

(No Model.)

J. M. STEARNS, Jr.

ELECTRIC TELEPHONE.

No. 281,414.

Patented July 17, 1883.

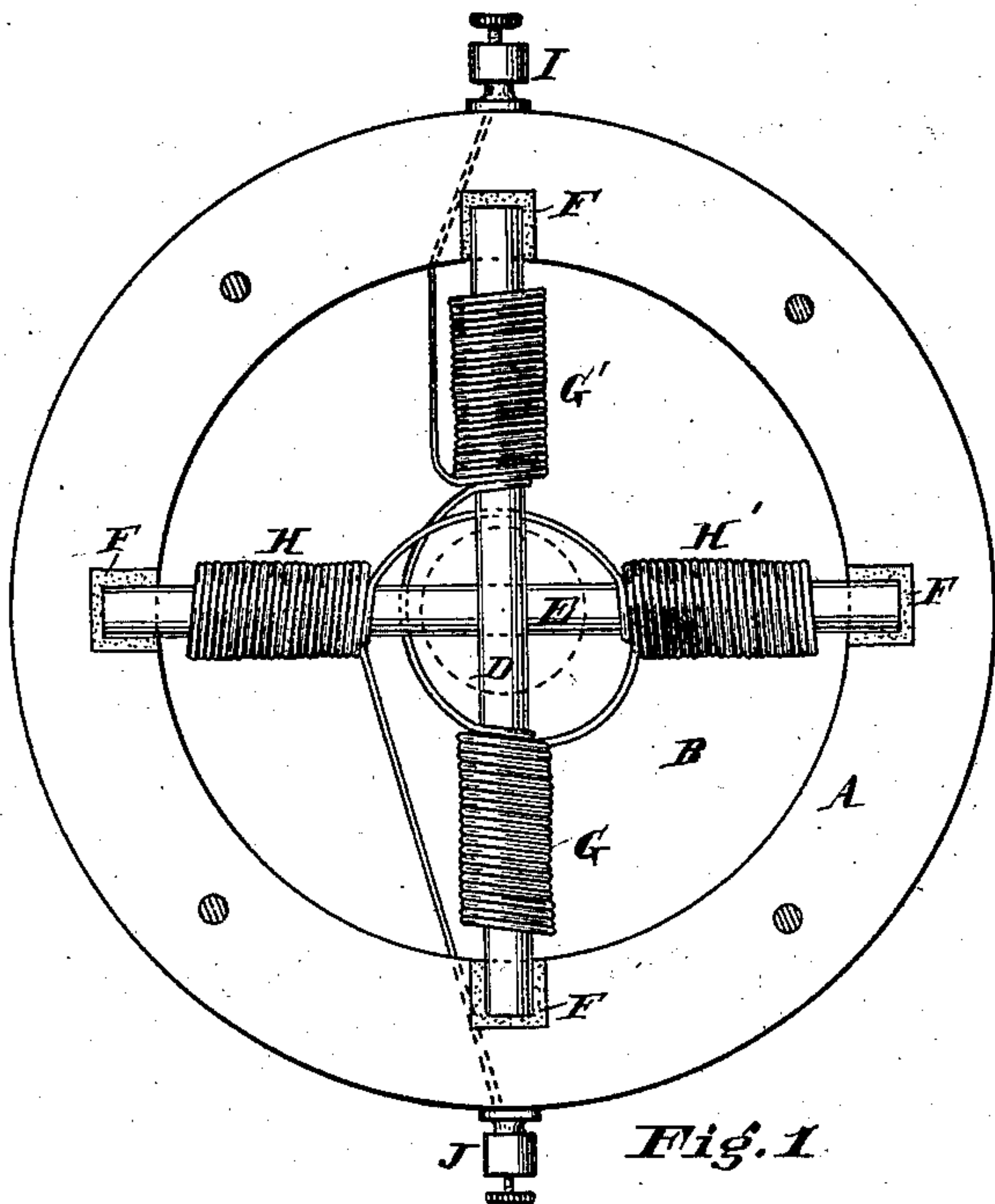


Fig. 1

