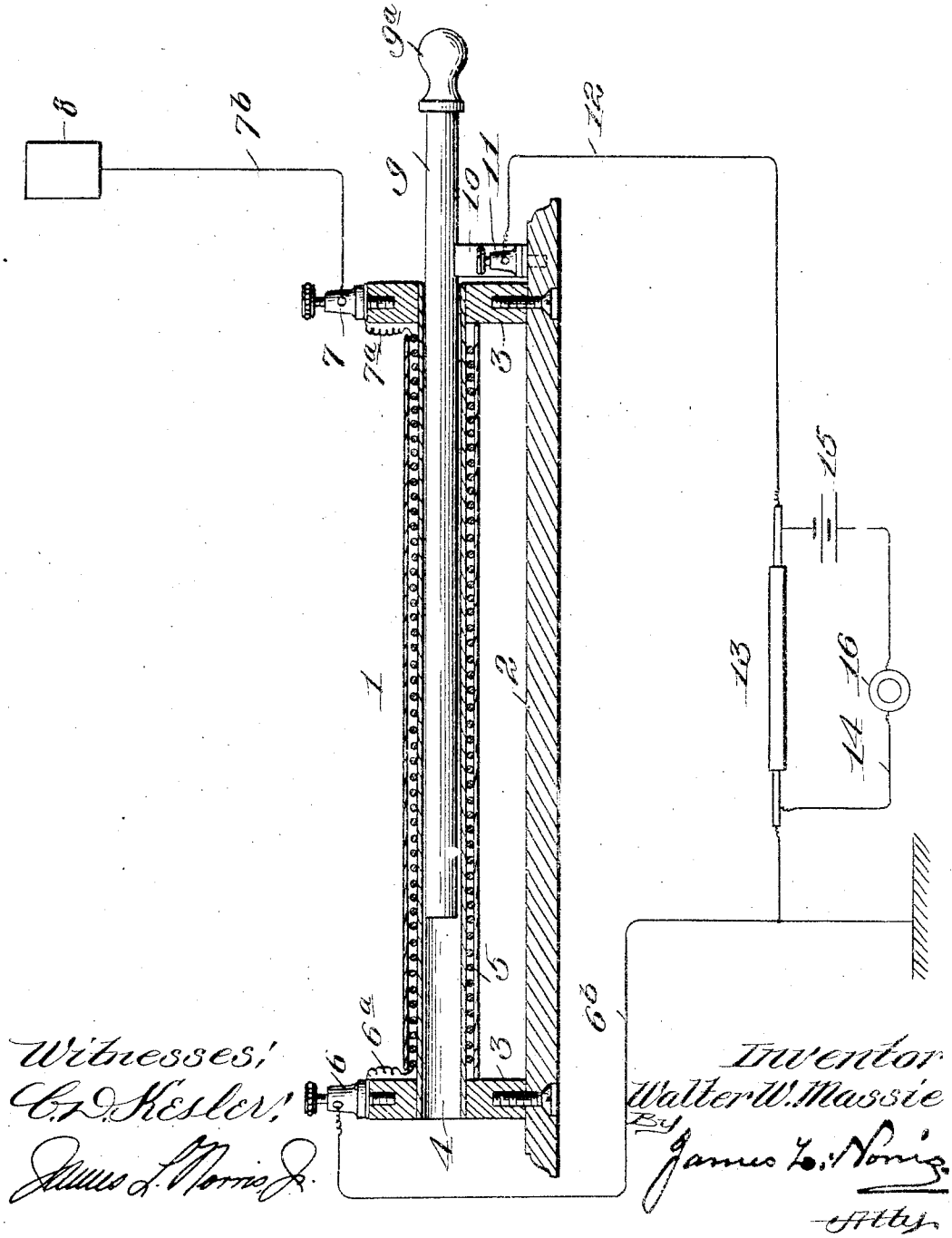
No. 736,578. PATENTED APR. 4, 1905.

W. W. MASSIE.

COMBINED CONDENSER AND LEAK COIL.

APPLICATION FILED JUNE 18, 1904.



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No. 786,578. Patented April 4, 1905.

UNITED STATES PATENT OFFICE.

WALTER W. MASSIE, OF PROVIDENCE, RHODE ISLAND.

COMBINED CONDENSER AND LEAK-COIL.

