

(No Model.)

D. DRAWBAUGH.
TELEPHONE TRANSMITTER.

No. 290,980.

Patented Dec. 25, 1883.

fig. 1.

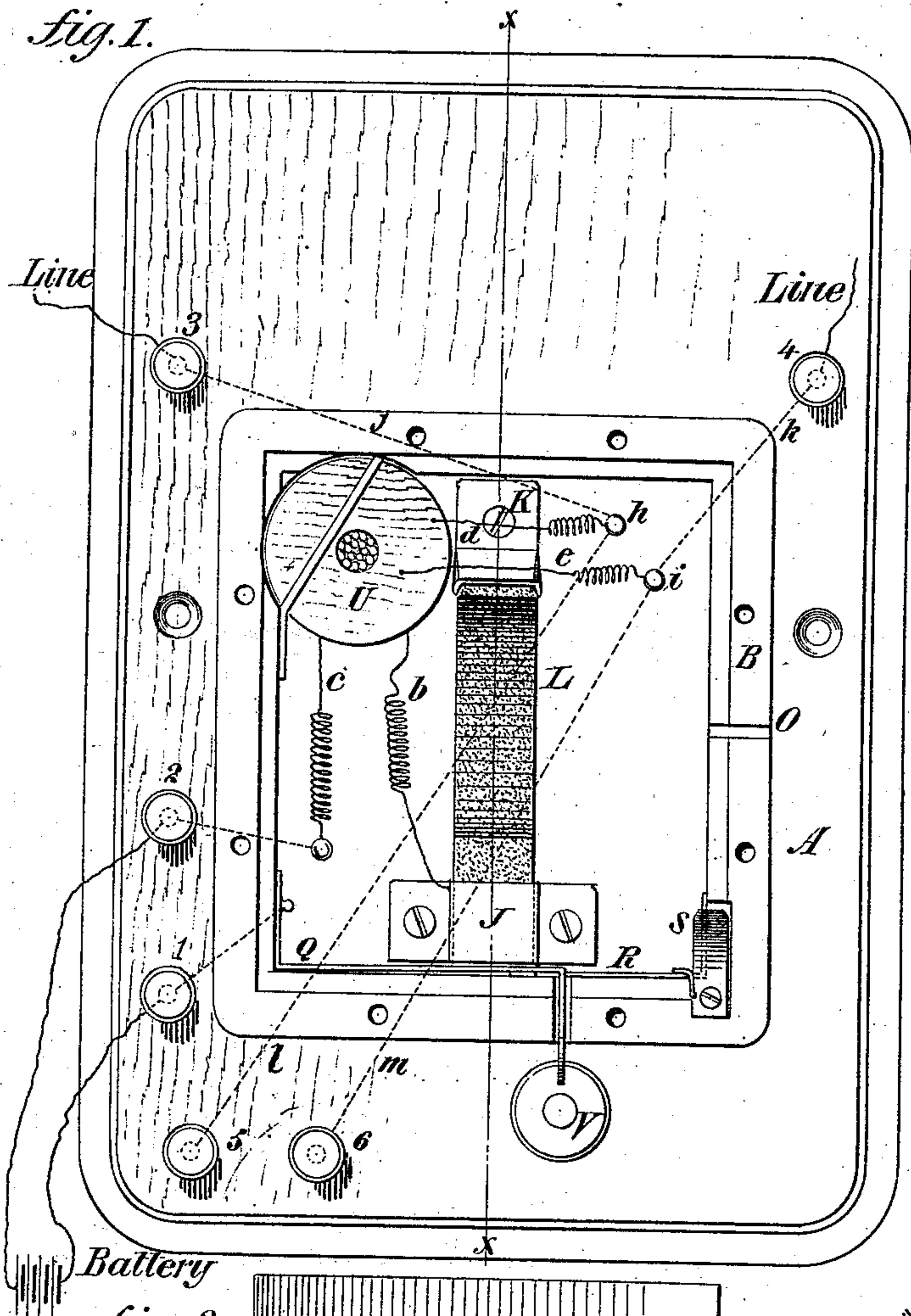


fig. 2.

