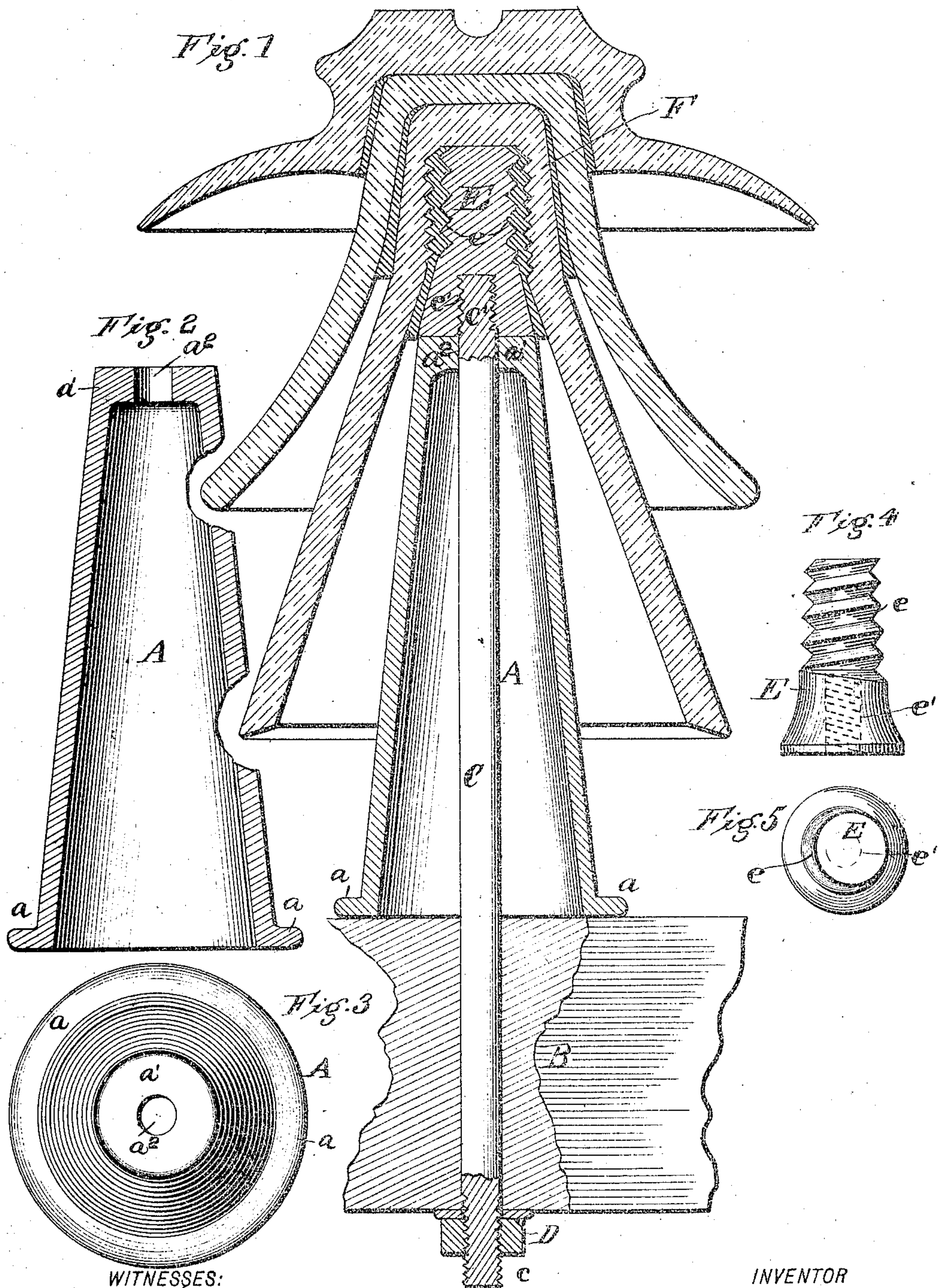


No. 855,253.

PATENTED MAY 28, 1907.

W. S. LEE, JR.  
INSULATOR PIN.

APPLICATION FILED FEB. 10, 1906.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM STATES LEE, JR., OF CHARLOTTE, NORTH CAROLINA.

## INSULATOR-PIN.

No. 855,253.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed February 10, 1906. Serial No. 300,440.

*To all whom it may concern:*

Be it known that I, WILLIAM STATES LEE, Jr., a citizen of the United States, and a resident of Charlotte, in the county of Mecklenburg and State of North Carolina, have made certain new and useful Improvements in Insulator-Pins, of which the following is a specification.

My invention relates to an improvement in securing pins for large insulators of the kind used for supporting conductors for high potential electrical circuits.

