig. 3, and the flanges 15 and 16 are curved toward each other to provide cylindrical seating surface for insulator supporting thimbles, shown here in the form of a wire helix 17, the ends of which engage in the slots 18 and 19 cut in the flanges. To form a rigid truss construction to greatly strengthen the pin particularly against spreading apart or collapsing of the sides under load, spacers 20 are inserted between the sides at desired points and held in place preferably by rivets 21. The spacers may be in the form of metal blocks or, as shown, may be short tubes formed by bending pieces of sheet metal. As shown in Figs. 1 and 2, spacers *d* and *e* are placed above and below and close to the upper part 13 of the strap to prevent spreading at this point of the sides during application of the nut 21′ and when the pin is under load. The lower end 12 of the strap passes between the pin sides close to the bend *f* and the nut 22 engages the metal surrounding the bend. To strengthen the hold of the pins on the wooden cross-arm *x* outer sections of the flanges are deflected to form points 23 which bite into the wood when the pin is applied. When the pin is applied to metal cross-arms, which are narrower vertically and consequently require smaller straps, the upper end of the strap will pass between the sides below the spacer *e* and this spacer will prevent spreading of the pin sides during application of the nut and when the pin is under load. Also, when the pin is applied to metal cross-arms, it is turned to bring the points 23 to the outside so as not to interfere with the cross-arm.

In Figs. 5, 6 and 7 I show a modified arrangement. Instead of bending the pin up from stock channel bar, a flat length of sheet metal is first bent longitudinally to arched cross-section and is then bent double with the flanges extending inwardly, the general shape of the pin being then the shape as is shown in Fig. 1 and comprising the lower part *a*, the intermediate part *b*, and the upper part *c*, the semi-cylindrical sides at the upper part *c* meeting at their edges to form a seat of circular cross-section throughout for insulator thimbles for which slots 24 and 25 may be provided. Instead of using tubes and rivets for spacers, plates 26 are used. These plates are of semi-circular cross-section for fitting against the inner surface of the sides 10 and 11 and which have tongues 27 and 28 for extending through holes 29 and 30 in the pin sides, the projecting ends of the tongues being riveted over. These plates thus rigidly tie the pin sides together to produce a rigid truss construction which will prevent spreading or collapsing of the sides under heavy loads. In forming the pin of Fig. 5 the blank can be dimensioned and the bends so made that the pin will have the necessary strain resisting cross-sections at

its various points without overweight or waste of material.

The pins shown and described, on account of their truss construction are very light and at the same time possess great strength and are particularly adaptable for supporting the heavy insulators required for high voltage service. The straight sides at the intermediate parts *b* of the pins which gradually deflect toward each other and meet at the top section *c* give additional strength to the pin against bending.

I do not of course desire to be limited to the exact construction and arrangement shown as modifications may be possible which would still come within the scope of the invention.

I claim as follows:

1. An insulator pin made of a single length of sheet metal of channel shaped cross-section bent double comprising a lower part, an intermediate part and a top part, the sides at the lower part being parallel and spaced apart just sufficiently to permit the passage of bolts; the sides at the intermediate part being straight but inclined toward each other, and the sides at the top part abutting, the flanges at the top part being bent to give cylindrical seating surface for insulator thimbles, and spacers between and secured to the sides.

2. An insulator pin made of a single length of sheet metal of arched cross-section bent double with its ends brought together, the sides below the ends being separated just sufficiently to permit the passage of bolts, spacers extending between and secured to the separated sides, and the flanges at the engaging ends being bent to provide cylindrical seating for insulator thimbles.

3. An insulator pin made of a single piece of channel steel of uniform cross-section throughout bent double and separated by spacers to produce a truss construction, the metal at the ends of the pin being bent to provide cylindrical seating for insulator thimbles.

In witness whereof I hereunto subscribe my name this 11th day of May, A. D. 1916.

CHARLES L. PEIRCE, JR.