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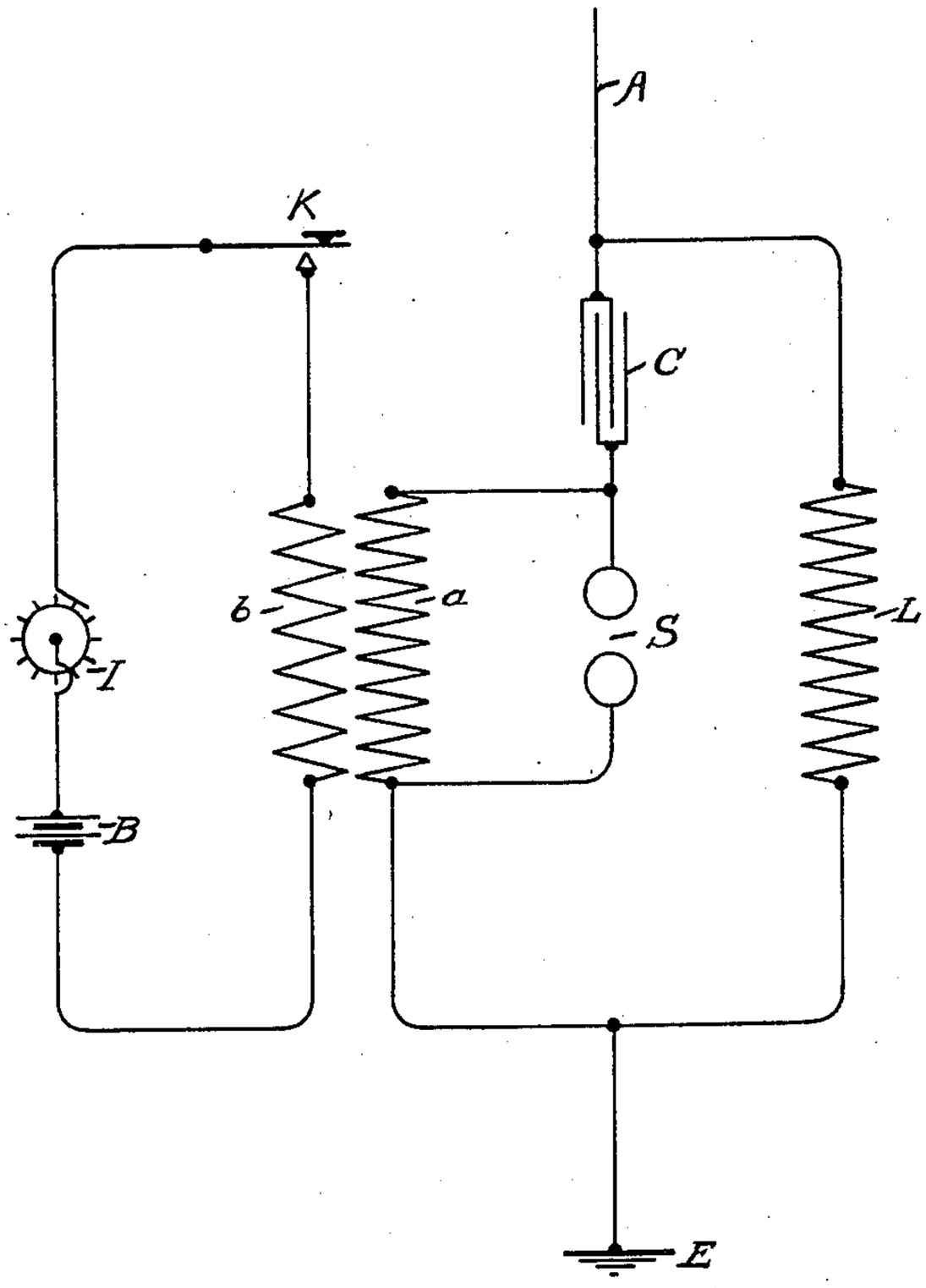
H. SHOEMAKER.

WIRELESS SIGNALING SYSTEM.

