No. 883,397. PATENTED MAR. 31, 1908.

# W. T. GODDARD & J. S. LAPP.

## INSULATOR

APPLICATION FILED JULY 29, 1907.

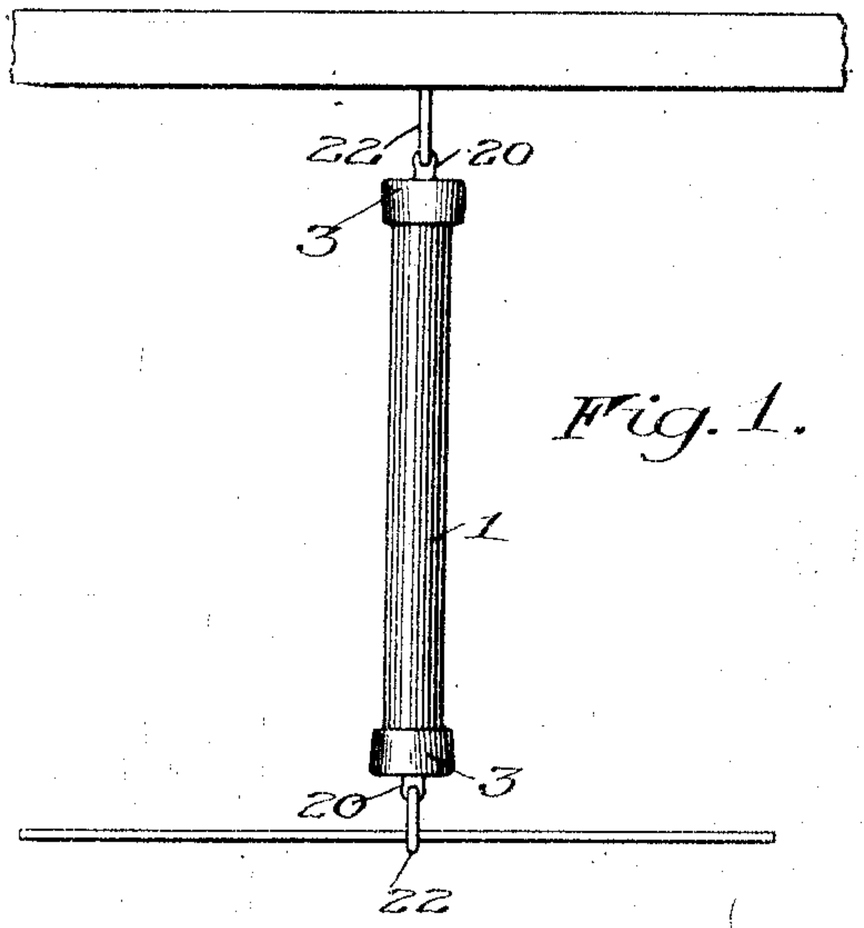



Fig. 1.

