

(No Model.)

C. G. GRAHAM.
LINE WIRE INSULATOR.

No. 408,383.

Patented Aug. 6, 1889.

Fig. 1.

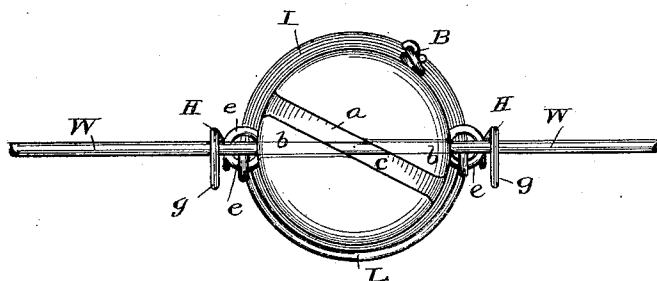


Fig. 2.

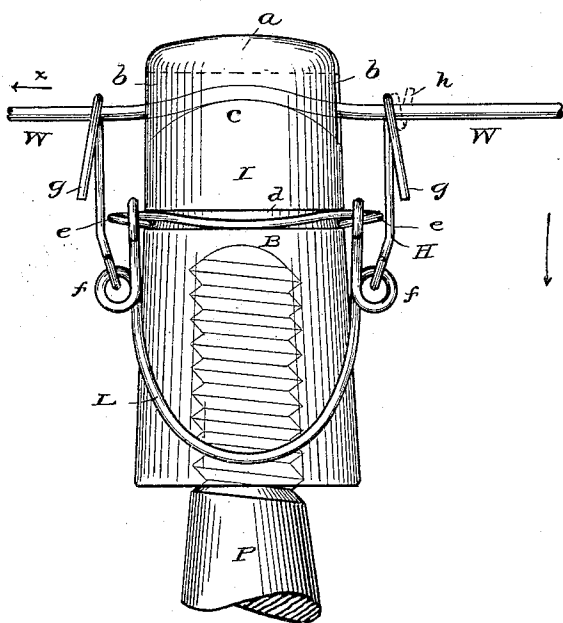
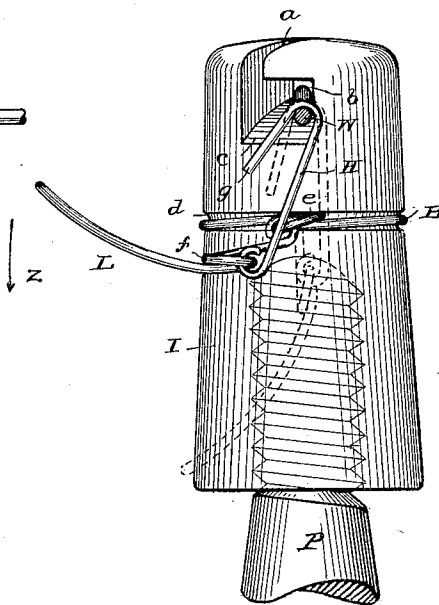


Fig. 3.



Witnesses

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LINE-WIRE INSULATOR.

SPECIFICATION forming part of Letters Patent No. 408,383, dated August 6, 1889.

Application filed January 26, 1889. Serial No. 297,701. (No model.)

To all whom it may concern:

Be it known that I, CARROLL G. GRAHAM, a citizen of the United States, and a resident of Marion, in the State of Iowa, have invented a new and useful Improvement in Line-Wire Insulators, of which the following is a specification.

This invention relates to means for attaching overhead wires to insulators in telegraph and telephone lines. Its objects are, first, to provide for quickly fastening and unfastening the line-wire in erecting new lines and removing old ones; secondly, to provide for more securely fastening the line-wire against end-wise strain at will, as when work on an unfinished line is suspended, and, thirdly, to preserve the insulation of the line-wire should the metallic fastenings become broken or unlocked, as by storms.

The invention consists in certain novel combinations of parts hereinafter set forth and claimed.

A sheet of drawings accompanies this specification as part thereof.

Figure 1 of the drawings represents a top view of an insulator having a line-wire fastened therein according to this invention. Fig. 2 represents a side elevation of the same, and Fig. 3 represents another side elevation illustrating the fastening operation.

