

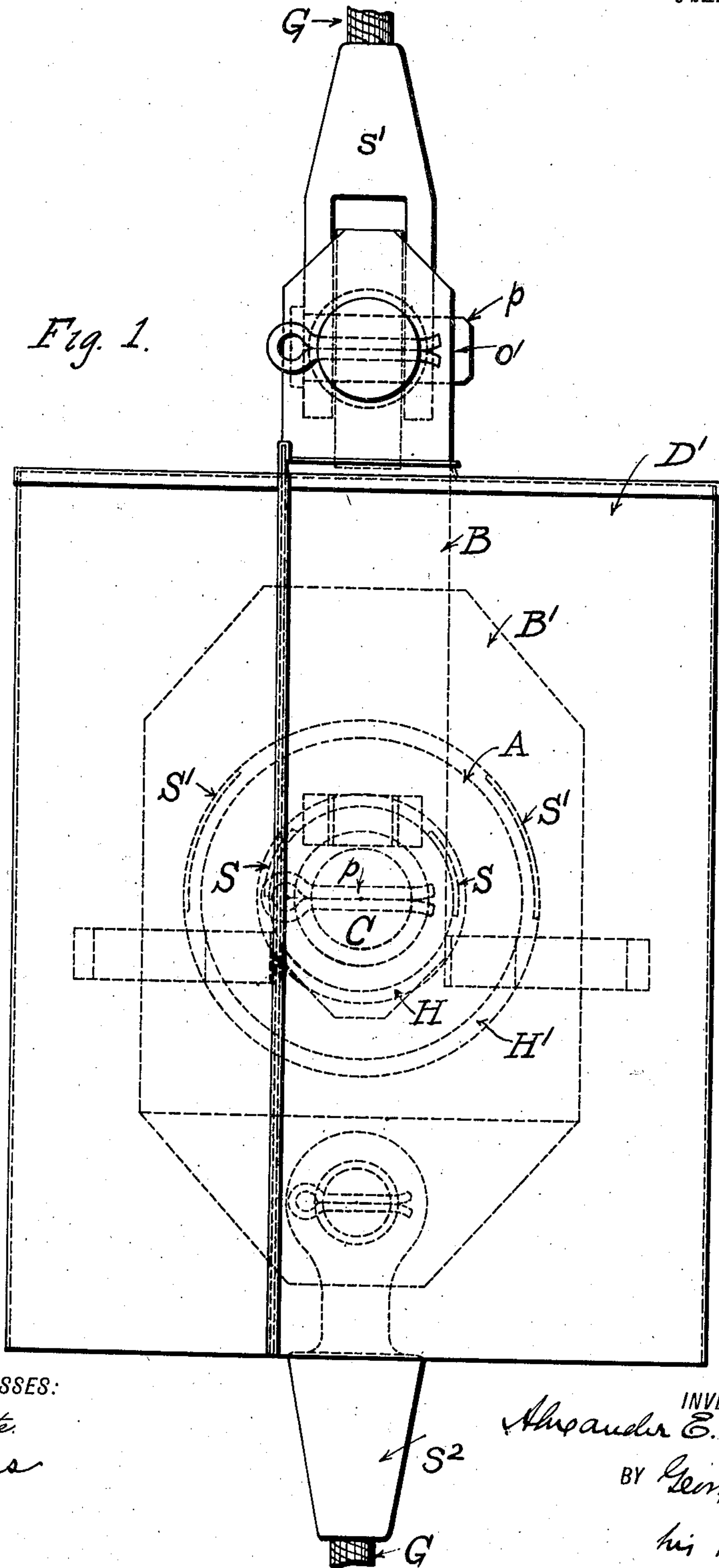
No. 847,546.

PATENTED MAR. 19, 1907.

A. E. BROWN.
INSULATOR FOR TENSION GUYS.

APPLICATION FILED AUG. 3, 1906.