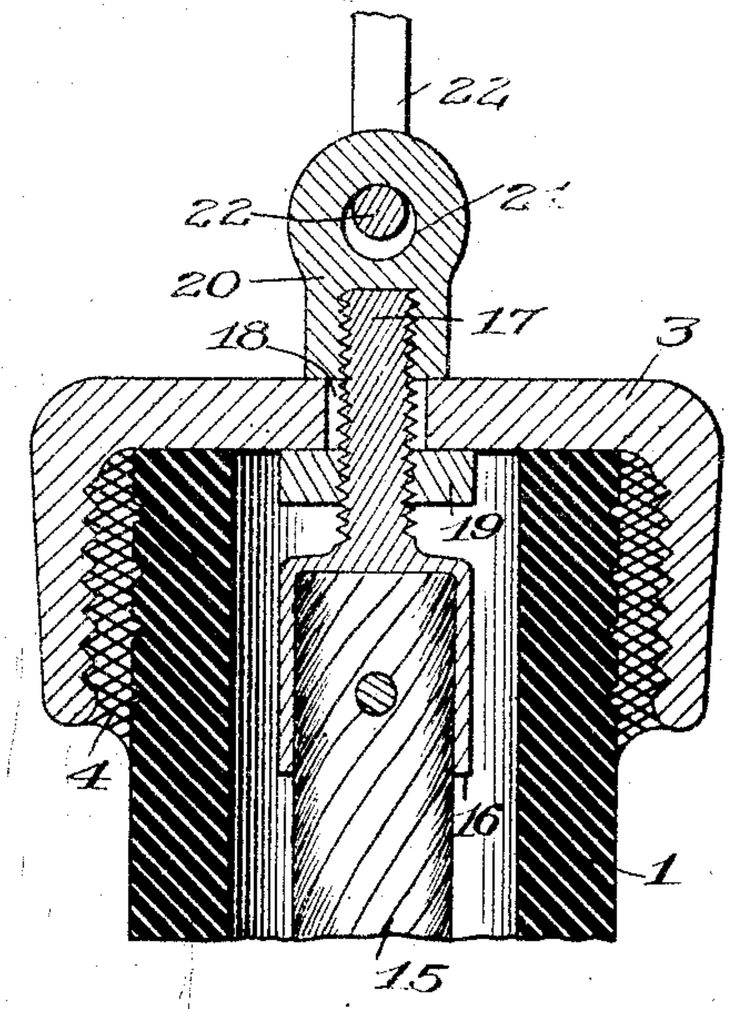



Fig. 3.