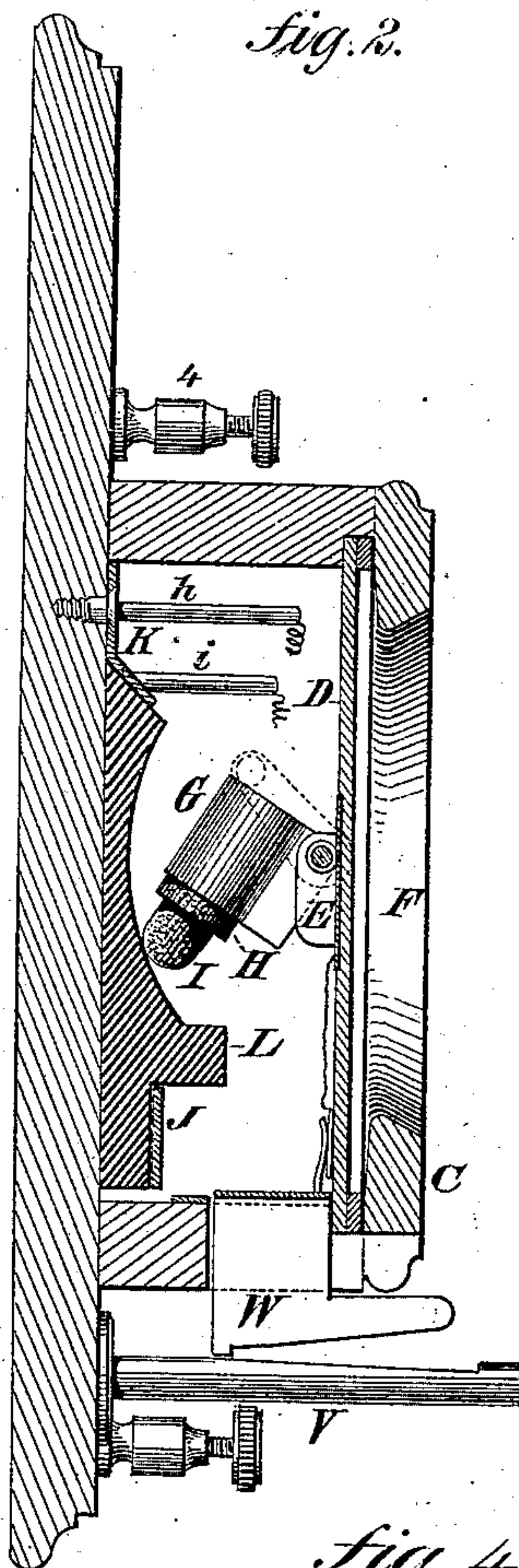


fig. 3.