3 SHEETS—SHEET 1.



WITNESSES:

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L. Phillips

INVENTOR

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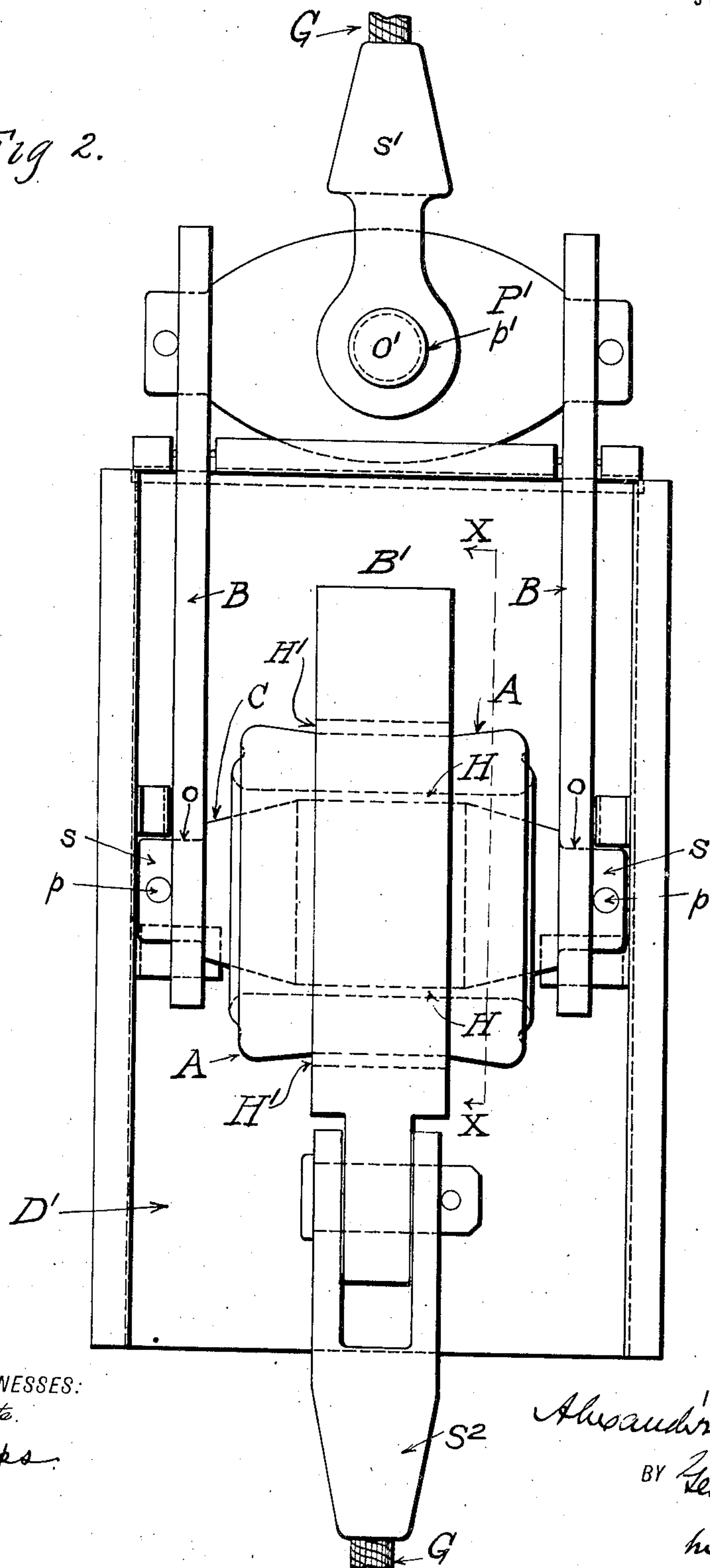
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Fig 2.



