J. ALSBERG.

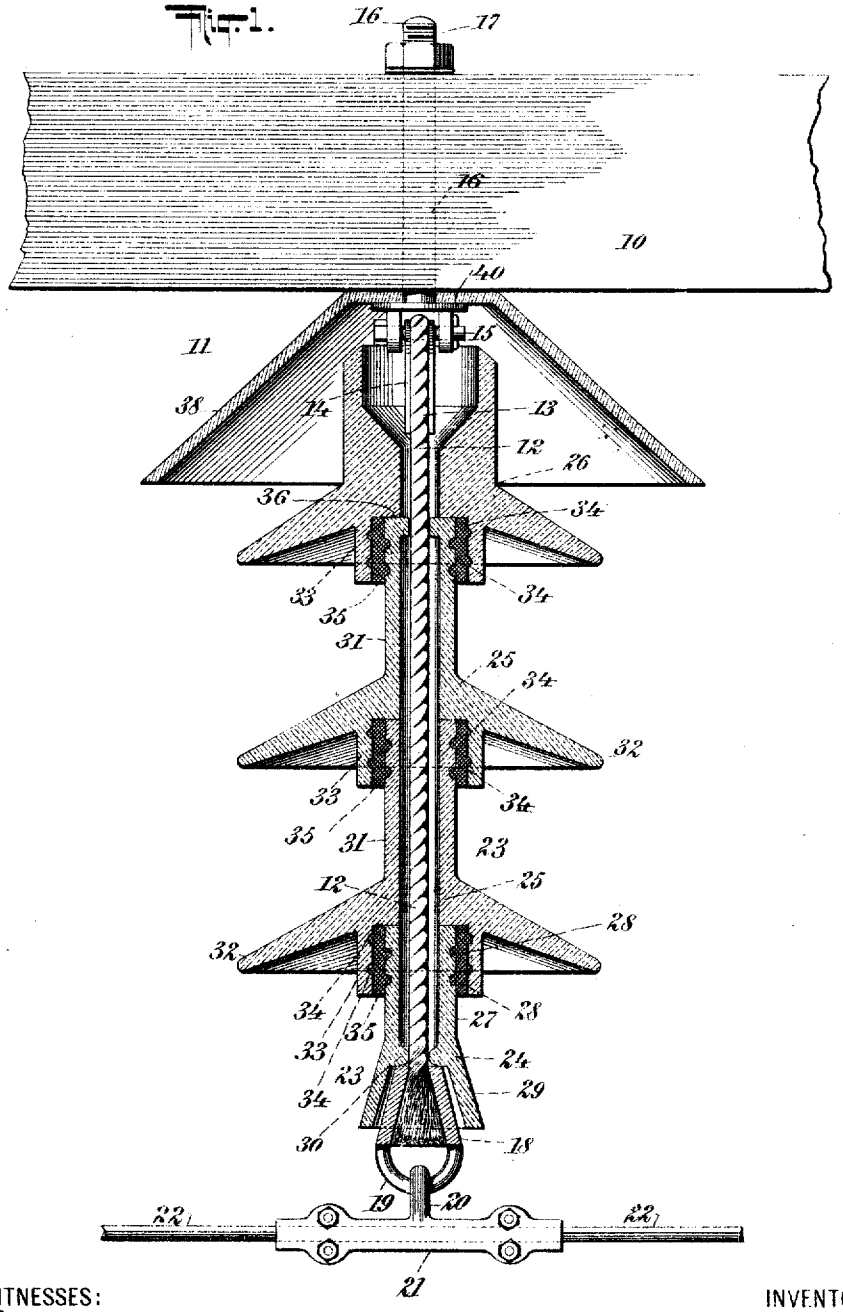
INSULATOR.

APPLICATION FILED JUNE 17, 1909. RENEWED JUNE 13, 1911.

