

(No Model.)

D. DRAWBAUGH.
TELEPHONE TRANSMITTER.

No. 291,472.

Patented Jan. 1, 1884.

fig. 1.

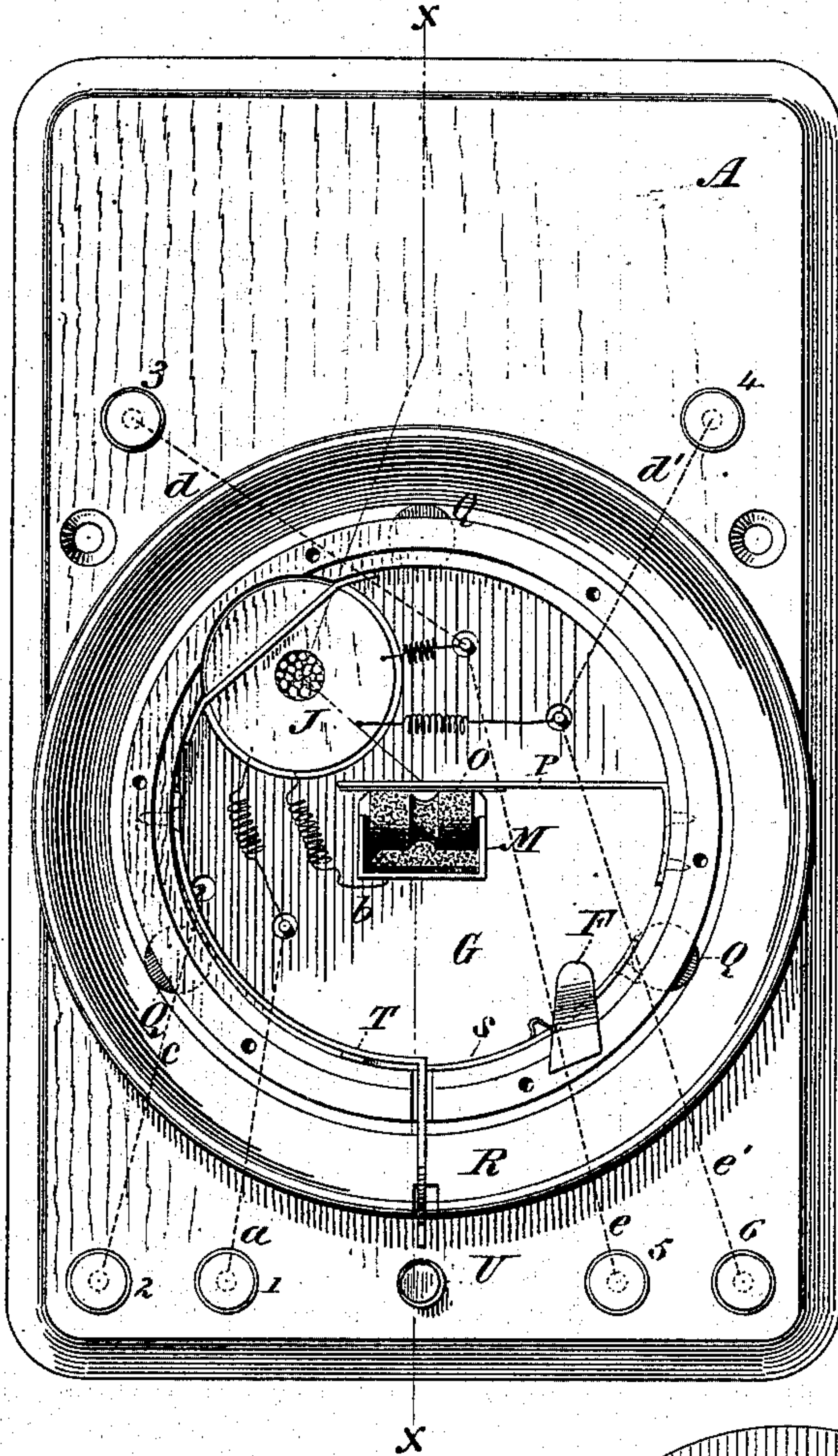


fig. 2.