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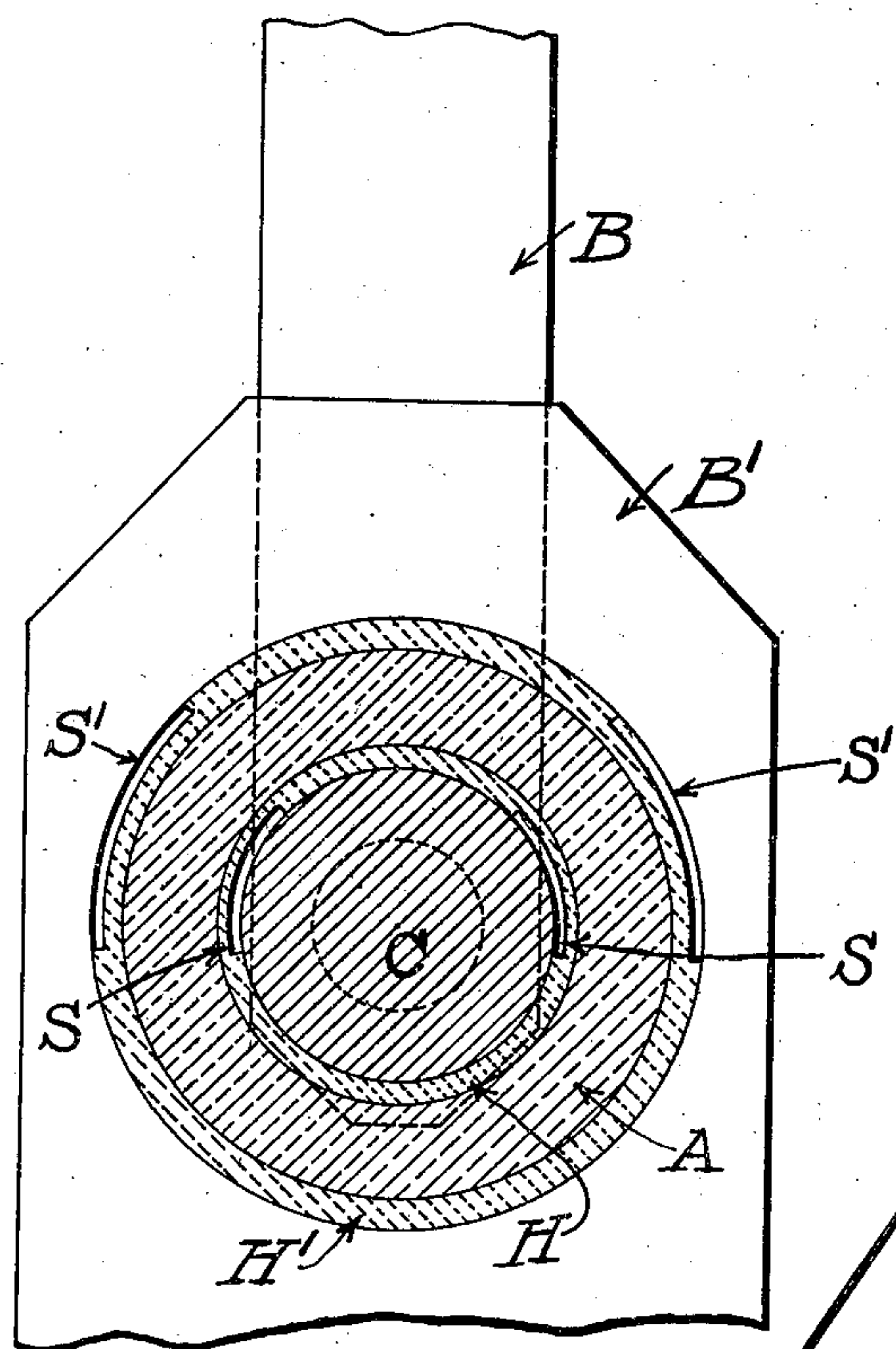


