(No Model.) 2 Sheets—Sheet 1.

A. F. CONGDON.

TRANSMITTING TELEPHONE.

No. 303,810. Patented Aug. 19, 1884.

FIG. 1.

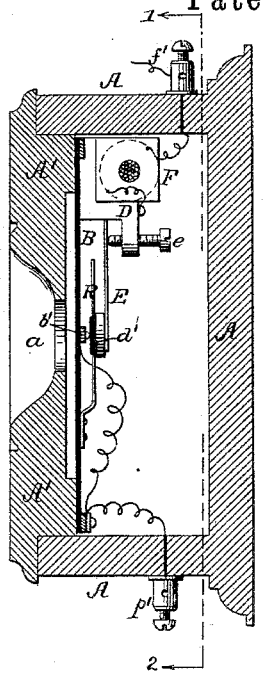
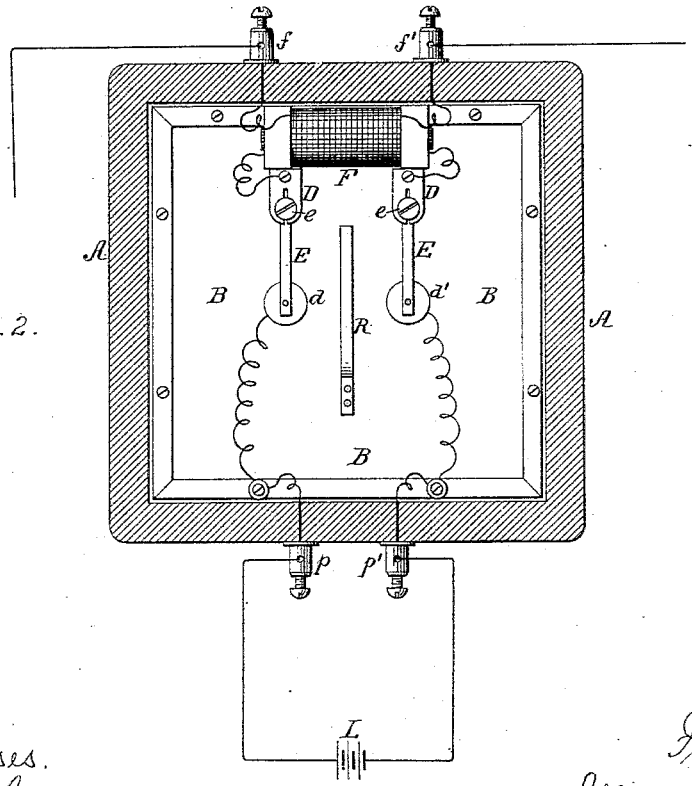


FIG. 2.



Witnesses.
John C. Clayton.
James F. Tobin.

Inventor,
Albert F. Congdon
by his Attys
Howson & Sons

(No Model.) 2 Sheets—Sheet 2.

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TRANSMITTING TELEPHONE.

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FIG. 3

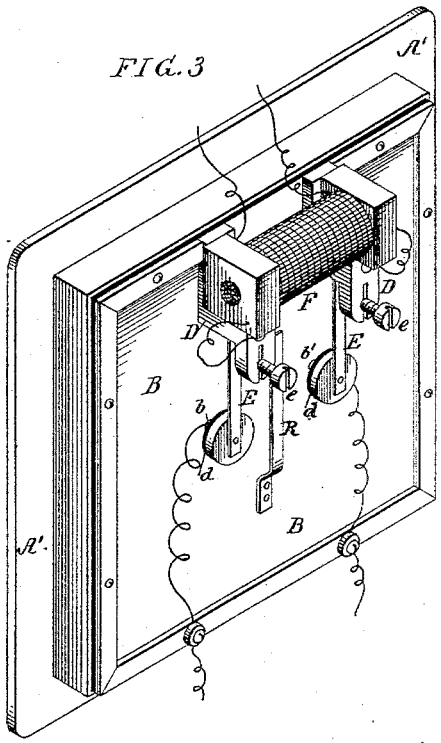


FIG. 4

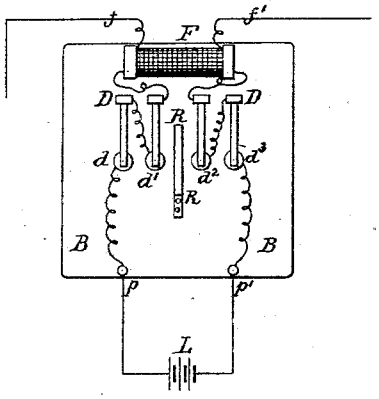
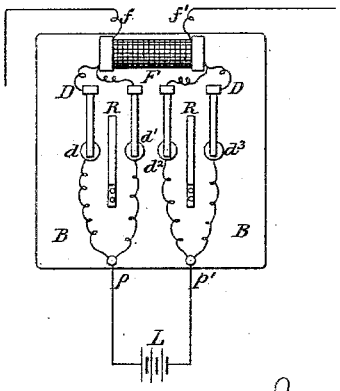


FIG. 5



Witnesses—
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UNITED STATES PATENT OFFICE.