SPECIFICATION forming part of Letters Patent No. 786,578, dated April 4, 1905.

Application filed June 18, 1904. Serial No. 213,177.

To all whom it may concern:

Be it known that I, WALTER W. MASSIE, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in a Combined Condenser and Leak-Coil, of which the following is a specification.

My invention relates to improvements in a combined condenser and leak-coil for wireless-telegraphy apparatus, and has for its object to prevent disturbances from local atmospheric electricity to insure that all oscillatory currents will pass to the receiving instrument and at the same time attune.

In wireless-telegraphy apparatus prior to my invention the arrangement of condenser and leak-coil was such that a large percentage of the oscillatory currents escaped to the ground without going to the receiving instrument, passing through the leak-coil by the condenser effect produced by the several turns of wire. By my invention this serious difficulty is overcome and a new arrangement is provided whereby loss of the oscillatory currents is substantially prevented and all or substantially all thereof are caused to pass through the receiving instrument, at the same time obtaining an efficient tuning effect.

To the end stated my invention consists in a combined condenser and leak-coil arranged and operating in the manner hereinafter set forth.

That which I regard as new will be set forth in the accompanying clauses of claim.

In the drawing, which illustrates that which I regard as the best known embodiment of my invention, the figure is a diagrammatic view, partly in section and partly in elevation.

In the said drawing the reference-numeral 1 designates generally my improved combined condenser and leak-coil. This is arranged upon a suitable base 2, being supported thereon by means of standards 3. The apparatus comprises an insulating-tube 4, the ends of which are disposed in the standards 3, and associated therewith is a wire leak-coil 5, forming one coating of the condenser. This coil in the present example of my invention is wound upon the exterior of said tube, but may be arranged interiorly thereof. The extremities or terminals of said coil are connected to binding-posts 6 and 7, as shown at 6^a and 7^a. One terminal of wire, which is shown as connected to the binding-post 6, leads through said binding-post to ground by wire 6^b. The other extremity or terminal of the wire of the coil communicates, through binding-post 7, with the vertical wire 7^b of the system, which leads from the aerial instrument 8. Adjustably arranged within the insulating-tube 4 is a metal tube 9, forming the other side of the condenser and having an exposed handle 9^a, by which it may be adjusted to various degrees within said insulating-tube.

10 represents a contact shown as a contact-spring that is always in operative contact with the tube 9. This spring is connected to a binding-post 11, from which leads a conductor 12 through a responder or coherer 13 to ground.

14 designates the receiver-circuit, which includes a battery 15 and receiving instrument 16.

In operation the oscillatory currents from the aerial instrument 8 pass by way of the vertical wire 7^b through binding-post 7 to the coil 5, then by the condenser effect to the tube 9, and thence to conductor 12, coherer or responder to ground, while atmospheric electricity or direct currents pass by way of the coil 5 to ground through terminal 6^a, binding-posts 6, and ground-wire 6^b, the two currents being thus efficiently separated. The condenser-tube is adjustably arranged within the coil in order that the capacity may be adjusted or attuned, thus allowing the full strength of the oscillatory currents to pass through the receiving instrument.

The operator will adjust the tube within the coil to the requisite degree to produce the best effect in the receivers, and the degree to which said tube should be adjusted within said coil will be ascertained by the operator by trial or by calculations previously figured and marked on the tube or otherwise.

Having thus described my invention, what I claim is—

1. In a combined condenser and leak-coil for wireless-telegraphy apparatus, the combination with a coil one terminal of which is connected to the vertical wire and the other to ground, and a metal tube associated with said coil and having operative connection with the receiving instrument and ground.

2. In a combined condenser and leak-coil for wireless-telegraphy apparatus, the combination with a coil one terminal of which is connected to the vertical wire and the other to ground, and a metal tube adjustably arranged with relation to said coil and having operative connection with the receiving instrument and ground.

3. In a combined condenser and leak-coil for wireless-telegraphy apparatus, the combination with an insulating-tube, a coil associated therewith, one terminal of which is connected to the aerial instrument and the other to ground, a metal tube adjustably arranged with relation to said coil and having operative communication with the receiving instrument and ground, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WALTER W. MASSIE.

Witnesses:
FRANKLIN D. FORD,
JOHN G. MASSIE.