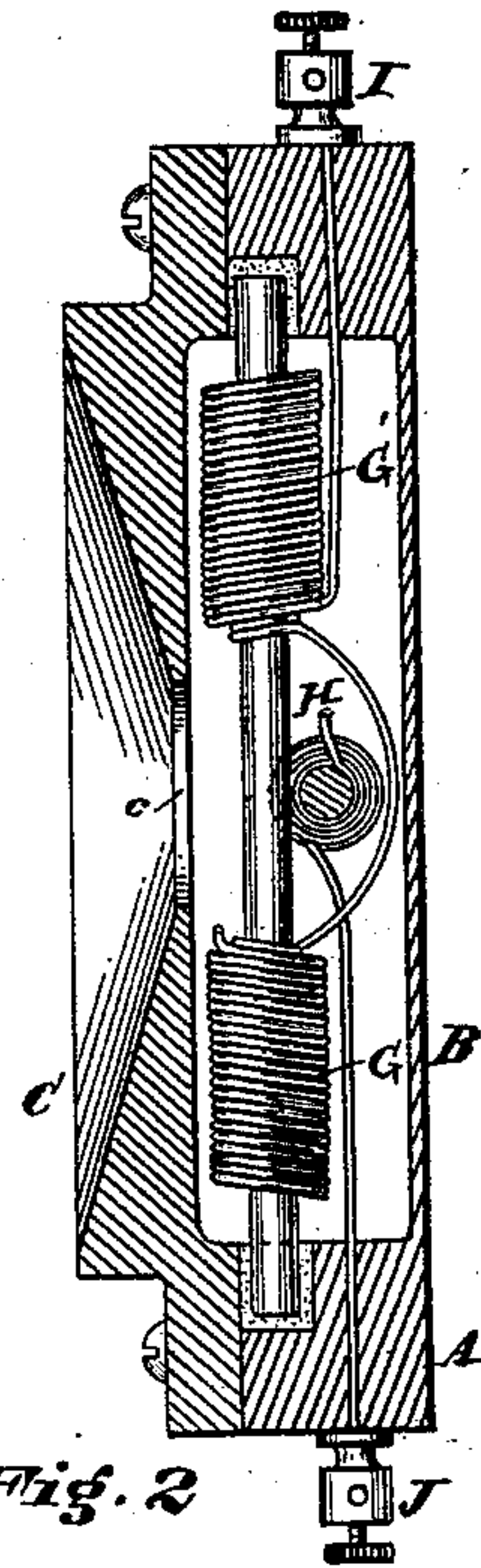


Fig. 2

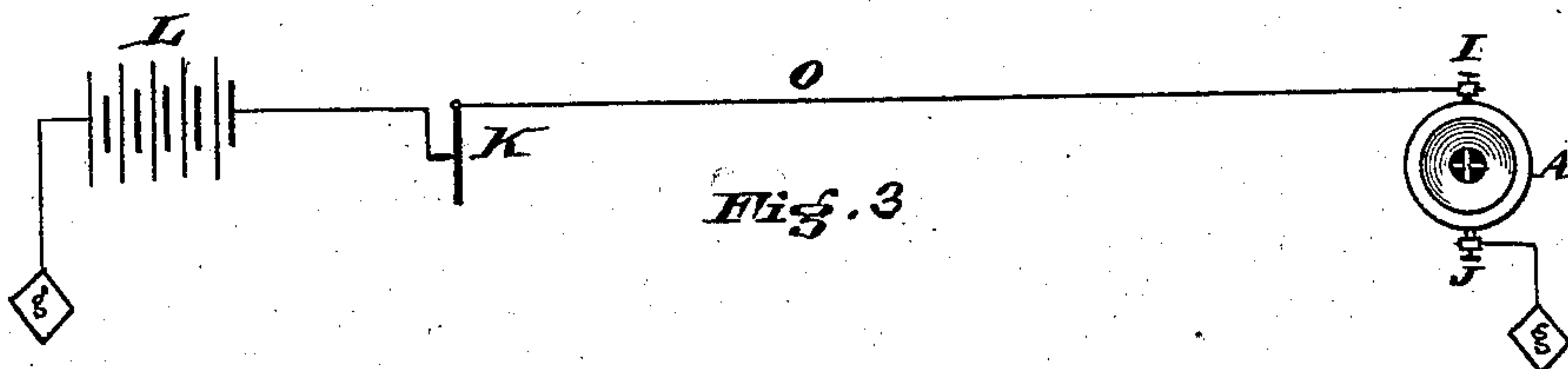


Fig. 3

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UNITED STATES PATENT OFFICE.

