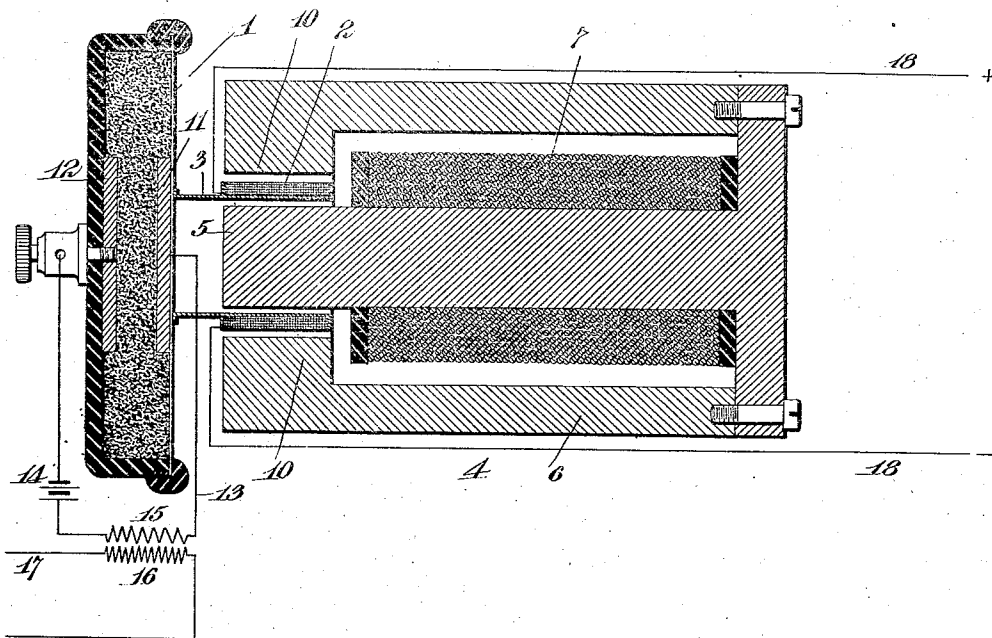


L. A. LINDSEY.
 TELEPHONE REPEATER.
 APPLICATION FILED MAR. 20, 1906.

901,974.

Patented Oct. 27, 1908.



Witnesses:

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UNITED STATES PATENT OFFICE.

LUCIUS A. LINDSEY, OF CRYSTAL SPRINGS, GEORGIA.

TELEPHONE-REPEATER.

No. 901,974.

Specification of Letters Patent.

Patented Oct. 27, 1908.

Application filed March 20, 1906. Serial No. 307,031.

To all whom it may concern:

Be it known that I, LUCIUS A. LINDSEY, a citizen of the United States, and a resident of Crystal Springs, Floyd county, Georgia, have invented a certain new and useful Improvement in Telephone-Repeaters, of which the following is a specification.

The objects I have in view are to improve the efficiency of telephone repeaters.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which the figure is a longitudinal section slightly diagrammatic, and upon a greatly enlarged scale, of a telephone repeater embodying my invention.

In carrying out my invention, I provided a diaphragm such as 1, which is preferably made of a non-magnetic material. Suitable materials are glass or mica, or any other material which does not depend upon its magnetic properties for action. In connection with the diaphragm I employ a coil 2. This coil is wound upon a spool 3, which is preferably of paper or some other non-conducting material. The spool is secured to the diaphragm in any suitable manner, but preferably by means of glue or cement so that it will be supported by the diaphragm, and vibrate with it.

In connection with the coil 2, I employ a magnet 4. This magnet is shown as preferably of peculiar shape, having a central pole 5, and an outside annular pole 6. The magnet may be a permanent magnet or an electro-magnet as shown in the drawing, in which the exciting coil 7 will surround the inner pole 5, and be surrounded by the outer pole 6. The magnet may be attached to a suitable support such as the body of the repeater.

When the invention is used in connection with a repeater such as is shown in the drawings, the diaphragm 1 carries upon it one of the plates 11 of the carbon button, the other plate 12 being carried by the casing of the button, the carbon being in granular form, as shown, and lying between the two end plates. The diaphragm incloses the open side of the casing, as shown, thereby forming one of the essential parts of the button. One of the wires 13 of the local circuit will connect with the plate 11, by passing through a hole in the spool 3, the hole being made outside of and beyond the coil 2. In the drawings, 14 is the local battery, 15 the primary, and 16 the secondary of the induction coil,

17 is the outgoing circuit, and 18 the incoming circuit.

I prefer to make the coil 2 of silk covered aluminum wire so that the greatest amount of lightness will be secured. By employing a non-magnetic diaphragm, the inertia is greatly reduced, and the instrument is made more responsive to current changes. In connection with the repeater, it permits the diaphragm being connected directly with the carbon button, so that the usual transmitting devices which include levers, air-chambers or other mechanism, is avoided. This construction in connection with a repeater, requires only the coil, and the light hollow spool to be attached to the diaphragm, with the additional carbon terminal on the other side of the diaphragm, and the diaphragm may be made as light as desirable in order to obtain proper flexibility.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. A telephone repeater having a carbon button, one of the plates of which is attached to the diaphragm, there being a coil mounted on such diaphragm and a separate core in coöperative relation with the coil, the said core being mounted independently of the diaphragm, and an exciting coil in coöperative relation with the core.

2. A telephone repeater having a carbon button, one of the plates of which is attached to the diaphragm, there being a spool mounted on the diaphragm, a coil carried by the spool and a separate core in coöperative relation with the coil, the said core being mounted independently of the diaphragm, and an exciting coil in coöperative relation with the core.

3. A telephone repeater having a carbon button, the said button having a diaphragm which is an essential part thereof, there being a coil mounted on such diaphragm and a separate core in coöperative relation with the coil, the said core being mounted independently of the diaphragm, and an exciting coil in coöperative relation with the core.

4. A telephone repeater having a carbon button, one of the plates of which is attached to the diaphragm, there being a coil mounted on such diaphragm, and a separate core in coöperative relation with the coil, the said core being mounted independently of the diaphragm.

5. A telephone repeater having a carbon

button, one of the plates of which is attached to the diaphragm, there being a spool mounted on the diaphragm; a coil carried by the spool, and a separate core in coöperative relation with the coil, the said core being
5 mounted independently of the diaphragm.

6. A telephone repeater having a carbon button, the said button having a diaphragm which is an essential part thereof, there being
10 a coil mounted on such diaphragm, and a

separate core in coöperative relation with the coil, the said core being mounted independently of the diaphragm.

This specification signed and witnessed this 16th day of March, 1906.

LUCIUS A. LINDSEY.

Witnesses:

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