Like letters of reference indicate corresponding parts in the several figures.

The insulator proper (marked I in the drawings,) is intended to be made of glass, of thimble shape, and of any approved proportions, and to be screwed fast upon a wooden plug P, and widened somewhat toward its lower end, as represented, so that water shall drip from its outer edge away from the plug.

The upper end of the insulator is provided with a diametrical "slot" or deep notch *a*, and the latter in turn with diagonally-opposite lateral recesses *b* and a convex bottom *c*, said recesses forming an oblique passage through the insulator, as indicated in Fig. 1, in a plane above the apex of the convex bottom *c* and from this plane downward to the bottom on both sides of the insulator, as shown in Figs. 2 and 3. Below said bottom *c* of the notch *a* and recesses *b* the insulator is provided with a circumferential groove *d*, in which a wire band B is made fast. This band is provided

below the respective recesses *b* with horizontal loops or eyes *e*, which interlock with terminal eyes at the extremities of a bail-shaped wire lever L. This is in turn provided with eyes *f*, projecting outward at right angles to said terminal eyes. A pair of wire hooks H, coupled by terminal eyes to said eyes *f* of the lever L, and having their rebent free extremities *g* elongated several diameters, complete the device as an article of commerce.

The insulator I is set with its slot or notch *a* obliquely across the course of the line-wire W, so as to align with the latter said oblique passage formed by the recesses *b*, as represented in Fig. 1. The line-wire is lifted above the insulator, and the portion conveniently grasped by the two hands is readily brought in line with the notch *a* and lowered into it. The tension on the wire (represented by the arrow *x*, Fig. 2) brings it immediately into the recesses *b*. The lever L is then turned upward toward or against the line-wire, the hooks H are interlocked with the line-wire in the direction indicated in Fig. 3, and the lever is then turned downward against the insulator, as represented by the arrow *z* and dotted outlines in Fig. 3. In reaching the position indicated by full outlines in Fig. 3, the lever L, through the hooks H, bends the line-wire W over the convex surface *c* in the insulator I, as represented in Figs. 2 and 3. In passing from this position to the position of rest indicated by dotted outlines in Fig. 3 the pivotal centers formed by the eyes *f* pass behind lines drawn from the line-wire through the pivotal centers formed by the eyes *e*, and the device thus becomes self-locked. To unlock it, as in removing a line-wire, the lever L is simply turned in the reverse direction, and the whole thing may ordinarily be used again and again until some part becomes destroyed by oxidation.

Should the linemen leave the line unfinished, the extremity *g* of the outermost hook H may be given a turn or two around the line-wire by means of pliers, as indicated by dotted outlines at *h* in Fig. 2. The coil of wire may then be dropped at the pole.

Should the fastening become in any way unlocked or broken, as by excessive strains in storms, the portions of the insulator which overlie the recesses *b*, and which may be made

of any required strength, prevent the escape of the line-wire, even if the strain thereon be upward, and thus add materially to the security of the fastening.

5 I have described in detail the materials and construction which I deem best for the respective parts, but do not limit my several claims to such details, except as therein expressly stated.

10 Having thus described said improvement in line-wire insulators, I claim as my invention and desire to patent under this specification—

1. In combination with an insulator having an internal convex surface and a notch in its top admitting the line-wire thereto, and provided with a pair of pivots below said convex surface, a bifurcated lever turning on said pivots and a pair of hooks pivotally attached to said lever and engaging with the line-wire at the respective sides of the insulator, substantially as hereinbefore specified.

2. The combination, with an insulator having an internal convex surface and a notch

in its top admitting the line-wire thereto, and provided with a pair of pivots below said convex surface, and a self-locking lever turning on said pivots, of a pair of hooks pivotally attached to said lever and engaging with the line-wire at the respective sides of the insulator, and having elongated extremities, either of which may be wrapped around the line-wire to secure the fastening, substantially as hereinbefore specified.

3. An insulator having an internal convex surface, a diametrical notch in its top admitting the line-wire thereto, diagonally-opposite recesses forming an oblique passage through the insulator below solid overlying portions thereof, and provided with a pair of pivots below said convex surface and in line vertically with said recesses, respectively, substantially as hereinbefore specified.

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Witnesses:

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