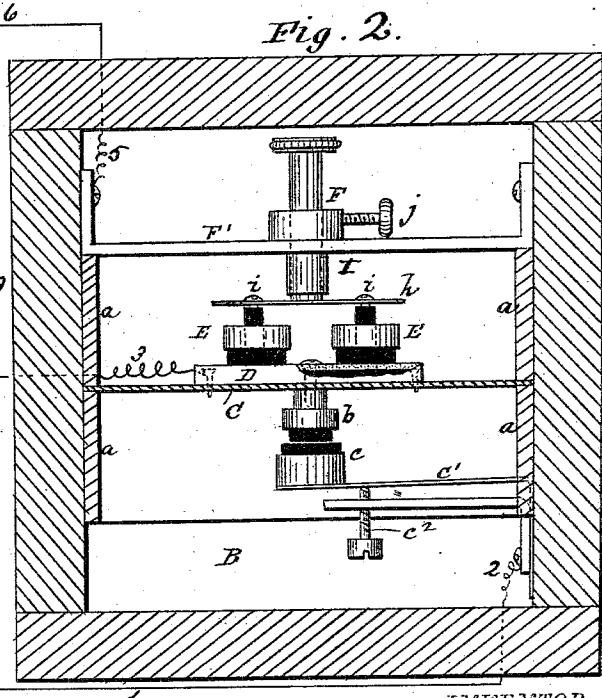
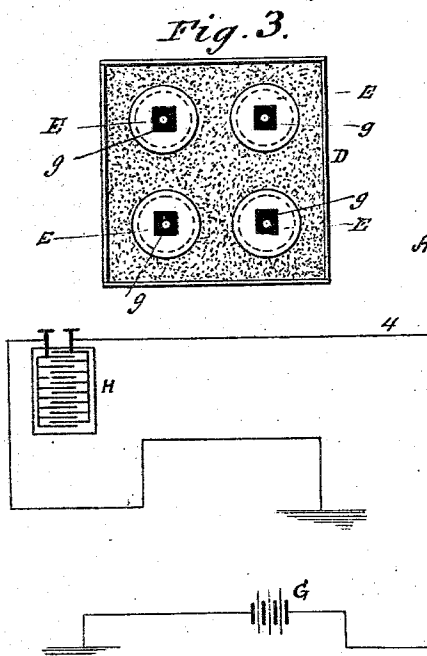
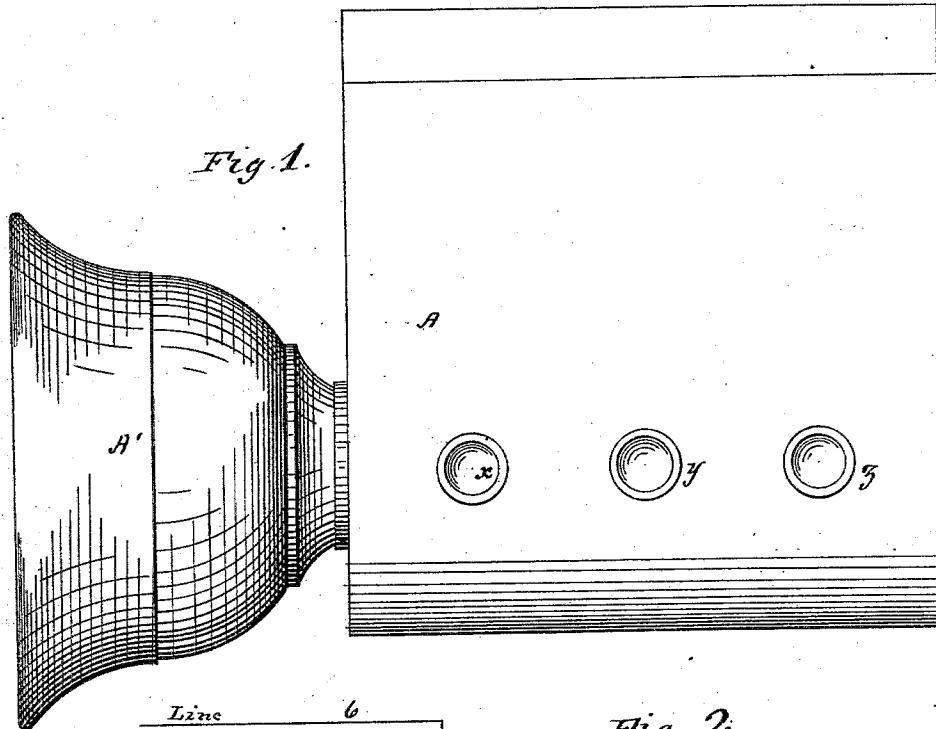


(No Model.)

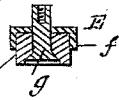
J. A. MALONEY.
TELEPHONE TRANSMITTER.

No. 296,421.

Patented Apr. 8, 1884.