ALBERT F. CONGDON, OF PHILADELPHIA, ASSIGNOR TO WILLIAM RENNYSON, OF NORRISTOWN, PENNSYLVANIA.

TRANSMITTING-TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 303,810, dated August 19, 1884.

Application filed March 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, ALBERT F. CONGDON, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Transmitting-Telephones, of which the following is a specification.

My invention consists of certain improvements in the construction of transmitting-telephones of the class in which the vibrations of a diaphragm cause variations of resistance in an electrical battery-circuit through the primary wire of an induction-coil, the secondary wire of the latter having the receiving-telephone in circuit, as more fully described hereinafter.

In the accompanying drawings, Figure 1 is a vertical section of a transmitter-box embodying my improvements. Fig. 2 is a section on the line 1 2, Fig. 1. Fig. 3 is a perspective view of the rear side of the front plate or door of the box and diaphragm and its attachments, and Figs. 4 and 5 are diagrams of modified arrangements of circuits.

A is the inclosing box or casing, with the usual door or front plate, A′, having the mouth piece or opening *a*, and carrying on the inside the diaphragm B. To the diaphragm, near the center, are secured two or more platinum or other electrodes, *b b′*, against which bear the free electrodes *d d′*, of carbon, carried by springs E, secured to insulated brackets D, and adjusted by set-screws *c*. The diaphragm may be of any suitable material, and if metallic the electrodes *b b′* should be insulated therefrom, one electrode, *b*, being electrically connected with a binding-post, *p*, while the other, *b′*, is connected to a similar post, *p′*, Fig. 2. The electrodes *d d′* are electrically connected, through their spring-supports E and brackets D, with the terminals of the primary wire of an induction-coil, F, which, for convenience, is mounted on the tops of the brackets D. The terminals of the secondary coil are connected to binding-posts *f f′*, preferably on the top of the transmitter-box, and adapted to receive the line and ground wires. To the posts *p p′* are connected the terminals of a battery, L. I have found in practice that this arrangement of circuit, in which the battery is between the pairs of electrodes on one side and the primary of the induction-coil is between the electrodes on the other, gives much more satisfactory results than do other circuits heretofore used in transmitters having two or more pairs of electrodes. I do not wish to limit myself to the use of two pairs of electrodes, however, as the number may be increased to any desired extent. For instance, in the diagrams in Figs. 4 and 5 I have shown arrangements of four pairs of electrodes.

In the modification, Fig. 4, the two end pairs, *d* and *d²*, are connected to the battery, the second pair, *d′*, being in series with the first, *d*, and connected to one terminal of the primary, while the third pair, *d³*, in series with the fourth pair, *d⁴*, is connected to the other terminal of the primary coil. In the modification, Fig. 5, the pairs *d d′* are in shunts between one terminal of the battery L and one terminal of the primary coil, while the other pairs, *d² d⁴*, are in shunts between the other terminals of the battery and coil. In both these modifications the battery is interposed between the pairs of electrodes, as in Figs. 1, 2, and 3, while the primary coil is in circuit between the pairs of electrodes on the other side.

I provide the transmitter with one or more free reeds, which I find have the effect of making the transmission of speech and enunciation in the receiver more clear and distinct. I affix the reed or reeds R to the diaphragm in any convenient position and on whichever side may be available, and I wish it to be understood that I do not confine myself to the application of the reeds only to the special forms of transmitter shown, as they may be applied to any form of transmitter employing a diaphragm or equivalent without departing from my invention.

In the transmitters shown in Figs. 1, 2, 3, and 4 I have shown one reed, R, as applied to the inner face of the diaphragm between the pairs of electrodes, while in the modification, Fig. 5, I have shown two reeds, R R, secured to the diaphragm.

I claim as my invention—

1. The combination of the diaphragm of a transmitting-telephone, induction-coil, and two or more pairs of electrodes, with a battery in circuit between the pairs of electrodes on one side and the primary of the coil in cir-

cuit on the other side, between the electrodes, substantially as described.

2. The combination of the diaphragm of a transmitting-telephone and two or more pairs of electrodes, with brackets carrying the free electrodes, and an induction-coil mounted on said brackets, substantially as set forth.

3. A telephonic transmitter having a diaphragm and electrodes and a free reed or reeds combined therewith, for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT F. CONGDON.

Witnesses:
JOHN CLAYTON,
HARRY SMITH.