APPLICATION FILED JUNE 11, 1902.

NO MODEL.



WITNESSES:

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No. 754,904. Patented March 15, 1904.

UNITED STATES PATENT OFFICE.

HARRY SHOEMAKER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO MARIE V. GEHRING AND THE CONSOLIDATED WIRELESS TELEGRAPH AND TELEPHONE COMPANY, OF PHILADELPHIA, PENNSYLVANIA.

WIRELESS SIGNALING SYSTEM.

SPECIFICATION forming part of Letters Patent No 754,904, dated March 15, 1904.

Application filed June 11, 1902. Serial No. 111,090. (No model.)

To all whom it may concern:

Be it known that I, HARRY SHOEMAKER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Wireless Signaling System, of which the following is a specification.

My invention relates to signaling systems in which electroradiant energy is impressed upon the natural media at the transmitting-station and received from the natural media at the receiving-station to control circuits and apparatus to reproduce signals.

It comprises a wireless telegraph system in which electrical energy of a definite and certain frequency is impressed upon the natural media at the transmitter.

In Figure 1, A represents the usual radiating conductor of a wireless telegraph system, which is joined at its lower end at a point intermediate to condenser C and the inductance L. The remaining armature of the condenser C is connected to the upper ball of the spark-gap S. The lower terminal of the inductance L and the lower ball of the spark-gap S are joined to earth-plate E.

a is the secondary of a transformer whose terminals connect to the terminals of the spark-gap S. *b* is the primary of transformer aforementioned and in circuit with which is a source of energy B and interrupter I and an operator's key K. Upon depressing key K an interrupted current passes through the primary *b*.

Condenser C, inductance L, and spark-gap S form together an oscillating circuit whose electrical constants are such as to produce electrical oscillations of high rate.

The condenser C, though of large capacity with respect to the frequency of oscillations of the local circuit, is of relatively small capacity in relation to the low-frequency currents derived from the secondary *a*, and in consequence there is no short-circuiting of said secondary *a* through said condenser C.

Condenser C and inductance L are the frequency-determining elements of such oscillations, care being taken to have the ohmic resistance of said circuit as low as possible. At the terminals of inductance L there is therefore a difference of potential greatly exceeding the difference of potential derived from the secondary of the transformer *a*. In other words, there is a resonant rise of potential at the terminals of inductance L. It is at these terminals that the aerial-circuit and the ground-circuit connections are made, the result being forced vibrations at the radiating-circuit equal in rate to the natural rate of the circuit C L S and of a potential very high.

I do not wish to be limited to the precise arrangement of circuits as herein shown and described, inasmuch as the invention described herein may be applied to numerous systems of wireless signaling already known in the art.

What I claim is—

1. In a wireless signaling system, a freely-oscillating circuit, an inductance-winding included in said circuit, and a radiating-circuit connected to the terminals of said winding.

2. In a wireless signaling system, a freely-oscillating circuit, an inductance-winding included in said circuit, and a radiating-circuit subjected to the excessive potential across the terminals of said winding.

3. In a wireless signaling system, a freely-oscillating circuit, an inductance-winding included in said circuit, and a radiating-circuit connected in shunt to said winding.

4. In a wireless signaling system, a freely-oscillating circuit, an inductance-winding included in said circuit, an aerial conductor having a connection with terminal of said winding, and an earth connection with the remaining terminal of said winding.

5. In a wireless signaling system, a freely-oscillating circuit, an inductance-winding included in said circuit, a radiating-circuit subjected to the excessive rise of potential across the terminals of said winding, and means for supplying energy to the freely-oscillating circuit.

6. In a wireless signaling system, a freely-oscillating circuit, an inductance-winding included in said circuit, a radiating-circuit connected to the terminals of said winding, and

means for supplying energy to the freely-oscillating circuit.

7. In a wireless signaling system, a freely-oscillating circuit, an inductance-winding included in said circuit, a radiating-circuit connected to the terminals of said winding, means for supplying energy to said freely-oscillating circuit, and means for controlling the energy-supply.

HARRY SHOEMAKER.

Witnesses:
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