

(No Model.)

A. W. ROSE.
ELECTRIC TELEPHONY.

No. 252,141.

Patented Jan. 10, 1882.

Fig 2.

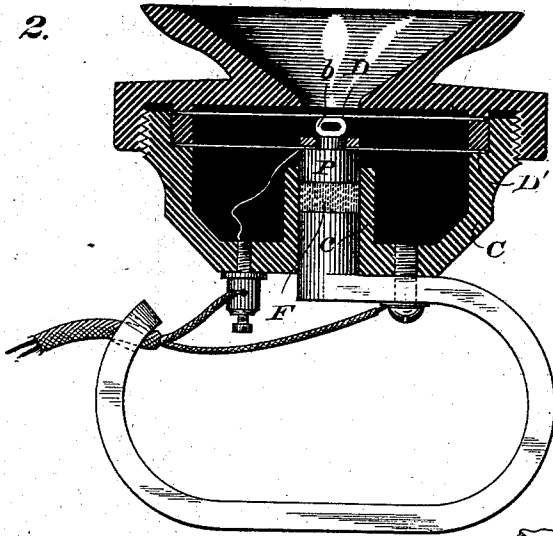


Fig. 3.

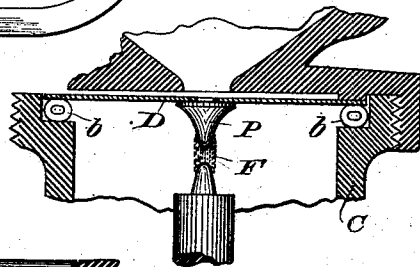
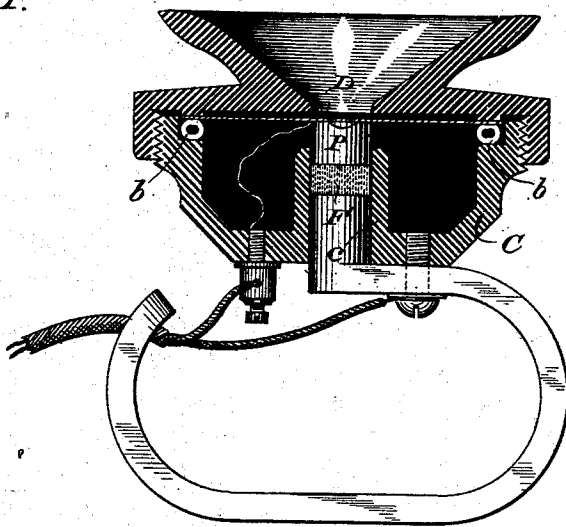


Fig 1:



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE.

ALLEN W. ROSE, OF NEW YORK, N. Y., ASSIGNOR TO CHARLES A. CHEEVER,
OF SAME PLACE; SAID CHEEVER ASSIGNOR TO HIMSELF AS TRUSTEE.

ELECTRIC TELEPHONY.

SPECIFICATION forming part of Letters Patent No. 252,141, dated January 10, 1882.

Application filed October 26, 1880. (No model.)

To all whom it may concern:

Be it known that I, ALLEN W. ROSE, a citizen of the Dominion of Canada, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Transmitting-Telephones, of which the following is a specification.

My improvement relates to that class of transmitting-telephones in which magnetic filings constitute a portion of a galvanic circuit and are held suspended by magnetism in a magnetic field therein. Such apparatus and its mode of operation constitute the subject-matter of other applications filed by me simultaneously with this. My present claims are therefore limited to the specific combinations and organization of devices set forth at the end of this specification.

In the accompanying drawings, Figures 1, 2, and 3 respectively represent vertical transverse sections through different modifications of my apparatus.

In Fig. 1 a case, C, is shown as provided with a guideway, *c*, in which is secured the end of a magnet, *e*, curved so as to form a handle for the instrument. Metallic filings F, in a loose condition, are interposed between the end of this magnet and a plunger, P, which must be a conductor of electricity, and is preferably of magnetic material, which plunger is capable of moving freely in the guideway, and is secured to a diaphragm, D, connected to a casing through the interposition of buffers or springs *b*, which allow it to yield as occasion requires. One wire of an ordinary galvanic circuit is connected with this plunger, and the other with the magnet *e*, the circuit passing through them and through the filings. Under this organization sound-waves impinging upon the diaphragm vibrate the plunger and correlatively change the relation of the filings suspended in the magnetic field between the plunger and magnet, thus producing corresponding variations in the circuit or strength of the current flowing therethrough. These filings may be in the form of coarse powder; but I prefer to use them in the form of slivers or filings of a length three or four times greater than their width or thickness. Various metals suscepti-

ble to magnetic or inductive action—such as iron, steel, aluminium, cobalt, or nickel—may be used for such filings; but I prefer the last-named metal as being less liable to oxidation from moisture.

The instrument shown in Fig. 2 is similar to that shown in Fig. 1, with the exception that the diaphragm is rigidly secured to the casing and the plunger is sustained by an elastic support, D', (which may be either an arm or spring or a second diaphragm,) the buffer or spring *b* being interposed between the diaphragm and plunger instead of between the diaphragm and casing, as in the other instance.

In Fig. 3 another modification is shown similar to the apparatus shown in Fig. 1, with the exception that the conductors terminate in pointed poles, the filings being suspended between them.

A mixture of filings of dissimilar magnetic metals or of powder and filings of similar or dissimilar magnetic metals may be used instead of filings of homogeneous metal, if preferred. Electro-magnets may also be used, if desired.

I claim herein as of my own invention—

1. The combination, substantially as herein set forth, of a case, a magnet secured therein, a diaphragm, a conductor of electricity vibrating with the diaphragm, and magnetic filings in a loose state interposed in a magnetic field between the magnet and conductor.

2. The combination, substantially as herein set forth, of a telephone-case, a guideway therein, a magnet and diaphragm connected with the case, a conductor of electricity movable in the guideway and vibrating with the diaphragm, magnetic filings interposed in a magnetic field between the magnet and conductor, yielding connections supporting the conductor, and a spring or yielding connection interposed between the conductor and the diaphragm.

In testimony whereof I have hereunto subscribed my name this 22d day of October, A. D. 1880.

A. W. ROSE.

Witnesses:

W. L. CANDEE,
E. C. DAVIDSON.