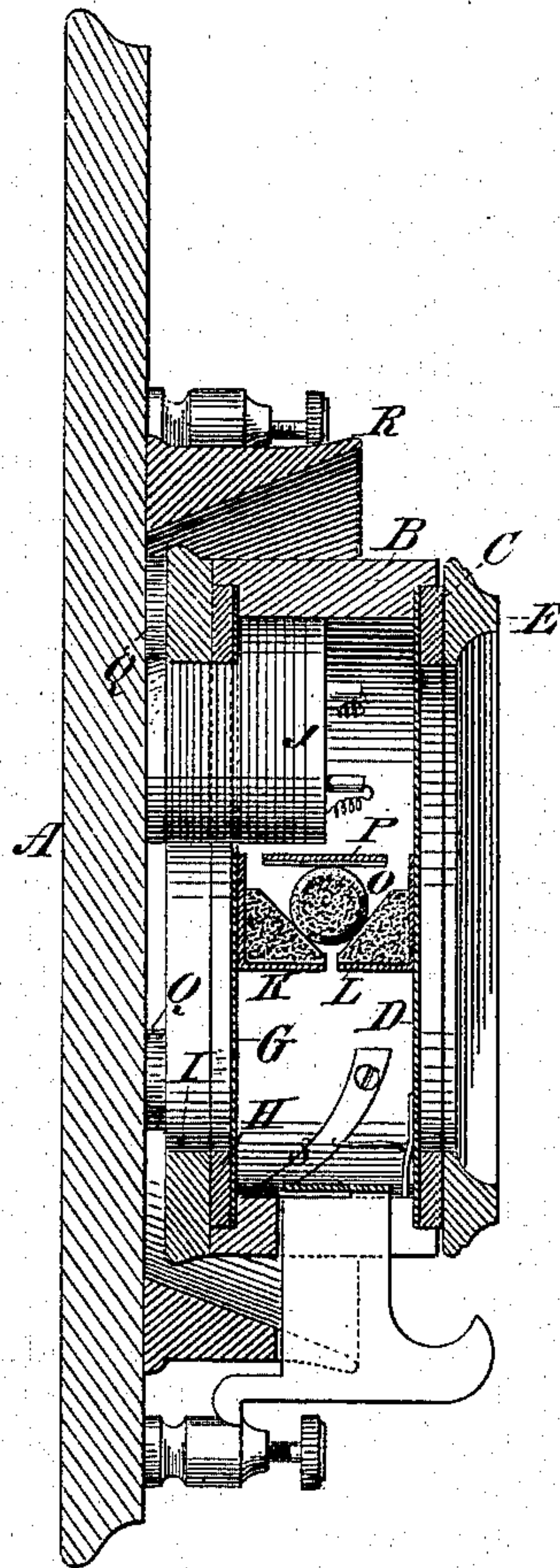
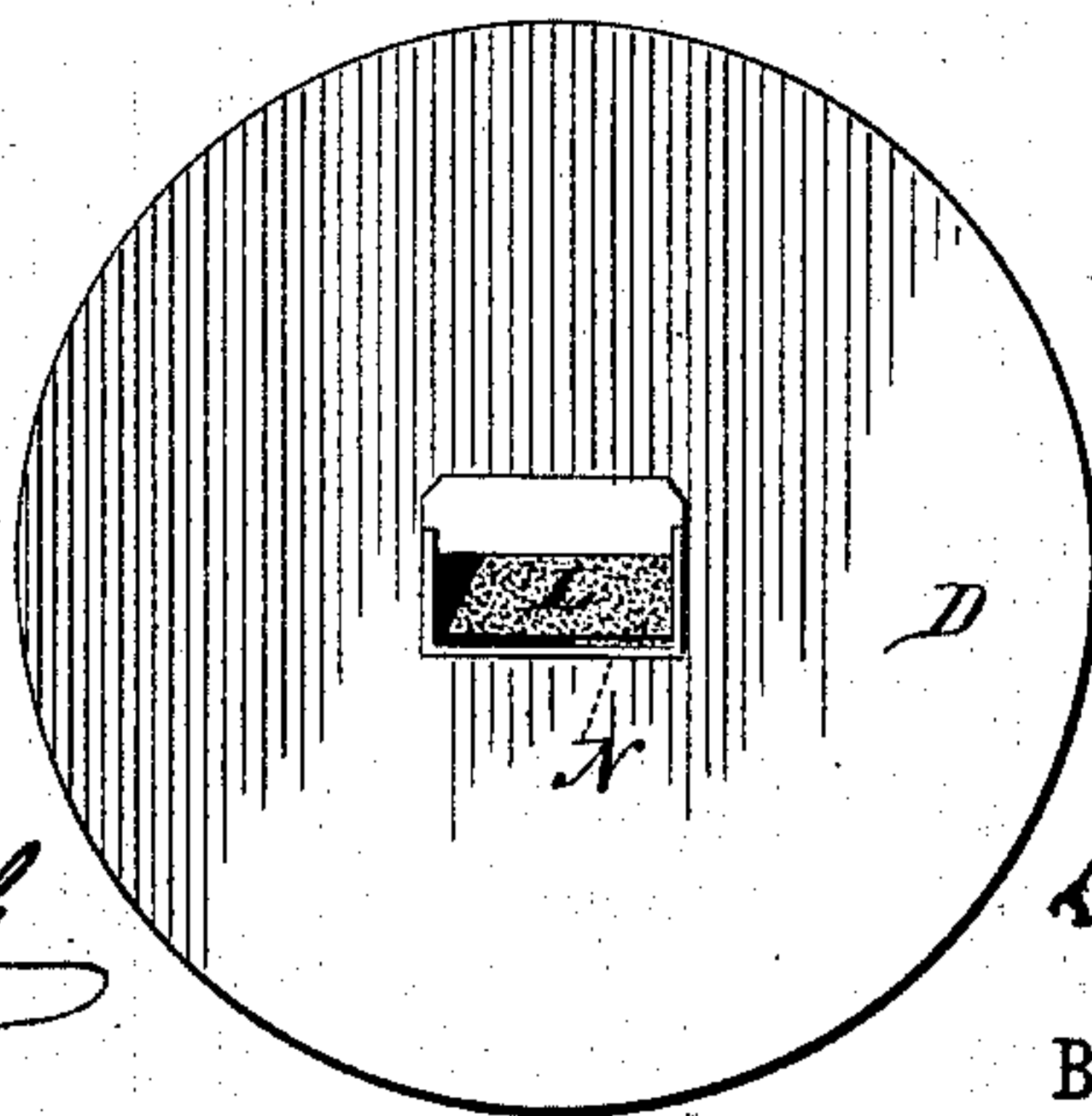