Fig 3

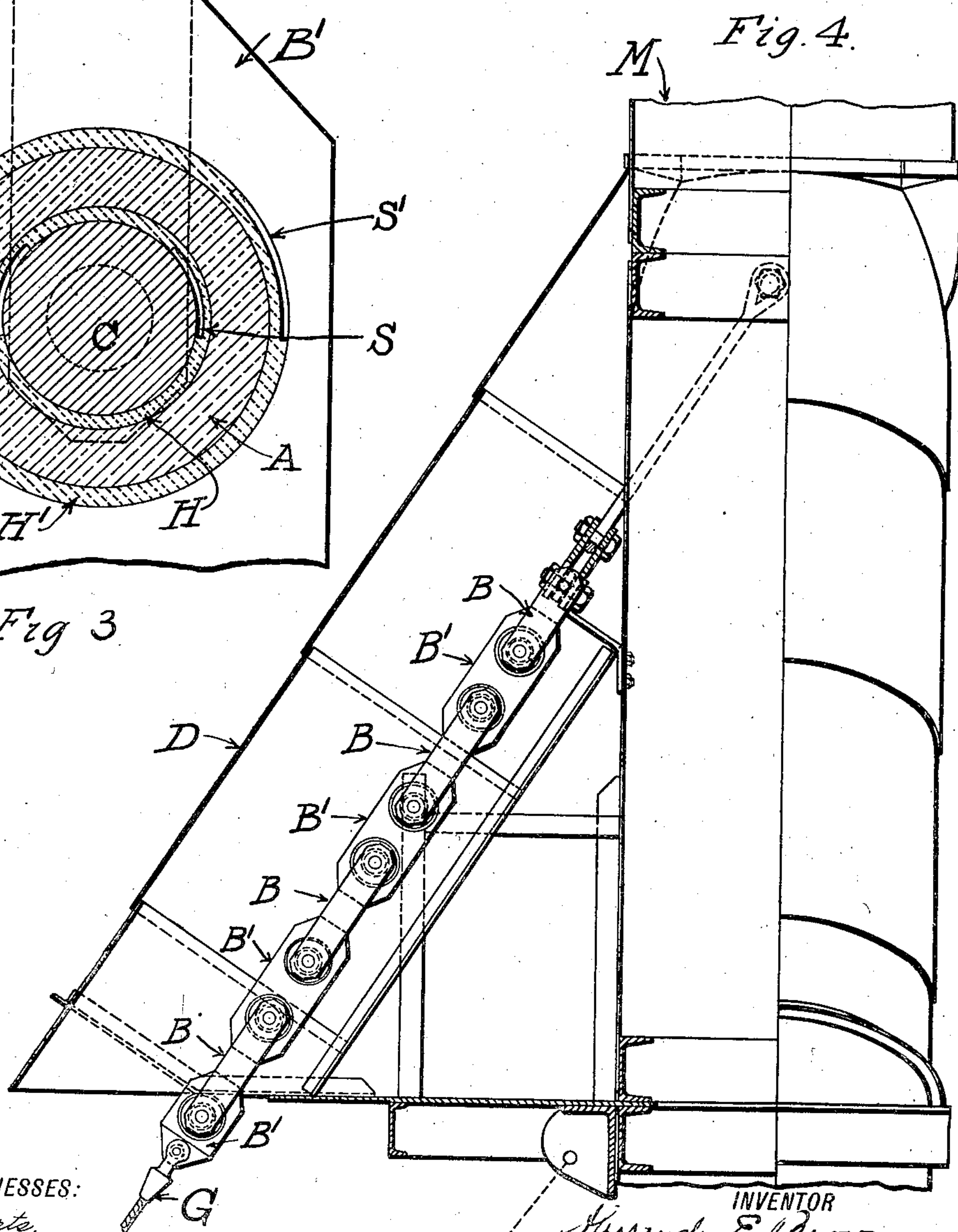


Fig. 4.

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UNITED STATES PATENT OFFICE.

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INSULATOR FOR TENSION-GUYS.

No. 847,546.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed August 3, 1906. Serial No. 329,098.

To all whom it may concern:

Be it known that I, ALEXANDER E. BROWN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Insulator for Tension-Guys; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which make a part of this application and wherein the same parts are in each case denoted by the same referential letters.

The invention relates, primarily, to the means employed generally for the purpose of sustaining and holding in place electrically-charged bodies or conductors; but more specifically and as illustrated and described in the present instance to such means when used in connection with the guys of electrical masts—of the kind, for instance, used in space or wireless telegraphy and which is shown and is the subject-matter of the applications by me for a United States patent, filed August 3, 1906, bearing Serial Nos. 329,097 and 329,099. In uses of this sort, by reason of the extreme length and consequent weight of the supporting-guys employed and the heavy wind-pressure to which they are exposed, the strain upon the intermediate insulating members of such guys is so great that ordinary insulators—such as used, for instance, in connection with trolley-wires—must collapse under the same and be wholly unfit for the purpose.

It is the purpose and object of my present invention to provide an insulator that will withstand these high strains in whatsoever situations and to whatsoever conditions they are subjected.

I will now proceed to explain the insulator in question by reference to the several drawings, wherein—

Figure 1 represents a side view of an insulator within its protecting-hood; Fig. 2, a top view of the same when the top of the hood referred to is withdrawn; Fig. 3, a sectional view through the lines *xx* of Fig. 2; and Fig. 4, the insulator arranged in a guy, in pairs or sets of two, in series at the point of connection of the guy with the mast.

A is a hollow spool-shaped cylinder, of porcelain or other non-conductive material, within which in the first instance is loosely fitted the axial steel pin C, terminating at each end in the shoulders *s*, provided with the cotter-

pin holes *p*. Said shoulders *s* are adapted to fit, respectively, into holes *o o* in the ends of the parallel bars B B. These bars are held in their relative positions by the pin C at their one end and a similar shouldered pin C' at the other end. The pin C' is provided with a central aperture at *o'*, whereby a rope-socket *s'* is connected to the same by means of the pin *p'*.