J. MILTON STEARNS, JR., OF BROOKLYN, NEW YORK.

ELECTRIC TELEPHONES.

SPECIFICATION forming part of Letters Patent No. 281,414, dated July 17, 1883.

Application filed May 16, 1881. (No model.)

To all whom it may concern:

Be it known that I, J. MILTON STEARNS, JR., of the city of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Electric Telephones, of which the following is a specification.

My invention has reference to telephones for receiving speech over an electric wire; and it consists in arranging two or more electro-magnets at right angles to each other and winding their ends with coils, and securing said electro-magnets in a suitable sounding-box in such a manner as to bring the free part of the cores at their crossing over the opening in the sounding-box; further, in so arranging said electro-magnets that they may react upon each other, all of which is more fully set forth in the following specification, and shown in the accompanying drawings, which form part thereof.

By the construction of the instrument referred to it is obvious that I have what is equivalent to four Reiss receiving-telephones, each in action, and, as they mutually react on each other by reason of the polarities at the center, made by the peculiar winding of the coils, the whole total effect is doubled, if not, as a mathematical fact, quadrupled.

The object of my invention is to provide a receiving-telephone in which the work is done entirely by the electric current and without a diaphragm or plate.

In the drawings, Figure 1 is a front elevation of my improved receiving-telephone with the cover removed. Fig. 2 is a sectional side elevation of same with cover in place. Fig. 3 shows a method of working said telephone in primary or direct circuit.

A is the frame of the sounding-box. B is the sounding board or back, and C is the cover, and is provided with the usual aperture, *c*.

D and E are two electro-magnets, upon either end of which are coils G G' and H H', said coils being so wound that the ends of the electro-magnet D are north poles and the middle a south pole, and the ends of the electro-magnet E south poles and the middle a north pole; or, if desired, the polarity in both electro-magnets in the middle may be alike, for in that case instead of reacting upon each other by attraction, they will react upon each other by repulsion. These electro-magnets D and E are set in the frame A and secured firmly in place by cement F, and are arranged close to each other at the middle, as shown in Fig. 2.

I and J are the two terminals. The cores of the electro-magnets are small in diameter, and the resistance of each coil in a good commercial instrument is from fifty (50) to seventy-five (75) ohms.

In operating, the transmitter K causes the current to traverse wire coils H H' G G' of the receiver, as the transmitter K is in the line-circuit O, provided on one end with a line-battery, L, grounded at *g* and in circuit at the other end with the receiver A, as shown in Fig. 3. The transmitter in this case is adapted to work like any telephone-transmitter now in use.

An instrument when arranged as herein set forth speaks distinctly, and the method of construction allows the instrument to take the common shape of telephones in use, which is a great advantage, and it is very quickly, easily, and cheaply made.

Each of the electro-magnets contains three poles, one at each end of like polarity and one at the middle of the opposite polarity.

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

1. In a telephonic receiver, two or more electro-magnets arranged at right angles to each other and secured in a sounding-box, said electro-magnets being provided with coils on their ends, said coils being wound so as to make the ends of one electro-magnet of one polarity and the middle of the opposite polarity, as and for the purpose specified.

2. In a telephonic receiver, two electro-magnets arranged at right angles and close to each other, said electro-magnets having their ends of one polarity and their middle of the opposite polarity, for the purpose of reacting upon each other, as described.

3. An electric telephone which consists of a sounding-box in which are set two or more electro-magnets having their poles at or about the center of one polarity and their extremities of the opposite polarity, the central poles being arranged to react upon each other, as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

J. MILTON STEARNS, JR.

Witnesses:

JOHN M. STEARNS,
W. GREEN.