fig. 3.



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UNITED STATES PATENT OFFICE.

DANIEL DRAWBAUGH, OF EBERLY'S MILL, PENNSYLVANIA.

TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 291,472, dated January 1, 1884.

Application filed December 27, 1882. (No model.) Patented in England September 4, 1883, No. 4,247, and in Belgium September 15, 1883, No. 62,503.

To all whom it may concern:

Be it known that I, DANIEL DRAWBAUGH, of Eberly's Mill, Cumberland county, Pennsylvania, have invented a new and useful Improvement in Telephone-Transmitters, of which the following is a specification.

The invention relates to a telephone-transmitter in which a series of low conductors are arranged between two diaphragms, one diaphragm being on each side of the inclosing box or case.

The invention consists in the construction and arrangement set forth, whereby the box of the instrument is supported at a distance from the back board, so that a sound-receiving chamber is formed between said back board and the rear diaphragm, and also in the sound-reflector and the chamber thereby formed between the inner periphery of said reflector and the exterior of the inclosing-case, whereby sound-waves entering between the box and the reflector are reflected into the space between the rear diaphragm and the back board, and concentrated upon said diaphragm.

In the drawings, Figure 1 is a front view of the instrument with the outer diaphragm removed. The dotted lines show the lead of the circuit-wires. Fig. 2 is a sectional view of the same on the line *x x*. Fig. 3 is a rear view of the front diaphragm.