WITNESSES
Chas. R. Burr
W. E. Bowen

Fig. 4. 
Jas. A. Maloney
 by *Marcellus Bailey*
 his Attorney

UNITED STATES PATENT OFFICE.

JAMES A. MALONEY, OF WASHINGTON, DISTRICT OF COLUMBIA.

TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 296,421, dated April 8, 1884.

Application filed October 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. MALONEY, of Washington city, in the District of Columbia, have invented certain new and useful Improvements in Telephone-Transmitters, of which the following is a specification.

My invention has to do, mainly, with the carbon contacts of electric-telephone-transmitters and other instruments in which microphonic contact is required. The object is to keep the microphonic contact unimpaired and to prevent the accumulation and building up between the contacts of fine carbon dust, which results finally in establishing a closed circuit between the contacts, and thus incapacitating the instrument for efficient work. I have found that the object I have in view can be attained by interposing between the carbon contacts loose iron filings or other metal in a state of minute division, the easiest way of practically carrying out this improvement being to place the carbon contacts vertically one above the other, and to sprinkle the acting face of the lower carbon contact with iron filings, which are kept in place by a rim surrounding the carbon. This and other features of my invention have been devised, principally, to meet the needs of the transmitter described in my application for Letters Patent filed July 11, 1883, Serial No. 100,548, and it is in that connection that I have illustrated the same in the accompanying drawings, in which—

Figure 1 is a side elevation of the transmitter. Fig. 2 is a vertical section of the same from front to rear, the line of section being to one side of the mouth-piece, which is not represented. This figure also represents in a diagrammatic way the circuit-connections. Fig. 3 is a plan view of the large carbon contact-plate which in Fig. 2 is fixed to the rear face of the diaphragm, together with the four loose carbon contact-buttons which co-operate with it. Fig. 4 is a section of one of the loose carbon contact-buttons detached.

A is the case of the instrument. A' is the mouth-piece, which opens into the resonating-chamber B, closed at the top by the horizontal diaphragm C, held in place by cleats a. On the upper or rear face of the diaphragm is the carbon contact-plate D, and above it are suspended, by a vertically-adjustable car-

rier or support, F, one or more loose carbon contact-buttons, E, (four in number in the present instance,) said buttons being constructed and arranged substantially in the manner described in my aforesaid application, Serial No. 100,548. I here remark that this combination and arrangement of the horizontal diaphragm C, carbon contact D, loose carbon contact button or buttons E, and carrier F, which I believe to be new with me, possesses advantages over that described in my aforesaid application, inasmuch as while equally as efficient as the latter it is simpler in construction and more readily applied and used.

On the front or under face of the diaphragm is the fixed carbon contact *b*, with which co-operates the movable and adjustable carbon-contact *c*, mounted on a spring-metal arm, *c'*, which is controlled by an adjusting-screw, *c''*. Normally contacts *b* and *c* have full contact, and contacts D and E have only partial or incomplete contact. The circuit-connection and adjustments shown in Fig. 2 are the same as those described in my Letters Patent No. 274,353, of March 20, 1883. Battery G, having one pole grounded, is in circuit with condenser H through wire 1, binding-post *x*, wire 2, arm *c'*, front contacts, *c b*, rear contact, D, wire 3, binding-post *y*, and wire 4. The condenser discharges intermittently to line through wire 4, post *y*, wire 3, contacts D, E, carrier F, bridge F', wire 5, post *z*, and line-wire 6.

Upon the face of horizontal rear contact-plate, D, for the purposes hereinbefore indicated, is sprinkled loosely iron or other good conducting metal in a minutely-divided condition, as indicated at *d* in Figs. 3 and 2, the same being kept on the plate by a rim or circumscribing flange, *e*.

Each carbon button E is substantially the same in construction and arrangement as the loose carbon contact-button described in my application Serial No. 100,548, consisting, as seen in Figs. 3 and 4, of a carbon disk or button proper, *f*, mounted loosely on a carbon shank, *g*, of square cross-section, and having a recess in its under face to receive the head of the shank. Each shank is held to the frame or plate *h* on the lower end of carrier-stem F by a screw, *i*, which passes down into it through

the plate. For preventing fracture of the buttons, they are provided with close-fitting metal caps *j'*.

5 The carrier-stem F fits and its adapted to slide vertically in a sleeve, I, fixed to the bridge-piece F', and is held in its adjusted position by a set-screw, *j*.

10 Having now described my improvements, and the best way known to me of carrying the same into effect, what I claim is—

1. The combination of the two carbon contact-points and interposed loose iron filings or other finely-subdivided metal, substantially as and for the purpose hereinbefore set forth.

2. The combination, substantially as here- 15
inbefore set forth, of the diaphragm C, carbon contact-plate D, having on its face loose iron filings or other finely-divided metal, carbon contact button or buttons E, and adjust- 20
able carrier F.

In testimony whereof I have hereunto set my hand this 26th day of October, 1883.

JAMES A. MALONEY.

Witnesses:

EWELL A. DICK,
J. WALTER BLANDFORD.