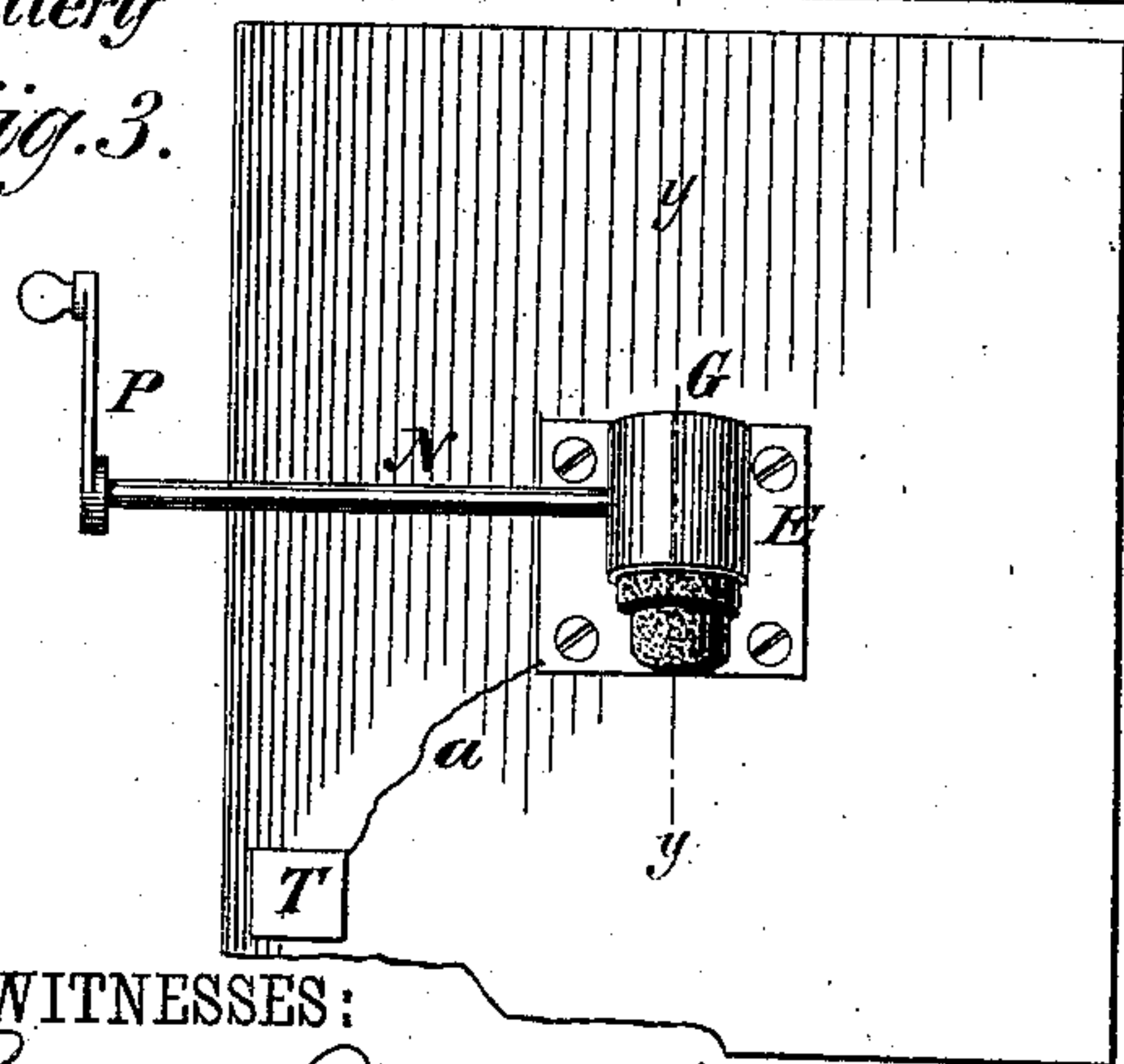
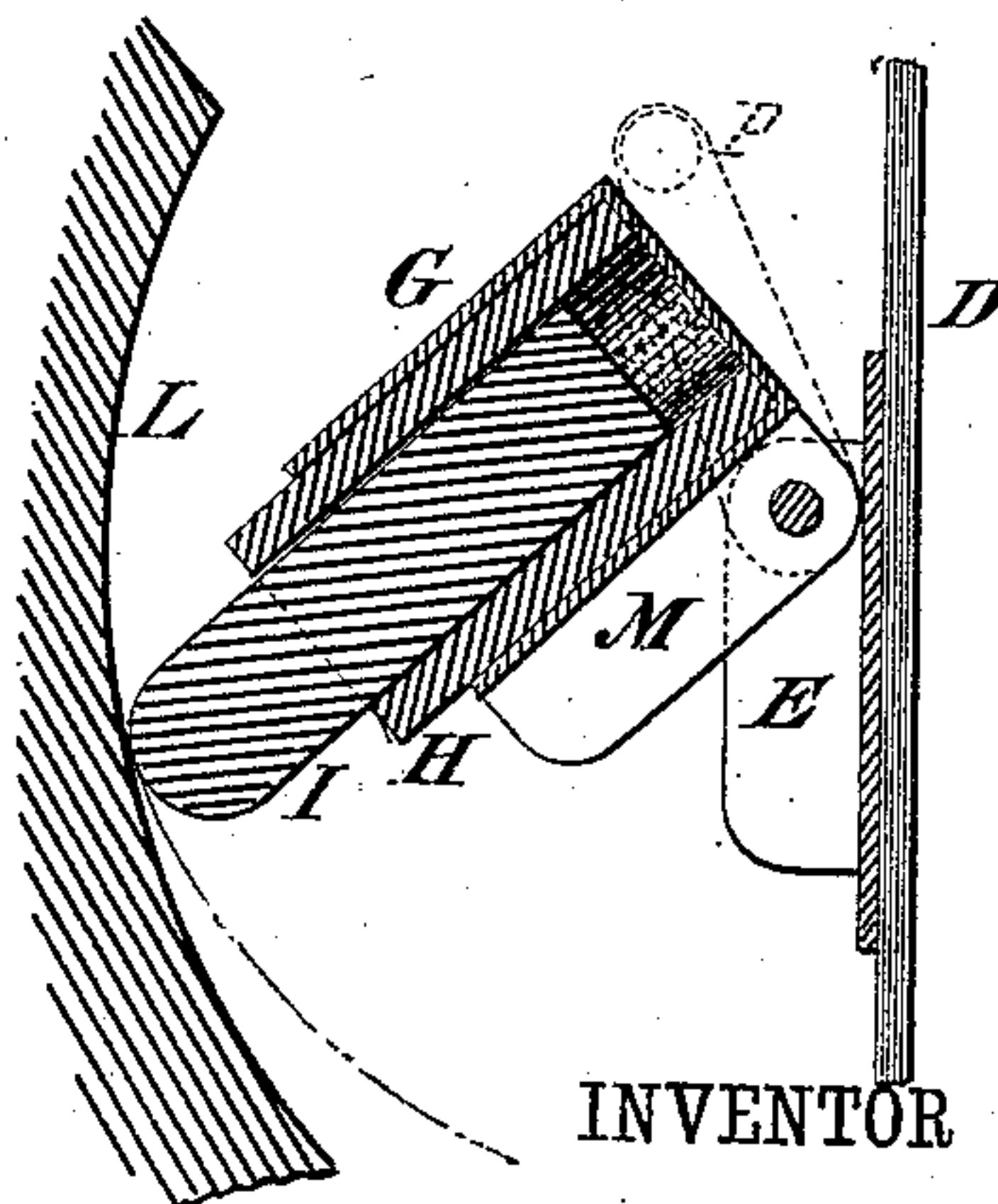


