

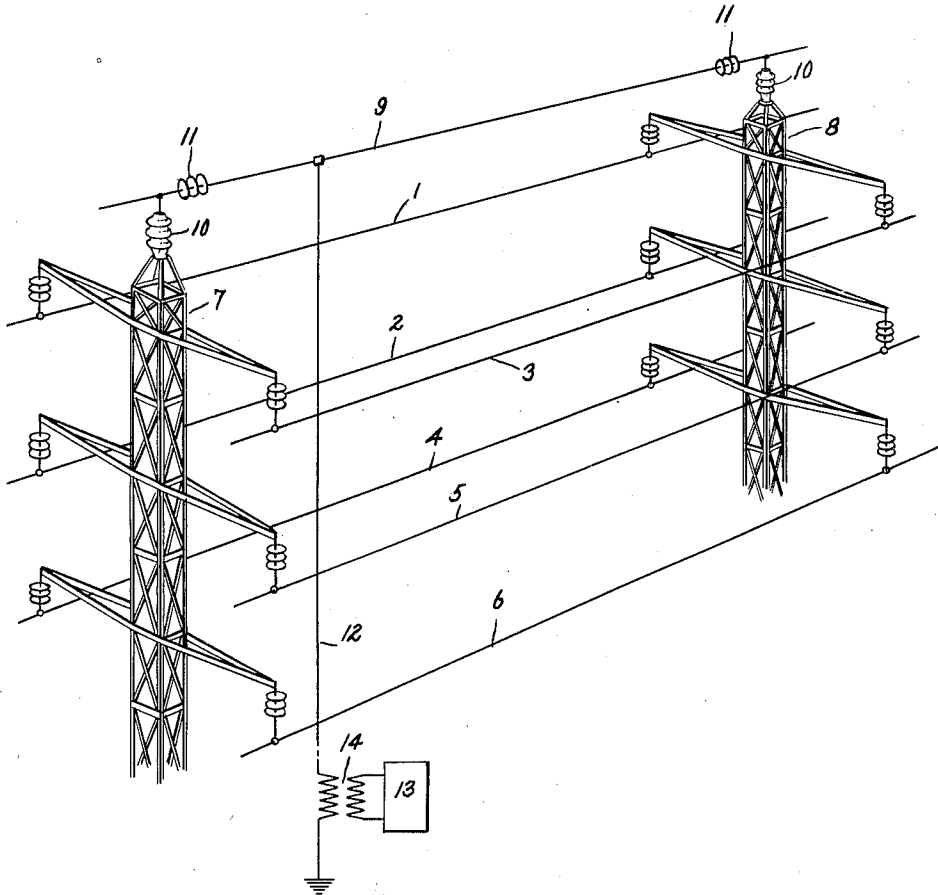
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W. R. G. BAKER

SIGNALING SYSTEM

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Inventor:
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UNITED STATES PATENT OFFICE.

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SIGNALING SYSTEM.

Application filed November 6, 1923. Serial No. 673,190.

To all whom it may concern:

Be it known that I, WALTER R. G. BAKER, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Signaling Systems, of which the following is a specification.

My present invention relates to signaling systems and more particularly to systems in which high frequency signaling currents are transmitted over high potential electrical transmission lines.

In systems of the type here involved it has been proposed to impress the high frequency signaling currents upon the power conductors by suspending a coupling wire parallel to the power conductors and between the power conductors and earth. With this arrangement the capacity between the coupling wire and earth is large enough in comparison with the capacity between the coupling wire and the transmission conductors to cause a considerable energy loss and appreciable radiation of high frequency waves which is undesirable. I have discovered that this loss may be greatly reduced by locating the coupling wire above the transmission conductors. By this expedient the capacity between the coupling wire and earth is greatly reduced and the energy loss is correspondingly reduced.

Many power transmission lines are provided for protective purposes with a ground wire which is supported on the tops of the supporting towers and which is grounded at frequent intervals. I have found that a section of this ground wire may conveniently be employed as a coupling wire by insulating a suitable length thereof from the main portion and impressing the signaling currents upon the insulated section. This does not interfere in any way with the protection afforded by the ground wire as the insulated section will also be connected to earth and the signaling currents may be introduced through the earth connection.

My invention will best be understood by reference to the following description taken in connection with the accompanying drawing in which I have indicated diagrammati-

cally one way in which my invention may be carried into effect.

I have indicated in the drawing a transmission system comprising two three-phase transmission lines made up of conductors 1 to 6, inclusive. The transmission conductors are supported by towers of conventional form of which only two, 7 and 8, are indicated. A ground wire 9 is supported on the tops of the towers by means of insulators 10. In accordance with the usual practice this ground wire may be grounded at frequent intervals. The section between the towers 7 and 8 is insulated from the remainder of the ground wire by strain insulators 11, and is connected to ground by a conductor 12. High frequency signaling currents supplied by a transmitter 13 are impressed upon the insulated section of the ground wire 9 by means of a transformer 14, the secondary of which is connected in series with the ground lead 12.

It will of course be understood that a similar arrangement may be used if desired for the reception of the signaling currents transmitted over the power wires and that many other modifications of my invention may be made without departing from the scope thereof as set forth in the appended claims.

What I claim as new and desire to secure by Letters Patent of the United States, is,—

1. The combination in a high frequency signaling system of a high potential electrical transmission line supported above the earth, a grounded conductor supported above said transmission line and parallel thereto for protective purposes, a pair of insulating joints in said grounded conductor whereby a comparatively short section thereof is insulated from the remainder, and means for impressing high frequency signaling currents on the insulated section.

2. The combination in a high frequency signaling system of a high potential electrical transmission line supported above the earth, a grounded conductor supported above said transmission line and parallel thereto for protective purposes, a pair of insulating joints in said grounded conductor

whereby a comparatively short section thereof is insulated from the remainder, a connection between said insulated section and earth, and means for impressing high frequency signaling currents upon said connection.

3. The combination in a high frequency signaling system of a high potential electrical transmission line supported above the earth and means for effecting a transfer of high frequency signaling currents between said transmission line and a signaling ap-

paratus comprising a grounded conductor supported above said transmission line and parallel thereto for protective purposes, a pair of insulating joints in said grounded conductor whereby a comparatively short section thereof is insulated from the remainder and a connection between said insulated section and a signaling apparatus.

In witness whereof, I have hereunto set my hand this 5th day of November, 1923.

WALTER R. G. BAKER.