1,006,042. **Patented Oct. 17, 1911.**

2 SHEETS SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

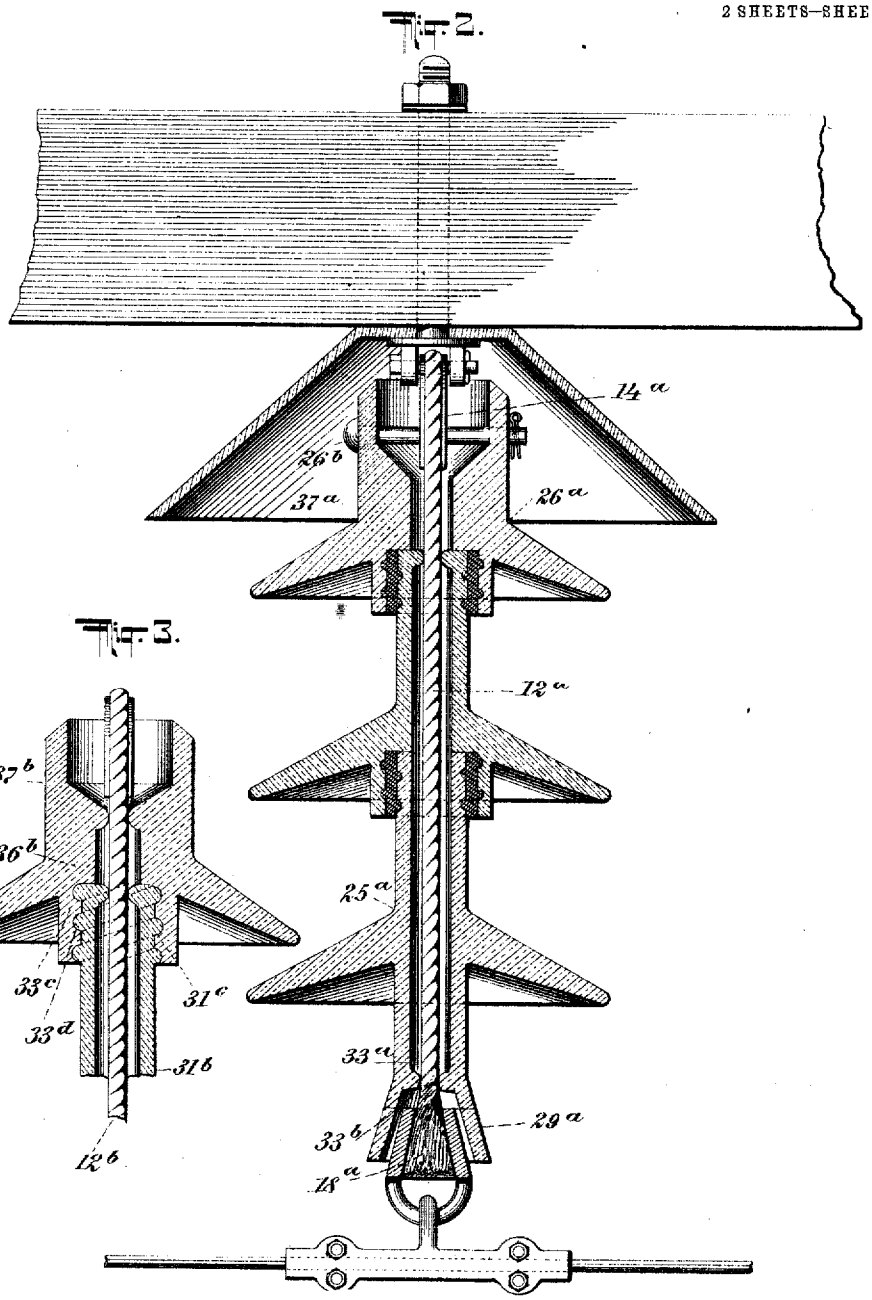

Fig. 3.

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INSULATOR.

1,006,042. Specification of Letters Patent. Patented Oct. 17, 1911.

Application filed June 17, 1909, Serial No. 502,647. Renewed June 13, 1911. Serial No. 632,962.

To all whom it may concern:

Be it known that I, JULIUS ALSBERG, a citizen of the United States, residing at the city of New York, borough of Manhattan, in the county and State of New York, have invented certain new and useful Improvements in Insulators, of which the following is a full, clear, and exact specification.

My invention relates to means for supporting electric conductors, and the same has for its object more particularly to provide a simple, efficient and durable insulator for supporting electric conductors, and more especially for supporting conductors for high potential currents.

Further, said invention has for its object to provide an insulator comprising an insulating element, and a protector therefor entirely surrounding and inclosing the same but free therefrom.

Further said invention has for its object to provide an insulator comprising an insulating element, and a tubular or cylindrical protector therefor having a plurality of superposed petticoats.

Further, said invention has for its object to provide an insulator comprising an insulating element, and a tubular protector therefor composed of a series of sections or units rigidly secured together, and each provided with outwardly flaring portions or petticoats.

To the attainment of the aforesaid objects and ends my invention consists in the novel details of construction, and in the combination, connection and arrangement of parts hereinafter more fully described, and then pointed out in the claims.

