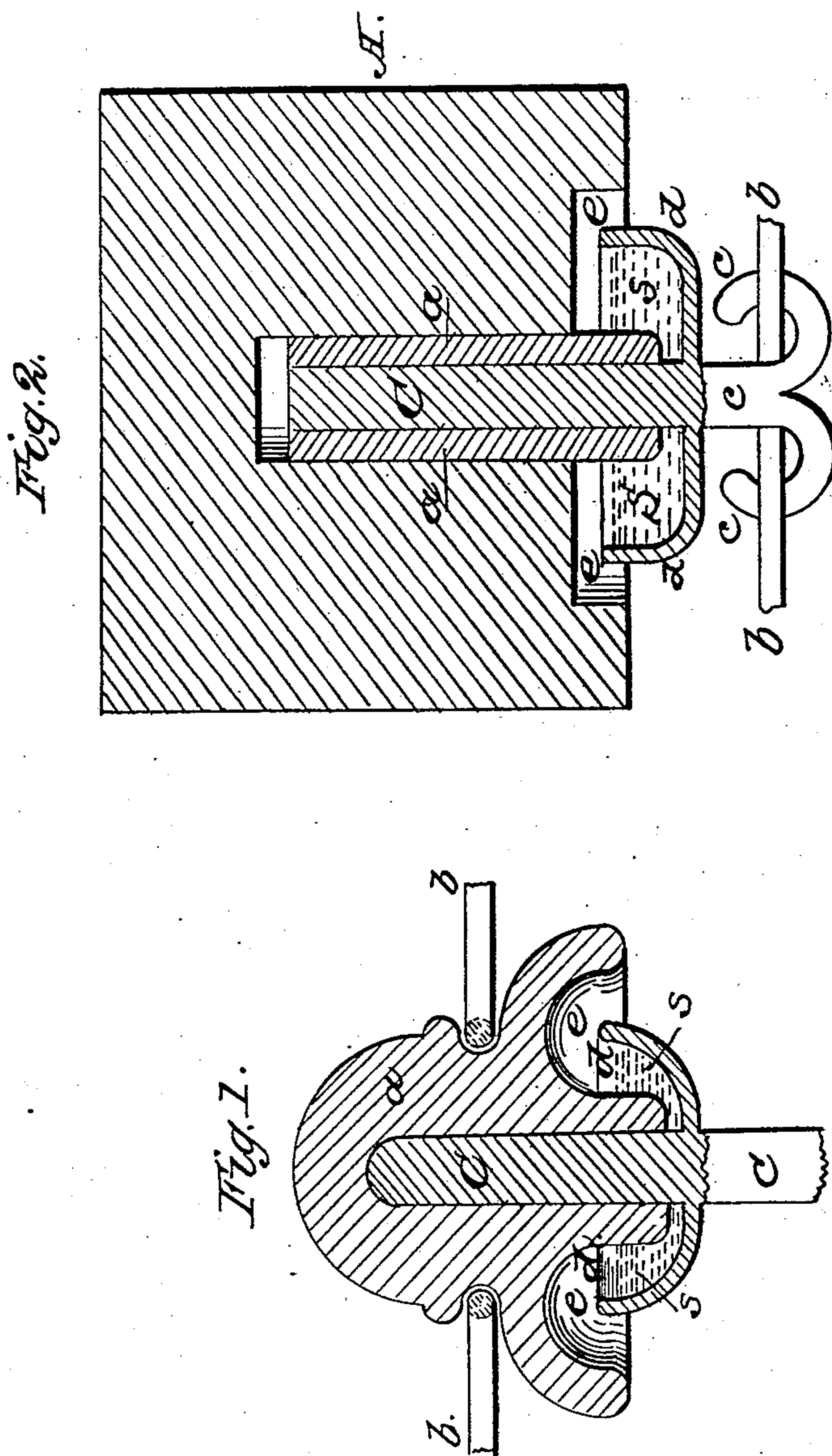


W. E. SIMONDS.
Telegraph Insulator.

No. 92,111.

Patented June 29, 1869.



Witnesses
Edwin C. Harow
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Letters Patent No. 92,111, dated June 29, 1869.

IMPROVEMENT IN TELEGRAPH-INSULATORS

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, W. EDGAR SIMONDS, of Hartford, in the county of Hartford, and State of Connecticut, have invented a new and useful Improvement in Telegraph-Wire Insulators; and I declare the following to be a full and exact description thereof, reference being had to the accompanying drawings, and to the marks of reference thereon forming a part of this specification.

In the drawings—

Figure 1 is a sectional elevation of an insulator, bearing my improvement, supported upon a standard or peg.

Figure 2 is a sectional elevation of what is commonly known as a "hook" insulator, bearing my improvement.

In fig. 1—

The letter *a* designates the insulator proper, which is made of glass, hard rubber, flint, or any other proper non-conducting material.