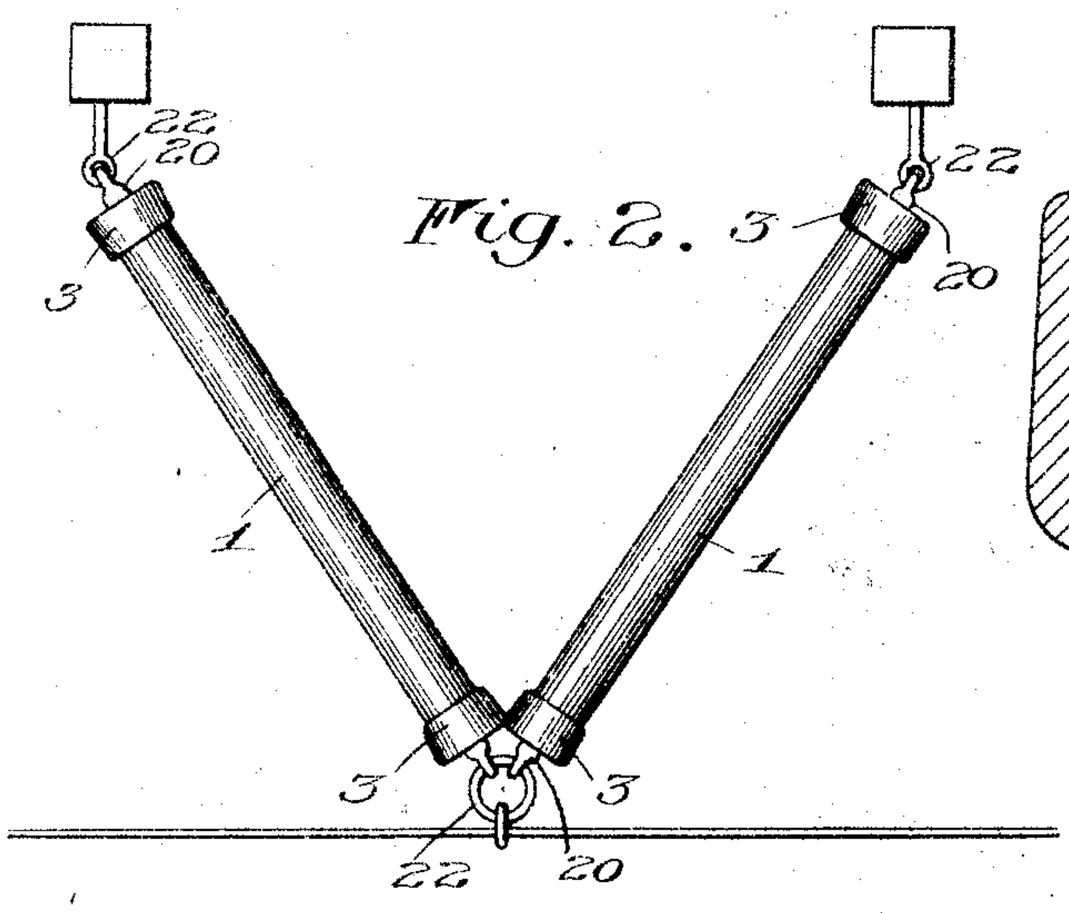
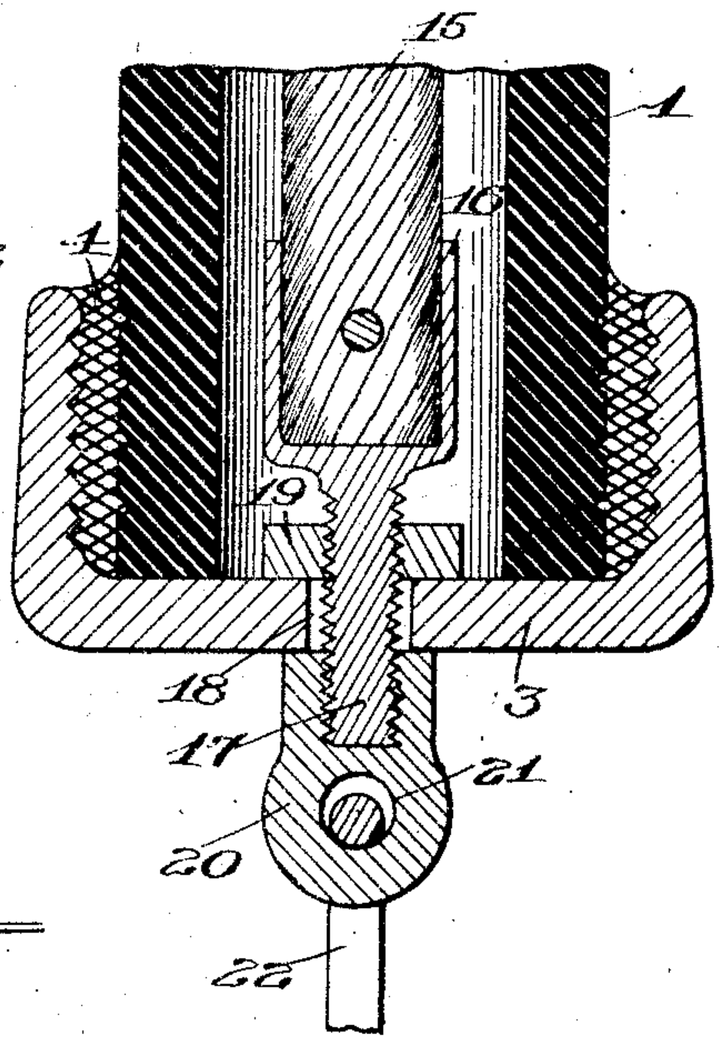



Fig. 2.




Witnesses
Walter F. Payne.
F. C. Dietrich

Inventors
Walter T. Goddard
John S. Lapp
By Church & Rich
their Attorneys

# UNITED STATES PATENT OFFICE.

WALTER T. GODDARD AND JOHN S. LAPP, OF VICTOR, NEW YORK, ASSIGNORS TO THE LOCKE INSULATOR MANUFACTURING COMPANY, OF VICTOR, NEW YORK, A CORPORATION OF NEW YORK.

## INSULATOR.

No. 883,397. Specification of Letters Patent. Patented March 31, 1908.

Application filed July 29, 1907. Serial No. 385,947.