In the accompanying drawings forming part of this specification, wherein like numerals of reference indicate like parts, Figure 1 is a central vertical section showing one form of insulator made according to, and embodying my said invention; Fig. 2 is a similar view showing a modified construction of protector, and means for supporting the same, and Fig. 3 is a detail central sectional view showing a modified means for securing the protecting sections or units together.

In said drawings 10 designates a horizontal support or arm, and 11 an insulator comprising an insulating element consisting essentially of threads or filaments composed of spun glass, or any other substance possessing the characteristics of glass, twisted together in the form of a rope or cable 12. One end of said insulating element 12 is spliced into the main portion to form a loop 13 within which is secured an eye 14 adapted to receive a pin 15 secured in the lower bifurcated end of a bolt 16 extending through the arm or support 10, which bolt is secured to said support by a nut 17 engaging the upper threaded end thereof. The lower or free end of said insulating element 12 is frayed out and secured by cement or other suitable means within a socket 18. The socket 18 is provided at its lower end with an eye 19 adapted to receive an eye 20 of a clamp 21 in which is secured a conductor 22. 23 denotes a tubular or cylindrical protector loosely surrounding said insulating element 12 but free therefrom, said protector may be made either in one piece or by preference of a series of sections or units 24, 25, 26, rigidly secured together. The lowermost section 24 consists of a tubular portion 27 provided upon its outer surface adjacent to its upper end with annular grooves or recesses 28 28, and adjacent to its lower end with an outwardly flaring portion 29. Upon the inner side of said lowermost section 24 at about the junction of its tubular and flaring portions is arranged an inwardly extending rim or shoulder 30 adapted to rest upon the upper edge of the socket 18 in order to support said lowermost section 24, and the sections 25, 25, and 26 disposed thereon, and at the same time maintain said lowermost section 24 in position upon, and surrounding the lower end of the insulating element 12, with its tubular portion 27 free therefrom. Upon the upper end of said lowermost section 24 is supported the series of protecting sections 25, 25, 26. Each of the sections 25 25 is composed of a tubular portion 31 provided near its lower end with an outwardly flaring petticoat 32, in the underside of which is arranged a centrally located socket-portion 33 having annular grooves 34 34 in its inner side.

The socket portions 33 33 33 of the sections 25, 25, 26 are each adapted to receive the upper end of the tubular portion of the adjoining protecting section, and be secured rigidly thereto by cement 35 or other suitable securing medium disposed within said socket portion, and surrounding the end of the adjoining tubular section therein.

The upper end of the tubular portion 31 of the uppermost section 25 is provided upon

its inner side with an inwardly extending rim or bead 36 adapted to contact with the insulating element 12 adjacent to its uppermost protecting sections 25 26 duly in position around said insulating element and free therefrom.

The protecting section 26 is constructed essentially like the sections 25 25 arranged thereunder except that its upper tubular portion 37 is made shorter and larger in diameter, in order to accommodate the looped upper end 13 of said insulating element 12, and partly inclose the same, and the lower end of the bolt 16 from which the insulator as a whole is suspended.

38 denotes a conical protecting hood which may be made of metal or preferably of insulating material, having a flat portion 39 at its top, and secured in position above said insulating element 12, and its protector 23 by the bolt 16 intermediate the underside of the head 40 of said bolt and the underside of the arm or support 10.

The protecting sections 24, 25, 26 may be made of any suitable material, but by preference of glass, porcelain or other insulating material, and rigidly secured together in any convenient manner, and provided with means adjacent to the upper and lower ends of said insulating element 12 with projections or other means for maintaining the tubular protector 23 as a whole in position upon, and surrounding said insulating member, and free therefrom.

In the modification illustrated at Fig. 2, the insulator as a whole is constructed essentially as hereinabove described, and as shown at Fig. 1, except that in this instance the lowermost protection section 25^a is not supported upon the socket 18^a but is free therefrom, and is provided upon the inner side of its socket portion 33^a with an inwardly extending rim or head 33^b adapted to contact with the insulating element 12^a adjacent to its lower end and below said head with a flaring portion 29^a. The uppermost protecting section 26^a is provided with a supporting pin 26^b which passes through the tubular portion 37^a thereof, and through the eye 14^a secured within the upper looped end of the insulating element 12^a. The pin 26^b is adapted to rest in the lower end of the eye 14^a, and support the connected protecting sections suspended therefrom.

