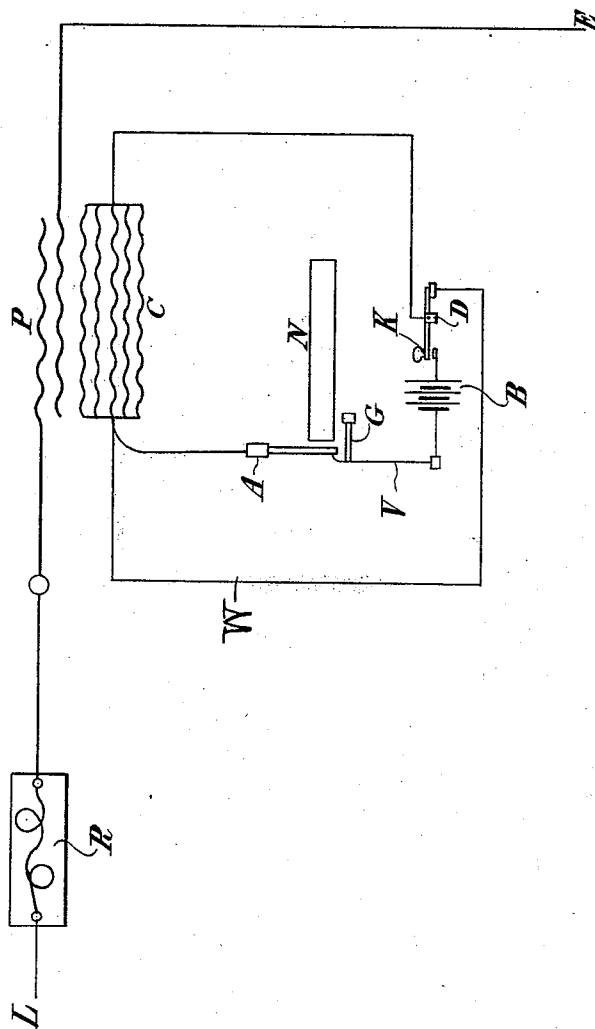


(No Model.)

C. LANGDON-DAVIES.
PHONOPORIC TELEGRAPHY.

No. 477,835.

Patented June 28, 1892.



Witnesses.
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Inventor.
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UNITED STATES PATENT OFFICE.

CHARLES LANGDON-DAVIES, OF LONDON, ENGLAND, ASSIGNOR TO THE
PHONOPORE SYNDICATE, LIMITED, OF SAME PLACE.

PHONOPORIC TELEGRAPHY.

SPECIFICATION forming part of Letters Patent No. 477,835, dated June 28, 1892.

Application filed April 20, 1892. Serial No. 429,376. (No model.) Patented in France June 22, 1891, No. 214,350.

To all whom it may concern:

Be it known that I, CHARLES LANGDON-DAVIES, electrician, a subject of the Queen of Great Britain, residing at Faraday House, Charing Cross Road, London, England, have invented certain new and useful Improvements in Phonoporic Telegraphy, (for which I have received Letters Patent in France, No. 214,350, dated June 22, 1891,) of which the following is a specification.

In phonoporic telegraphy I have heretofore employed a transmitter in which there is an iron core surrounded by multiple windings. Such an arrangement is shown in my patent, No. 424,006, of March 25, 1890. One of the windings is connected at one end through a receiving-instrument with the line-wire. A second winding is connected by one end to earth. The other ends of these windings are insulated, so that there is no through-circuit. Again, another winding (or windings) forms part of a local circuit in which a key is included, and also a battery and a vibrating circuit-closer. When the key is depressed, the vibrating circuit-closer is kept in motion by the intermittent attraction of the core. It vibrates in front of the core, opening and closing the local circuit, so induced currents or impulses are caused to pass along the line-wire. Now in such transmitters as heretofore made this key-circuit has been open, except when the key is depressed. I have found, however, that the reception of the signals is much improved by the closing of this local circuit, and I so construct the key that when it rises and leaves the battery contact-stud it comes upon another contact-stud, thereby closing a circuit through the core-winding, but in such a manner that the vibrating circuit-closer ceases to be operative.

The diagram annexed represents schematically a transmitter and receiver.

P is the phonoporic secondary of multiple wire. It is wound around the iron core N. One wire is connected to earth-wire at E and the other wire to the line-coils R of the receiver and through the receiver to the line at L. This receiver is worked by impulses arriving from a distant transmitter, and when

receiving the transmitter shown in the diagram serves to connect the receiver with the earth or return wire.

C is the primary coil, having a resistance of, say, one hundred ohms and also wound upon the core N. One end of the coil is connected at D to the bridge of an ordinary key K. The other end of the coil is connected to the spring-armature A, which when at rest is in contact with the spring V.

G is a screw-stop, and B is a battery connected with V and with the front contact of the key K. These arrangements so far do not differ in any important way from what has been usual in phonopore-transmitters since phonoporic telegraphy was invented by me.

When the key is put down, the core N is magnetized and the armature A vibrates rapidly at a regular speed, opening and closing the battery-circuit, and electric impulses pass in the line-wire. When the key K is not in use, the circuit through the multiple coil C has heretofore remained open. I now arrange that the key when in its position of rest shall connect the opposite ends of the coil C. For this purpose I establish a connection W between the end of the coil C and a circuit-closer, such as the back contact of the key K, so that when the path through the armature A, spring V, and battery B is interrupted by the key another path avoiding these parts is provided. The result of closing the circuit through C is to greatly increase the action on the receiver of the impulses arriving from the distant station.

Instead of the ordinary fixed back-stop of the key I sometimes use a pin-switch or any other convenient arrangement for making the necessary commutation.

The key may, if desired, be so arranged as to cut out the receiver when it is depressed. What I claim is—

1. A phonopore-transmitter comprising primary and secondary coils, a battery, a vibrator, a primary circuit in which the battery is included and which includes the primary coils, an open secondary or phonopore circuit of which the secondary coils form a part, a key for opening and closing the primary cir-

cuit, and means for closing a circuit through the primary coils when the key is not in use to open and close the primary circuit.

5 2. A phonopore-transmitter comprising primary coils and open-circuit or phonopore secondary coils, a transmitting-battery, a key for connecting the battery with the primary coils, and means for closing the circuit, excluding the battery, through the primary coils when
10 the key is not in use to connect the transmitting-battery therewith.

3. A phonopore-transmitter comprising a primary circuit including a battery or source

of electricity, a vibrating tongue, and primary coils, secondary open-circuit or phonopore 15 coils, a key for opening and closing the primary circuit, and devices connected with the key for closing a circuit through the primary coils, excluding the battery.

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