G represents the guy in partial disclosure.

The pin C when in its axial position interiorly with respect to the cylinder A, with the centers of the two parts coincident throughout their length, is surrounded by and firmly cemented in such position throughout said interior by some fluent material—like sulfur—that is non-compressible and expands instead of contracts when it cools and hardens. Such surrounding material or packing for the pin C is represented in the drawings by H.

B' is a stiff coupling-bar that in the first instance loosely receives and links onto the cylinder A through apertures for the purpose in opposition to the bar B. The bars B' engages or surrounds the cylinder A centrally thereof through an interposed packing H', of material having the same qualities as is above specified for the packing or cement H and which is to hold said bar firmly in place. S² is a rope-socket connected to said bar at its outer end.

In order to prevent the communication to the side walls of the cylinder A of any motion of the parts B and B' due to elongation of the metal composing the same and compression of the filling material or packing H H', that would subject the same to a detrimental tensile strain, a sufficient space or area S and S' is left on the compressible side of the pin C in the interior surface of the packing H and the exterior surface of the packing H' on either side of said pin throughout the length of said packings. These spaces are best located by extending the same around the inner and outer surfaces, respectively, of the packing H and H' on said compressible side to about forty-five degrees from a plane that passes through the center line of the pin C at right angles to the direction of the tension or pull of the guy.

M is a portion of a mast in connection with which the form of insulator is shown as used in Fig. 4.

I find it extremely desirable to accompany

the invention proper with a suitable form of hood or covering to protect the same against impairment by the elements, and in consequence combine with the insulator as one form of the invention such a hood or covering as indicated by D and D', D being the hood adopted at the mast-terminal of the guys G, and D' those above the insulators as severally disposed throughout the guys between their terminals. Said hoods may assume any appropriate form to overhang the insulators and shield them from snow, rain, and ice. In the drawings the hood D entirely surrounds the mast like an inverted funnel where the several guys are attached to the same and incloses any insulators that are there as a part of the guys. The intermediate hood D' along the guys are shown as box-shaped arrangements around the insulators. In both cases these hoods are of course given interior dimensions and configurations proportioned to the voltage to be used and so that they will not short-circuit the insulators.

As will be readily perceived by the arrangements just described, I obtain an insulator proper wherein the axial pin necessary for its support and connection is immutably fixed and seated within said insulator by reason of the expanded and rigid packing that has been allowed to flow around said pin when in place and hardened. A complete bearing is thus obtained for such pin and a fixity in its relation to the insulating material and part that is indispensable in dealing with such material under the conditions supposed. In addition by reason of the exterior and interior spaces, respectively, in the packing H and H' as provided for the creeping tendency of the two packings due to excessive compression strains is fully provided for and by a rule that correlates said spaces with respect to dimension and place with complete precision.

What I claim, and desire to secure by Letters Patent, is—

1. An insulator for tension-guys made up of a hollow insulating member, an axial pin, or part, passing through the same, with its center or axis substantially coincidental with that of said member, and firmly held or cemented in such relation to said member a substantially non-compressible material, together with an outer circumferential coating of like material, the said non-compressible material having sufficient spaces or areas in their sides to compensate or allow for any tendency on their part to creep when subjected to compression strains, all substantially as shown and described.
2. In an insulator for tension-guys, the combination of a hollow insulating member, carrying a coat of a substantially non-compressible material, and an axial supporting-pin or part passing through the same with its center or axis substantially coincidental with that of said member and firmly cemented in such position by a surrounding coating or packing of like material, the said material, or coating, in each case containing spaces or areas sufficient to allow for or take up the tendency of the same to creep when under compression, substantially as shown and described.

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In presence of—
A. M. MERRYWEATHER,
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2. In an insulator for tension-guys, the combination of a hollow insulating member, carrying a coat of a substantially non-compressible material, and an axial supporting-pin or part passing through the same with its center or axis substantially coincidental with that of said member and firmly cemented in such position by a surrounding coating or packing of like material, the said material, or coating, in each case containing spaces or areas sufficient to allow for or take up the tendency of the same to creep when under compression, substantially as shown and described.

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