F. M. LOCKE.

INSULATING SYSTEM FOR HIGH POTENTIAL ELECTRIC CONDUCTORS.

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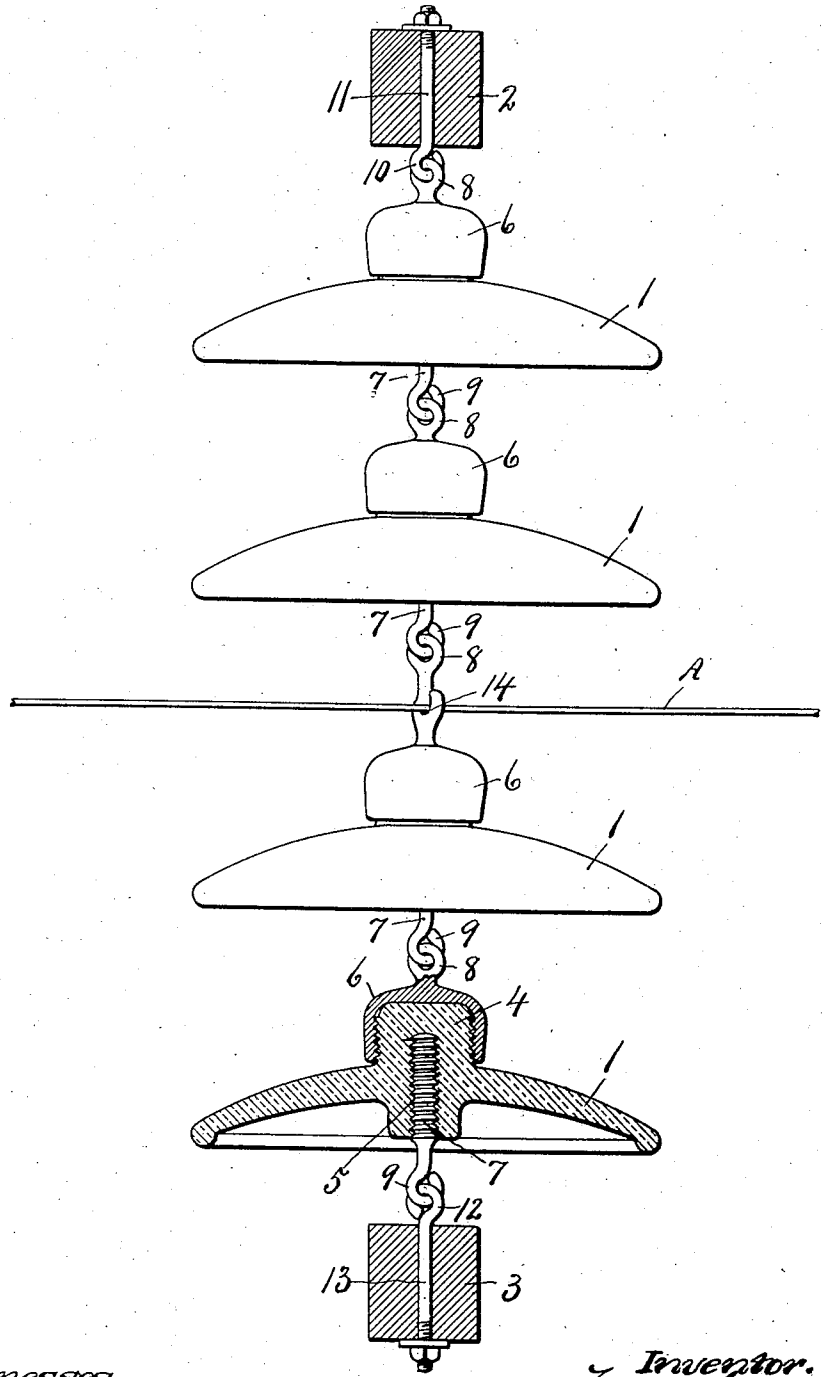
973,204. Patented Oct. 18, 1910.



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UNITED STATES PATENT OFFICE.

FRED M. LOCKE, OF VICTOR, NEW YORK, ASSIGNOR TO THE LOCKE INSULATOR MANUFACTURING COMPANY, OF VICTOR, NEW YORK, A CORPORATION OF NEW YORK.

INSULATING SYSTEM FOR HIGH-POTENTIAL ELECTRIC CONDUCTORS.

