L. STEINBERGER.

SUSPENSION INSULATOR.

APPLICATION FILED SEPT. 21, 1912.

1,072,525. Patented Sept. 9, 1913.

Fig. 1.

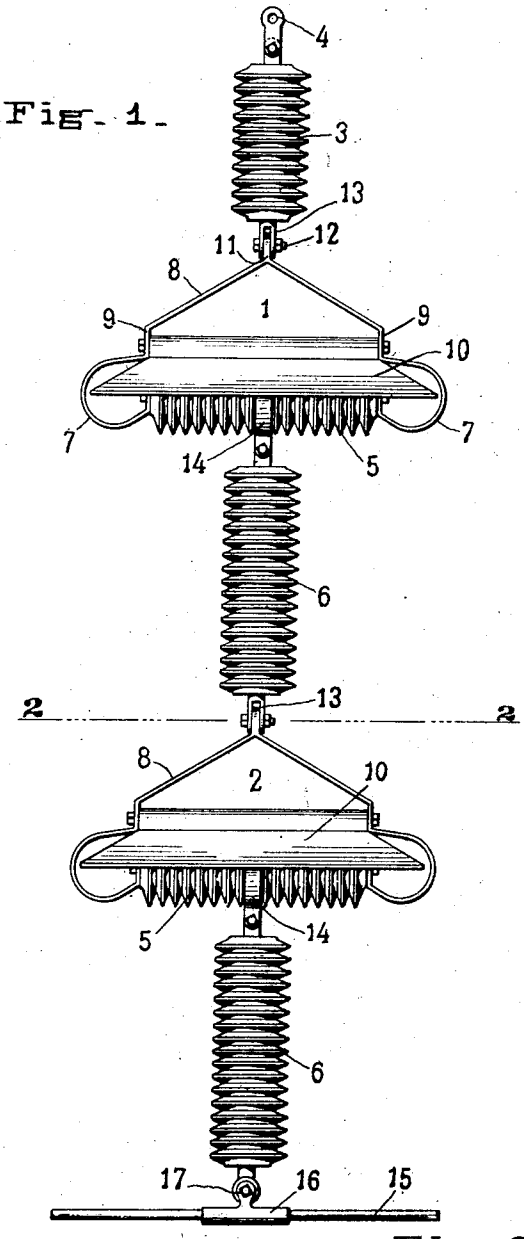
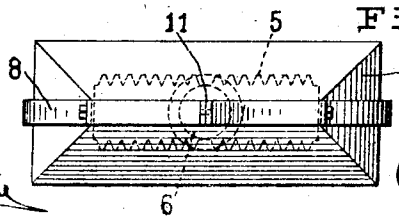


Fig. 2.



WITNESSES

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SUSPENSION-INSULATOR.

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To all whom it may concern:

Be it known that I, LOUIS STEINBERGER, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Suspension-Insulators, of which the following is a specification.

This invention relates to insulating means and more particularly to an insulating means comprising a plurality of concatenated units, each of said units comprising separately formed insulating parts connected in series, said parts being flexibly joined together and the several units being suspended from one another in column adapted to support a conductor from the lowest unit in the column, the arrangement being such as to secure a large insulating value especially for resisting charges of lightning or the like, and without the necessity for handling large individual insulators.

Among the more important objects of the invention may be enumerated the following: I. To connect together a plurality of insulator units in concatenated relation, and to form said units of parts so formed and disposed as to minimize the likelihood of the formation of conductive paths between the several units of the concatenated structure, which paths are ordinarily caused by dripping, or running, of water from one unit to the next below, or by the formation of icicles extending from one unit to another. II. To form an insulator unit for use in a concatenated structure, the unit comprising a part of relatively great vertical length depending from a part of relatively less vertical length but relatively greater horizontal dimension, the latter forming a water shed for the former, and the forming serving to space the water shed a considerable distance from the water shed of the next unit below in the column, so as to materially minimize the likelihood of the formation of conductive paths between said units as above set forth. III. To provide an insulator unit for use in a concatenated structure, the unit comprising a plurality of insulating parts arranged in series, and to provide a protective member for protecting each of said insulating parts in common. IV. To provide an insulator unit for use in forming a concatenated structure, the unit comprising an insulating part disposed horizontally, and a second insulating part disposed vertically and pendent beneath the horizontally disposed insulating part connected in series, and to provide a protective member directly above the horizontally disposed insulating part adapted for protecting both of said insulating parts against the elements.

Other objects and aims of the invention, more or less specific than those referred to above, will be in part obvious and in part pointed out in the course of the following description of the elements, combinations, arrangements of parts and applications of principles, constituting the invention; and the scope of protection contemplated will be indicated in the appended claims.