The modification illustrated at Fig. 3, is adapted to be used with either of the arrangements shown at Figs. 1 and 2. In this construction, however, the socket portion 33^c of each protecting section is provided upon its inner side with screw threads 33^d, and the upper end of the tubular portion 31^b of each protecting section is provided upon its outer surface with screw threads 31^c which are adapted to engage with the screw threads 33^b whereby to secure the adjoining protecting sections rigidly together, and in position loosely surrounding the insulating element 12^b.

It will be noted that by means of the constructions herein shown and described, insulators may be made of different sizes or lengths by merely increasing the length of the insulating member, and then connecting together a sufficient number of protecting sections to properly inclose the same, and that the protecting sections or units may be made of any suitable material, or combinations of materials.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:—

1. An insulator comprising a flexible insulating element, and tubular protecting means surrounding said insulating element and free therefrom, substantially as specified.

2. An insulator comprising a flexible insulating element, tubular protecting means surrounding said insulating element, and means for maintaining said protecting means free from said insulating element, substantially as specified.

3. An insulator comprising a flexible insulating element, tubular protecting means formed of insulating material surrounding said insulating element, and means for maintaining said protecting means free from said insulating element, substantially as specified.

4. An insulator comprising a flexible insulating element, tubular protecting means surrounding said insulating element, and means arranged at the ends of said tubular protecting means for maintaining the same free from said insulating element, substantially as specified.

5. An insulator comprising a flexible insulating element, tubular protecting means surrounding said insulating element comprising a series of petticoat sections having their adjoining ends secured together, and means for supporting said tubular protecting means in position upon said insulating element and free therefrom, substantially as specified.

6. An insulator comprising an insulating element, a tubular protector composed of a series of sections arranged one upon the other in end to end relation, means for rigidly securing said sections together, and means for supporting said tubular protector in position surrounding said insulating element and free therefrom, substantially as specified.

7. An insulator comprising a flexible insulating element, means for supporting said insulating element, and a series of individual protecting sections formed of insulating material arranged one upon the other and sur-

rounding said insulating element and means provided upon certain of said protecting sections for maintaining the other of said protecting sections free from said insulating element, substantially as specified.

8. An insulator comprising a flexible insulating element, means for supporting said insulating element, a series of individual protecting sections formed of insulating material arranged one upon the other and loosely surrounding said individual sections, means for rigidly securing said end sections together, means for supporting said protecting sections in position surrounding said insulating element, and a hood arranged above said insulating element and protecting sections, substantially as specified.

9. An insulator comprising a flexible insulating element, means for supporting said insulating element, an attaching device carried by said insulating element, a series of individual protecting sections arranged one upon the other, petticoats on said protecting sections having sockets to receive the ends of adjoining protecting sections, means for supporting said protecting sections in position upon and loosely surrounding said insulating element, substantially as specified.

10. An insulator comprising a flexible insulating element, means for supporting said insulating element, an attaching device carried by said insulating element, a series of individual protecting sections arranged one upon the other, petticoats on said protecting sections having sockets in their undersides to receive the ends of adjoining protecting sections, means for supporting said protecting sections in position upon and loosely surrounding said insulating element, and a hood arranged above said insulating element and protecting sections, substantially as specified.

11. An insulator comprising a flexible insulating element, means for supporting said insulating element, an attaching device carried by said insulating element, a series of individual protecting sections each consisting of a tubular portion and a flaring portion provided upon its under-side with a socket adapted to receive the tubular portion of an adjoining protecting section, and means for securing said sections together and loosely surrounding said insulating element, substantially as specified.

12. An insulator comprising an insulating element, means for supporting said insulating element, an attaching device carried by said insulating element, a series of individual protecting sections, each consisting of a tubular portion, a petticoat provided at the lower end of each tubular portion having a socket in its under-side adapted to receive the upper end of an adjoining protecting section, means for securing said protecting sections together, and means arranged in the uppermost of said supporting sections and engaging the upper end of said insulating element, whereby to support said protecting sections in position upon and loosely surrounding said insulating element, substantially as specified.

13. An insulator comprising an insulating element, means for supporting said insulating element, an attaching device carried by said insulating element, a series of individual protecting sections, each consisting of a tubular portion, a petticoat provided at the lower end of each tubular portion having a socket in its under-side adapted to receive the upper end of an adjoining protecting section, means for securing said protecting sections together and means arranged in the uppermost of said insulating element, whereby to support said protecting sections in position upon and loosely surrounding said insulating element, and a hood arranged above said insulating element and protecting sections, substantially as specified.

Signed at the city of New York, in the county and State of New York, this fourteenth day of June, nineteen hundred and nine.

JULIUS ALSBERG.

Witnesses:
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