Similar letters of reference indicate like parts.

A is the back board.

B is the box or case.

D is the front diaphragm, of sheet metal. Said diaphragm sits in a recess in the case, as shown. In front of it is a ring, C, of elastic material, such as rubber.

E is the cover having a large central aperture, and secured in place by screws or other suitable means. The rear diaphragm, G, also of sheet metal, is placed in an annular recess in the case, and in the rear of it is a rubber ring, H, and, finally, a wooden annular cover, I. Through the rear diaphragm, G, is made a circular opening, through which passes the induction-coil J, which is secured to the base-board A. The arrangement of the low conductors is substantially the same as set forth in Letters Patent No. 266,615, granted to me

October 31, 1882, and in other applications of mine now pending.

K and L are pieces of carbon, shaped as shown, and held in metal brackets M and N, which brackets are secured to the inner sides of the diaphragms G and D. The pieces K and L do not meet. Upon their proximate inclined sides rests a cylindrical carbon, O. Above this carbon, and serving to keep it in place when the instrument is inverted, is a bar, P, secured to the interior of the case, as shown in Fig. 1.

Between the annular rear cover, I, and the back board A are studs Q, which support the case B at a distance from the back board.

Surrounding the case B, and attached to the back board A, is an annular sound-reflector, R, having an inclined inner periphery, so that sound-waves entering the chamber between said reflector and the outer periphery of the cylindrical case B are reflected or concentrated into the space or chamber between the back board A and the rear diaphragm, G, and are thus enabled to act and be in some measure concentrated upon the latter. In this way both diaphragms of the instrument may be affected simultaneously—the front diaphragm, D, by sound-waves directly impinging upon it, and the rear diaphragm, G, by waves reflected and concentrated into the space between it and the back board. This results in compression being applied to the series of carbons from both ends of said series, which renders the apparatus more sensitive in its operation.

The circuits in the instrument lead as follows: from one pole of the battery to the binding-post 1; by wire *a* (dotted lines) to the primary of the induction-coil J; by wire *b* to the carbon K; thence to carbon O, carbon L, and diaphragm D; on the latter to contact-piece F; to spring contact-piece T, when said contact-pieces S and T are in contact; to the wire *c* (dotted lines) and binding-post 2, and then to the other pole of the battery.

U is a post on which a receiving-telephone may be hung when out of use, the ring on said telephone pushing upward the contact-piece T, and thus breaking the circuit. The post U is shown only in Fig. 1.

The secondary wire of the induction-coil J

connects with the binding-posts 3 and 4 by wires *d d'*, (dotted lines,) which posts communicate with the line.

Branch wires *e e'* (dotted lines) from the 5 wires *d d'* connect with binding-posts 5 and 6, to which posts the receiving-telephone is attached.

I claim as my invention—

1. In a telephone, the combination of two 10 diaphragms covering opposite sides of the inclosing box or case of the instrument and rigidly secured to said box or case, a means of modifying an electric current so as to render it capable of transmitting articulate speech, 15 arranged between said diaphragms and influenced by the vibrations of both of them, and a means of reflecting or concentrating sound-waves upon that one of the two diaphragms which does not face the source of sound, sub- 20 stantially as described.

2. In a telephone, in combination with an inclosing box or case containing two diaphragms on opposite sides thereof, and a means

of modifying an electric current so as to render it capable of transmitting articulate speech, 25 arranged between said diaphragms and influenced by the vibrations of both of them, two communicating sound-receiving chambers—one chamber being formed annularly, or substantially so, around the exterior of the inclos- 30 ing-case, and the other being formed in rear of said case, substantially as described.

3. The combination of, first, a telephone containing an inclosing-case, two diaphragms, and means for modifying an electric current so as 35 to render it capable of transmitting articulate speech; second, a back board or base; third, supports arranged between the rear side of said telephone and the back board; and, fourth, a sound-reflecting projection attached to said 40 back board and surrounding the telephone-case, substantially as described.

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Witnesses:

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