973,204. Specification of Letters Patent. **Patented Oct. 18, 1910.**

Application filed August 27, 1908. Serial No. 450,527.

To all whom it may concern:

Be it known that I, FRED M. LOCKE, of Victor, in the county of Ontario, in the State of New York, have invented new and useful Improvements in Insulating Systems for High-Potential Electric Conductors, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in insulating systems for high potential electric conductors and refers more particularly to the series insulator type in which the insulators are suspended in sequence between supports with means for supporting the conductor substantially midway between two adjacent insulators and also substantially midway between the supports.

My object is to flexibly connect the insulators to each other and to their supports, so as to afford a limited sway and turning action relatively to each other and to their supports to avoid undue strain of the connections by excessive wind pressure and unequal expansion and contraction of the parts of the insulating system and conductor, supported thereby, and at the same time affording a convenient means for increasing or diminishing the number of insulators according to the voltage of the current which the conductor may be required to carry.

Other objects and uses will appear in the following description.

In the drawings I have shown in elevation partly in section, a series of, in this instance, four insulators, flexibly connected in sequence to each other to and between suitable supports as cross arms —2— and —3—, one of the intermediate connections between two adjacent insulators being adapted to carry an electric conductor —A—. These insulators —1— may be of any desired form or size and in this instance are each provided with a central reduced externally threaded or roughened head —4— projecting from one face and a threaded or roughened socket —5— extending inwardly and centrally from its opposite face, the externally threaded head or boss —4— being adapted to receive a threaded cap —6— while the threaded socket —5— receives a screw —7—.

Each of the caps —6— is provided with an external eye —8— with which is flexibly interlocked a similar eye —9— on the lower end of the adjacent screw —7—, thus permitting a limited swing and turning movement of the insulators relatively to each other. The eye —8— of the cap —6— of the upper insulator is flexibly interlocked with a similar eye —10— on the lower end of a bolt —11—, which is secured to the upper cross arm —2—, thereby establishing the flexible connection between the upper insulator of the series and the upper cross arm. The eye —9— of the lower insulator is flexibly interlocked with a similar eye —12— on the upper end of a bolt —13— which is secured to the lower cross arm —3—, thereby establishing a flexible connection between the lower insulator and lower cross arm so that the entire series of insulators are flexibly connected to each other and to the insulators —2— and —3—, allowing a limited swing and turning movement relatively to each other and to said supports. One of the connections between two of the intermediate insulators is provided with a suitable seat —14— for receiving, and supporting the adjacent portion of the conductor —A—, at the same time allowing said conductor and its support —14— to move a limited distance relatively to each other under strains to which either may be subjected by wind pressure or unequal expansion and contraction of the parts.

By assembling a system of insulators in the manner just described, it is evident that said insulators are free to turn and to swing limited distances, relatively to each other and to their supports, thereby avoiding excessive strains upon the connected parts which is always more or less liable to break the insulators where they are rigidly connected to each other. In other words, the insulators are loosely but flexibly connected to each other and to their supports to enable them to flex or turn under wind pressure and unequal expansion and contraction of the parts, it being understood that these insulators are spaced some distance apart to afford ample air gap to prevent arcing of any current leakage from one insulator to the other.

By connecting the insulators in the manner described, it is evident that the insulation may be increased or decreased according to the voltage to be carried and at the same time the mechanical strength of the system is very much increased because by fastening the insulators at both ends and

providing one or more flexible connections between them, the strain upon the insulation at the point of securement of the wire which may be anywhere between the supports will be endwise or axial of the insulators, that is the pull will be endwise or substantially axial of the insulators and connections between them. It is evident, however, that one or more flexible connections may be employed between the insulators and that the conductor may be fastened to any part of any one of the connections or to one of the insulators if desired without departing from the spirit of my invention.

What I claim is:—

A system of insulation for high potential electric conductors comprising a series of insulators arranged in superposed sequence some distance apart, supports at opposite ends of the series, connections between the supports and adjacent insulators whereby the insulators may turn with respect to the supports, separate connections between adjacent ends of the insulators whereby each insulator is free to turn, and a seat for a conductor on one of the last named connections and between the supports.

In witness whereof I have hereunto set my hand this 22nd day of August 1908.

FRED M. LOCKE.

Witnesses:
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MERCIE P. LOCKE.