fig. 4.



WITNESSES:

Gustave Dietrich
M. F. Burns

INVENTOR

Daniel Drawbaugh
BY *Dark Benjamin*
ATTORNEY

UNITED STATES PATENT OFFICE.

DANIEL DRAWBAUGH, OF EBERLY'S MILL, PENNSYLVANIA.

TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 290,980, dated December 25, 1883.

Application filed May 15, 1883. (No model.)

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 that class of telephone-transmitters in which a current is modified and rendered capable of transmitting articulate speech by passage through pieces of low conducting material in contact.

The invention consists in the construction of the instrument more particularly hereinafter set forth, and in the devices described whereby the initial pressure between carbons may be adjusted with great delicacy.

In the accompanying drawings, Figure 1 is a front view of the instrument with the diaphragm and cover removed. Fig. 2 is a vertical section on line X X of Fig. 1. Fig. 3 is a rear view of the diaphragm with the carbons and carbon-holder attached. Fig. 4 is a vertical section of the carbons, the movable carbon being shown in enlarged section on the line Y Y of Fig. 3.

Similar letters of reference indicate like parts.

A is the base or back board of the instrument. B is the inclosing-case. C is the cover, having a mouth-piece orifice, F, and D is the diaphragm, here shown constructed of wood or other non-conducting material.

To the rear side of the diaphragm, and at about its center, is secured a metal bracket, E. To said bracket is pivoted a metal cup, G, which contains a piece of carbon, H, or other low conducting material, in the form of a hollow cylinder.

Within the carbon H loosely fits a solid cylinder, I, of carbon or other low conducting material, having a rounded lower end.