*To all whom it may concern:*

Be it known that we, WALTER T. GODDARD and JOHN S. LAPP, of Victor, in the county of Ontario and State of New York, have invented certain new and useful Improvements in Insulators; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

This invention relates to insulators of the type used for suspending conductors.

An insulator element having a maximum length and a minimum cross section is very desirable in a suspending insulator, but owing to the fact that the material of which these elements are made has very little tensile strength, this form has not been used, and it, therefore, is an object of this invention to provide a construction of insulator which will permit the use of such an element.

To these and other ends the invention consists in certain improvements and combinations and arrangements of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of this specification.

In the drawings: Figure 1 is a side view of an insulator constructed in accordance with this invention and showing one manner of using the same. Fig. 2 is a view showing another manner of using the insulator. Fig. 3 is a broken longitudinal section of the insulator.

In the embodiment of the invention shown, 1 indicates a long, narrow tubular insulating element of comparatively low tensile strength, such as porcelain corrugated transversely if desired to prevent continuous film of moisture. Arranged within this tube is a tension member which is connected to heads in the form of caps 3 closing the ends of the tube and being secured thereto by any suitable means, as cement 4, the opposed faces of the tube and caps being roughened to hold the cement. The tension member preferably comprises an insulating element 15 made of a material having a high tensile strength, preferably asbestos or other inorganic fibrous material made into rope form, and secured to the caps 3 in a manner to sustain the tension on the insulator independently of the tubular insulating element. The securing means in this instance consists of cap pieces 16 fitted on the insulating element 15 and each having a screw threaded extension 17 which passes through an opening 18 in one of the caps 3 and has fitted thereto a nut 19 engaging the inner face of the cap and a nut 20 engaging the outer face of the same and provided with an eye 21 to receive a ring 22 or other attaching device by which the insulator is secured. The securing means of the tension member is so adjusted by the nuts 19 and 20 that most all of the tension on the insulator is placed on the tension member and very little is sustained by the insulating element 1 and as a consequence the life of the insulator is increased.

It will be apparent that with the present invention the advantages of both insulating elements have been secured without the disadvantages of either, for while the fibrous material has greater tensile strength than the porcelain tube, the latter will not absorb moisture and as it incloses the fibrous material, will prevent it becoming wet.

We claim as our invention.

1. In an insulator, attaching devices, and a pair of tension elements made of insulating material connecting the attaching devices and having different tensile strength.

2. In an insulator, attaching devices, a tension element made of insulating material connecting said devices, and an insulating element surrounding the first mentioned element.

3. In an insulator, attaching devices, a tension member made of insulating material connecting said devices, and a tubular insulating element surrounding said member throughout the length of the latter.

4. In an insulator, attaching devices, a fibrous insulating element connecting said devices, and a tubular, insulating element surrounding the fibrous element.

5. In an insulator, a pair of attaching devices, an asbestos rope connecting said devices, and a tubular insulating element surrounding the rope.

6. In an insulator, a tubular insulating element, heads at the ends of said element, and an insulating tension member arranged within the tubular element and connecting said heads.

7. In an insulator, a tubular insulating element, and a tension element made of insulating material arranged within the tubular element.

8. In an insulator, a tubular insulating element, caps secured to the ends of said insulating element, and a fibrous insulating element connecting the caps.

9. In an insulator, a tubular insulating element, caps secured to the ends of said insulating element, and a non-conducting tension member connecting the caps.

10. In an insulator, a tubular insulating element, and an asbestos rope surrounded by the insulating element and acting to sustain the tension on the insulator.

11. In an insulator, a tubular insulating element, caps secured to the ends of the insulating element, an asbestos rope within the tubular element, cap pieces on the ends of the rope, having threaded extensions extending through the caps, and nuts on said extensions engaging the inner and outer faces of the caps.

12. In an insulator, a long narrow tube made of insulating material, attaching devices arranged at the ends of the tube, and an insulating tension member connecting said attaching devices.

WALTER T. GODDARD.
JOHN S. LAPP.

Witnesses:
WILLIAM W. STANLEY,
BRIDGET J. MCGRAW.