The object of my invention is to so construct such an insulator pin that will comprise the minimum number of parts so combined as to secure ample and the greatest strength and durability, and facilitate and expedite line repairs by the ease and facility with which injured or defective insulators may be replaced, and also to secure an economy of cost of such replacing of insulators by reducing in size or amount the part of the pin which has to be discarded, and by a method of replacing requiring a minimum amount of labor and time.

To these ends my invention consists in certain novel features of construction, arrangement and combination of parts as will be hereinafter fully described and pointed out in the claim, reference being had to the accompanying drawing, in which

Figure 1 is a sectional elevation of an insulator and the insulator pin embodying my invention. Fig. 2 is a vertical section of a metal truncated cone forming parts of my improvements. Fig. 3 is a top plan view of same. Fig. 4 is a cast iron piece suitable for cementing into any insulator, and Fig. 5 is a top plan view of same.

In carrying out my invention, I use a base or standard A of cast iron or other suitable material, said standard or base being a thin hollow, truncated cone of proper height having an enlarged thickness or flange *a* at its base, and having the top *a'* bored or cored out with a hole *a''* of proper size passing through said top; the top surface of the cone is parallel with its base, the rim *a* of said base constituting its sole bearing surface on the cross arm B.

C represents a bolt threaded at its lower end *c* and at its upper end *c'* the threads extending any suitable distance required; the lower threaded end carries a nut D, which when run up clamps the parts of the pin to-

gether and to the cross arm B and without any strain on the insulator.

E is a piece of cast iron which is cemented or otherwise fastened in the insulator F. It may have cement retaining means such as the coarse thread *e*, or it may have other suitable detents. This piece E has at its lower end a hole *e'* threaded to fit the upper threaded end *c'* of the bolt C so that the piece, E may be unscrewed; the lower end of E is made true to fit the top of the bearing cone A, when the parts are assembled. As the top surface of the cone-shaped standard A is parallel with the lower surface of the base flange *a*, and the lower surface of the piece E is trued to fit the upper surface of *a'* perfectly, it will be seen that the piece E when screwed on the upper threaded cut of bolt C fits squarely thereon, and that strain on the insulator proper cannot cause the bolt to bend. The shape of the side wall of the piece E is substantially the same as that of the side walls of the standard A, and hence forms a direct continuation of the same, and by virtue of this shape divides, equalizes and distributes strain on the base and the bolt C.

The cone A is to be a simple casting with no machine work, while the bolt C is a simple rod of steel or iron, with a short thread alike on each end, the lower threaded end to receive the nut D. The piece E is a plain casting with no machine work except the short internal thread in its lower end, owing to which fact, entailing its low cost, it may be discarded with broken insulators.

It will thus be seen that I produce a simple, cheap and efficient device consisting of few parts, which will secure ample and great strength and will facilitate and expedite line repairs and can be readily removed and replaced, and which is the more valuable as such repairs ordinarily have to be made in places more or less inaccessible.

When it is necessary to replace an insulator which has been damaged by lightning or other causes, by simply unscrewing the broken insulator and with it the piece E which is embedded in the insulator, the operator screws on another piece E embedded in the perfect insulator, leaving the old bolt C as it is in the cross arm, thus saving the expense of new bolts and new cones which is considerable and also saving the time necessary to break away the insulator as has been usually the custom in



earlier styles of insulator pins and attachments; the only thing that is lost is the piece E, the cost of which is small.

I claim:

5 1. An insulator pin comprising a hollow conical metal base, and a securing bolt passing through the same, said bolt threaded at its upper end, and a metal head screwed on the upper end of said bolt, said head adapted  
10 to be fastened into an insulator and to be unscrewed from the upper end of the bolt to replace a damaged insulator.

15 2. An insulator pin comprising a hollow conical metal base, a securing bolt passing through the same and threaded at its upper end, and a separate conical metal head or cap internally threaded to screw on the upper end of the bolt, said conical cap hav-  
20 ing its lower edge parallel with the lower end of the hollow conical base, and fitting true the upper end of the same, the upper end of said cap provided with means to

secure the same in an insulator by cementing or otherwise.

3. An insulator pin comprising a hollow 25 metallic truncated cone shaped base part having a horizontal flange at its lower end, and an opening through its upper end, its upper face and the lower face of the flange being parallel, a securing bolt passing through 30 said opening and threaded at its upper end, a truncated cone shaped metallic cap screwed on the upper threaded end of said bolt, the lower edge of said cap being parallel with the lower face of the horizontal 35 flange at the lower end of the base part, and fitting true the upper end of the base part, the upper end of said cap provided with detents to receive cement and secure said cap in an insulator.

WILLIAM STATES LEE, Jr.

Witnesses:

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F. D. SAMPSON.