To the base-board of the instrument is secured a third piece, L, of carbon or other low conducting material, which is secured to said base by metal brackets J K. The front side of the carbon L is rounded or made concave, substantially as shown in Figs. 2 and 4.

Rigidly secured to an offset, M, of the cup G is a rod or shaft, N, which extends horizontally through an opening, O, in the side of the case, and at its outer end it is provided with

a lever, P. Said shaft N passes through the bracket E, and has a nut or enlargement at its end, so that it serves as a pivot between the cup G and bracket E. By moving the lever P the inclination of the cup G, and consequently of the carbons therein contained, may be changed as desired. As the cup G more nearly approaches a vertical position the carbon I slides out of the carbon H and rests with a greater proportion of its weight against the concave or cam surface of the carbon L. On the other hand, when the cup G is turned toward a horizontal position, the carbon I, by its contact with the concave face of carbon L, is forced into the carbon H, so that a less proportion of its weight is sustained by the carbon L. It will further be apparent that as the cup G is turned vertically, and, as already described, more of the weight of the carbon I comes on the carbon L, less of that weight will fall upon the inclosing-carbon H, while at the same time the area of contact between the carbon I and carbon H will be lessened, owing to the sliding of the carbon I out of the carbon H. So, conversely, when the cup G is turned into a horizontal position, less of the weight of the carbon I will fall on the carbon L, while more of it will be sustained by the carbon H, and at the same time there will be a greater area of contact between carbon I and carbon H, owing to the sliding of the former into the latter.

It will be apparent from the foregoing that there is always a light and delicate contact between two carbons of the three, and that this may be varied with great delicacy through what may be regarded as the differential disposition of the weight of the solid carbon cylinder upon the other carbons as their relative adjustment is changed, so that the initial pressure between the electrodes in the telephone may be regulated with the utmost nicety to give the best result by simply moving the lever P.

The circuits in the instrument proceed as follows: from the battery to the binding-post 1, to the spring Q, to the plate R, and thence by wire to the contact-plate S. When the diaphragm is in place, a plate, T, on said diaphragm comes in contact with the plate S, and the current is conducted from the plate

T, by the wire *a*, to the bracket E, cup G, carbons H I, carbon L, bracket J, wire *b*, to the primary of the induction-coil U, thence by wire *c* to the binding-post 2, and thence back to the battery. The secondary wires *d e* of the coil U lead to posts *h i*, which posts communicate by wires *j k* with the line binding-posts 3 4, and also by branch wires *l m* to the binding-posts 5 6, to which a receiving-instrument may be connected.

V is a pin on which a receiving-instrument may be hung when not in use, in which case the ring in said instrument presses upward the downward projection W of the spring Q and breaks contact between the springs Q and R.

I claim as my invention—

1. In a telephone-transmitter, and in combination with the diaphragm thereof, a movable hollow cylinder of low conducting material, a solid cylinder of low conducting material fitting loosely in said hollow cylinder, and a fixed piece or block of low conducting material, against which the end of said solid cylinder rests in contact by gravity, and a means for varying the inclination of said hollow cylinder, substantially as described.

2. In a telephone-transmitter, the combi-

nation of a diaphragm, a support pivoted or hinged to said diaphragm, a hollow cylinder of low conducting material contained in said support, a solid cylinder of low conducting material fitting in said hollow cylinder, and a fixed piece or block of carbon, against which the lower end of said solid cylinder rests in contact by gravity, substantially as described.

3. In a telephone-transmitter, the combination of a diaphragm, a hollow cylinder of low conducting material hinged or pivoted thereto, a solid cylinder of low conducting material loosely fitting in said hollow cylinder, and a fixed cam, against the surface of which the lower end of said solid cylinder rests by gravity, and which, when said hollow cylinder is vibrated in one direction, forces the solid cylinder into the hollow cylinder, substantially as described.

4. In a telephone-transmitter, the combination of the diaphragm D, bracket E, cup G, shaft N, a means of rotating said shaft, carbon H, carbon I, and carbon L, substantially as described.

DANIEL DRAWBAUGH.

Witnesses:

FRED. M. OTT,
M. W. JACOBS.