The letter *b* designates the line-wire, secured to the insulator proper, by any of the well-known methods.

The letter *c* designates the supporting-peg or standard, which is made preferably of malleable iron. Upon it is cast, or otherwise secured the cap *d*, whose edge or lip projects up into, but does not touch the groove *e*, in the bottom of the insulator proper.

The lower part of the insulator proper extends down into the cup, so as to nearly or quite touch the bottom.

Into the cup is placed, by pouring, while in a state of fusion, or by any other proper process, some non-conducting or insulating-substance, such as, for instance, and preferably, paraffine wax, which should not quite fill the cup.

This last-mentioned insulating-substance is designated in the drawings, (both figures,) by the letter *s*.

Any electrician or other person fairly skilled in telegraphy, or electrical science, will readily understand, from the above description, that the surface of the insulating-substance, *s*, is almost perfectly protected from the influence of the weather; and it is this arrangement and effect which constitutes the essential element of my invention claimed herein.

There are two kinds of telegraph-insulators in common use, the one kind supported on a standard or peg, and the other, often termed a "hook" insulator, where the line-wire is pendent from a hook, whose shank is screwed or otherwise fastened into the insulator proper, which, in its turn, is fastened into a wooden arm or block, or iron casing, or some substitute therefor.

I have already shown how my improvement is applicable to the former kind. I will now show how it is applied to the latter.

In fig. 2—

The letter *A* designates the wooden block, above

referred to, which might as well be the iron casing referred to, or its substitute.

The letter *a* designates the insulator proper, made of any proper non-conducting material, and which is fastened into the wooden block, or its equivalent, by any of the well-known methods.

The letter *c* designates the shank, which terminates, at the bottom, in a bifurcated hook, which supports the line-wire *b*.

The shank *c* is fastened into the insulator proper, firmly, by any of the well-known methods in common use.

On the shank *c* is cast, or otherwise secured, the cup *d*, which juts up into a shallow opening, *e*, in the bottom of the block *A*, but does not touch the block anywhere.

Thus the interior of the cup *d* is fully secluded and protected from the weather.

The insulator proper extends down into the cup, so as to nearly or quite touch the bottom.

Into the interior of the cup *d* is placed, by pouring, while in a state of fusion, or by any other proper process, any proper non-conducting material, as, for instance, and preferably, paraffine wax, which must not quite fill the cup *d*.

This last-mentioned insulating-substance is designated by the letter *s*, and, precisely as in fig. 1, its surface is protected from the weather.

It must be always understood, in applying my improvement to either form of insulator described herein, or to any equivalent form, that the standard or shank *c*, must be firmly fastened into the insulator proper, *a*, so that it will not shake or wobble in its socket in the least; otherwise the necessary continuity of contact between the insulator proper and the non-conducting substance *s*, will be disturbed, and consequently the insulation impaired.

If glass is employed for the material of the insulator proper, this rigid fastening can probably be attained by some modification of the process employed in making the well-known "Leffert's insulator."

If hard rubber is employed, some modification of the method employed in making the well-known hard-rubber "hook-insulator" will probably answer.

In any case, no part of my invention consists in doing this, as it has already been effected in different ways, but the successful working of my improvement depends upon its being well done.

In making the form of insulator shown in fig. 2, it is probably best to first fasten the shank into the insulator proper, then pour, or otherwise place the insulating-substance *s* in the cup, and lastly, fasten the insulator proper into the block *A*, or its equivalent.

In making the form shown in fig. 1, it will probably be best to first fasten the standard into the insulator proper, and then force such insulating-substances, as

paraffine wax, and the like, into the cup, through a tube, while in a state of fusion.

In using, for this purpose, material which does not admit of such treatment, it will probably be best to place the insulating-substance in the cup, and then fasten the standard into the insulator proper, making the whole one continuous operation.

I am well aware that the cup *d*, formed, constructed, and used in the manner described, is an invention made prior to the date of this specification, but the extension of the insulator proper down into the cup, so as to nearly or quite touch the bottom, and the placing of an insulating-substance, *s*, in the cup, and around such extension of the insulator proper, so as to form an unbroken, continuous surface, from the insulator proper to the inside of the cup, over which the electricity must pass, in order to escape, is a new thing, and is my invention.

I claim as my invention—

1. As a new article of manufacture, a telegraph-wire insulator, having an insulating-substance, *s*, interposed, in the manner described, between the insulator proper, *a*, and the cup *d*, the whole being arranged and constructed as described, for the purpose described.

2. The combination, herein described, of the insulator proper, *a*, constructed as described, the insulating-substance *s*, and the cup *d*, the whole constructed, arranged, and operating as described for the purpose described.

Dated May 14, 1869.

W. EDGAR SIMONDS.

Witnesses:

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