

(No Model.)

J. & H. M. GOODMAN.
TELEPHONE TRANSMITTER.

No. 535,284.

Patented Mar. 5, 1895.

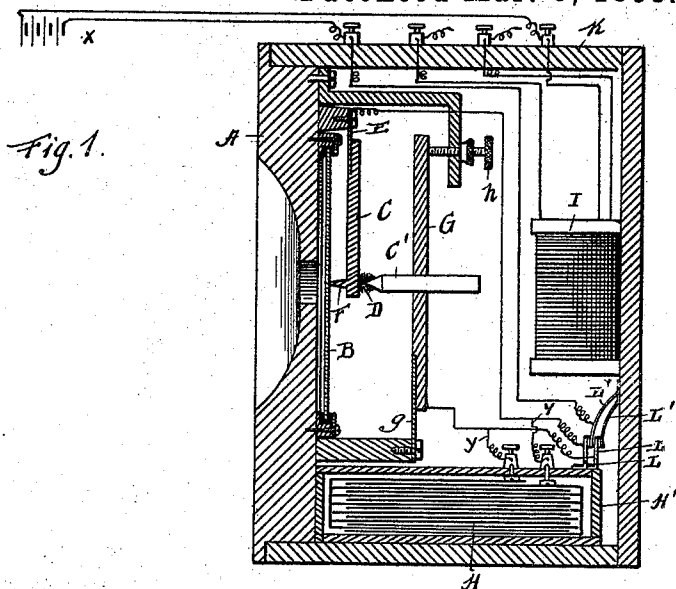
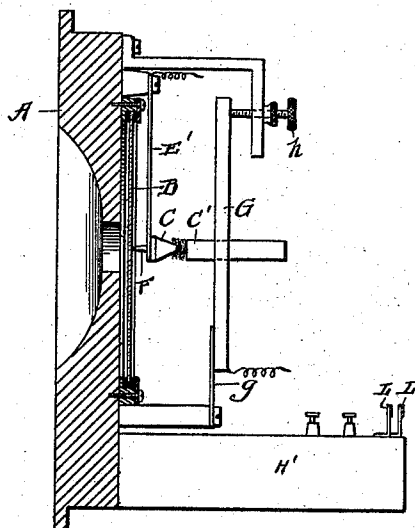


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN GOODMAN AND HENRY M. GOODMAN, OF LOUISVILLE, KENTUCKY.

TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 535,284, dated March 5, 1895.

Application filed September 19, 1894. Serial No. 523,489. (No model.)

To all whom it may concern:

Be it known that we, JOHN GOODMAN and HENRY M. GOODMAN, citizens of the United States, and residents of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Telephone-Transmitters; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a central vertical section of the invention, the battery being shown conventionally. Fig. 2 is a similar view of a modification, partly in section.

This invention has relation to certain new and useful improvements in telephone transmitters, and more especially to that class of such devices as are described and claimed in our Patent No. 518,142, dated April 10, 1894, wherein are employed two magnets having their opposite poles approximated in or nearly in a straight line, and having interposed between such poles a mass of comminuted magnetic material which forms the variable resistance of the transmitter.

The invention also relates to similar improvements in that class of transmitters described and claimed in our Patent No. 520,306, dated May 22, 1894, wherein two magnets have their opposite poles approximated at substantially right angles, with interposed comminuted magnetic material.

In the instruments of both these patents one of the magnets was mechanically connected to the diaphragm of the transmitter, while by the present invention it is our object to provide a spring support for the magnets whereby one magnet is held in light contact with the diaphragm without positive connection therewith. By this arrangement, the diaphragm is free from the strain or stress of the magnet, and we are also enabled to complete the local circuit through the magnet support instead of through the diaphragm so that the latter need not necessarily be constructed from magnetic material.

A further object of the invention is found

in certain other mechanical improvements, as will hereinafter appear.

With these objects in view, the invention consists in the novel construction and combination of parts, all as hereinafter described and pointed out in the appended claims.

Referring to the accompanying drawings, the letter A designates the mouth-piece; B, the diaphragm; C, C', the two magnets, which in the instrument illustrated in Fig. 2, have their opposite poles approximated in or nearly in a straight line, and D the mass of comminuted magnetic material interposed between the approximated poles. In Fig. 1, the two magnets are shown as having their poles approximated at substantially right angles to each other.

The magnet C in Fig. 2 is supported by a spring or flexible arm E which is secured in the case which contains the mouth piece at any suitable point.

In Fig. 1, the magnet is placed at right angles to the magnet C', and in a plane parallel to that of the diaphragm, and is supported by a shorter spring arm E'. In both forms of the instrument this magnet C is provided with a point F which is held by the spring in light contact with the diaphragm.

The magnet C' in both forms of the instrument is carried by a bar G, which is connected to the case at one end by a spring g, or other movable joint and at the other end makes contact with an adjusting screw h.

H is a condenser which is placed in a box H' which supports the mouth piece and front of the instrument.

I is an induction coil.

The path of the current is from the battery X to the spring or flexible arm E or E', to the magnet C, thence to magnet C' through magnetic material D, thence to primary of the induction coil, and from said coil back to the battery. The line wires connect with the secondary of the induction coil. The condenser connections Y, Y, are made with the respective supports of the two magnets on opposite sides of the mass of comminuted magnetic material, whereby said condenser is made a shunt of the primary or local circuit.

K is the outer casing or case proper of the transmitter, having an open front into which is inserted the box carrying the condenser

and mouth piece, which closes said front. Contact is made upon the insertion of said box by means of metal strips L, which impinge against similar strips L' in the case proper, 5 said strips L' being connected with the respective terminal posts upon the outside of said case.

10 We have found that a diaphragm composed of glass is very effective in the instrument above described.

The magnets may be electro-plated or otherwise coated with various metals or alloys to prevent oxidation. A coating of nickel is preferred for the purpose.

15 Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

20 1. In a telephonic instrument, the combination with the diaphragm and with two magnets having their opposite poles approximated, and a mass of comminuted magnetic material interposed between such poles, of a spring or flexible arm forming a support for one of said magnets, and maintaining it in

light contact with the diaphragm, and an adjustable arm forming the support for the other of said magnets, substantially as specified. 25

2. In a telephonic instrument, the combination with a diaphragm, a pair of magnets having their opposite poles approximated, and a 30 mass of magnetic material interposed between said magnets, of a spring or flexible arm forming a support for one of said magnets and maintaining it in light contact with said diaphragm, a bar carrying the other of said magnets, a movable piece or spring connecting 35 one end portion of said bar to the case, and an adjusting screw in contact with the opposite end portion of said bar, substantially as specified.

40 In testimony whereof we affix our signatures in presence of two witnesses.

JOHN GOODMAN.

HENRY M. GOODMAN.

Witnesses:

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