In the accompanying drawings which are to be taken as a part of this specification, and in which I have shown a merely preferred form of embodiment of the invention: Figure 1 is an elevational view illustrating a concatenated series of insulating units constructed and arranged in accordance with the provisions of this invention, and having a conductor supported thereby; and Fig. 2 is a top plan view of one of the insulator units, said view being taken on the plane of line II—II of Fig. 1.

Referring to the drawings for describing the invention in detail, the numerals 1 and 2 indicate, generally, two of the units forming the basis of this invention, said units being directly supported by a suitable insulator unit 3 from any form of support (not shown) through the medium of the eye 4 in the upper end of the insulator 3. It will be understood that there may be as many of the units 1 and 2, as may be desired in any concatenated structure, and that each of said units is substantially identical in formation, so that a description of one will apply equally to all. Each of the units comprises a rod type insulating part 5 disposed horizontally, and a similar rod type insulating part 6 disposed vertically. The insulating part 5 is directly supported from the end portions 7 of a bail 8, which spans above the insulating part 5 and is formed with opposing parallel portions 9 between which is supported a protective member 10 in position for preventing direct access of rain water and the like to the insulating parts 5 and 6 therebeneath, the protective member comprising a wide flaring flange for that purpose.

The bail 8 is formed, intermediate its length, with a lug 11 providing means for

attachment, as by bolt 12, with the lower bifurcated end 13 of the insulating unit 3, or, if the unit being described is suspended beneath another similar unit, then to the similarly bifurcated end 13 of the vertically disposed insulating part 6 of said unit next above. The insulating member 6 is provided, at its upper end, with a metallic band 14 arranged to encircle the insulating member 5 intermediate the ends thereof, in such manner that the insulating member 6 depends vertically centrally beneath the insulating member 5. The protective member 10, above the insulating member 5, is of such proportions, as clearly indicated, especially in Fig. 2, to form an efficient protection not only for the member 5, but also for the member 6. Though, only one of the vertical insulating members 6 are shown, it is apparent that if desired, others may be arranged parallel with that illustrated and be connected with the member 5 nearer its ends in like manner as is the member 6 at the middle of the member 5.

The numeral 15 indicates the supported conductor provided with a clamp member 16 connected by bolt 17 to the lower end of the lowest vertically disposed insulating part 6 in the concatenated structure. It will be seen that a charge of current from the conductor 15, encountering the first insulating member 6, if of sufficient strength to bridge or pass through said insulating member, must encounter the first insulating member 5 and bridge or pass through it before being able to reach the parts of the next unit above, and so on, in series, through the structure to the common support thereof. It is thus seen that though each of the insulator units comprises separately formed parts connected in series to provide desired efficiency, the single protective member 10 of each unit amply protects the individual parts of the unit and avoids the necessity for a separate protective member for each of the insulating parts. Considerable expense in manufacture, and difficulty and expense in handling, is avoided, and the general appearance of the structure is improved without detracting from the dielectric values of the several parts.

As minor changes could be made in the above construction without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense. It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described, and to cover all variations of the invention which might be said to fall within the scope of said language.

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

1. A suspension insulator comprising a plurality of separately formed units arranged in concatenated relation and adapted to support a conductor from the lowest unit in the column, said units being alternately horizontally and vertically disposed, and protective members arranged above the horizontally disposed units being connected to and supported by the next adjacent vertically disposed unit above.

2. A suspension insulator comprising a plurality of separately formed units arranged in concatenated relation, and adapted to support a conductor from the lowest unit in the column, and said units being alternately horizontally and vertically disposed, the vertically disposed units being supported by one end from the intermediate portion of the adjacent horizontally disposed units.

3. A suspension insulator comprising a plurality of separately formed units arranged in concatenated relation, and adapted to support a conductor from the lowest unit in the column, and said units being alternately horizontally and vertically disposed, means extending from the ends of the horizontally disposed units for supporting said horizontally disposed units from the lower end of adjacent vertically disposed units, and a protective member carried by said supporting means adapted to protect the adjacent horizontally disposed unit, and also to protect the vertically disposed unit next therebeneath.

4. A suspension insulator comprising a plurality of separately formed units arranged in concatenated relation, and adapted to support a conductor from the lowest unit in the column, and said units being alternately horizontally and vertically disposed, the units of one disposition being supported by their opposite end portions from the end portions of adjacent units of the other disposition.

In testimony whereof I affix my signature in the presence of two witnesses.

LOUIS STEINBERGER.

Witnesses:
J. CLYDE RIPLEY,
NATHALIE THOMPSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."