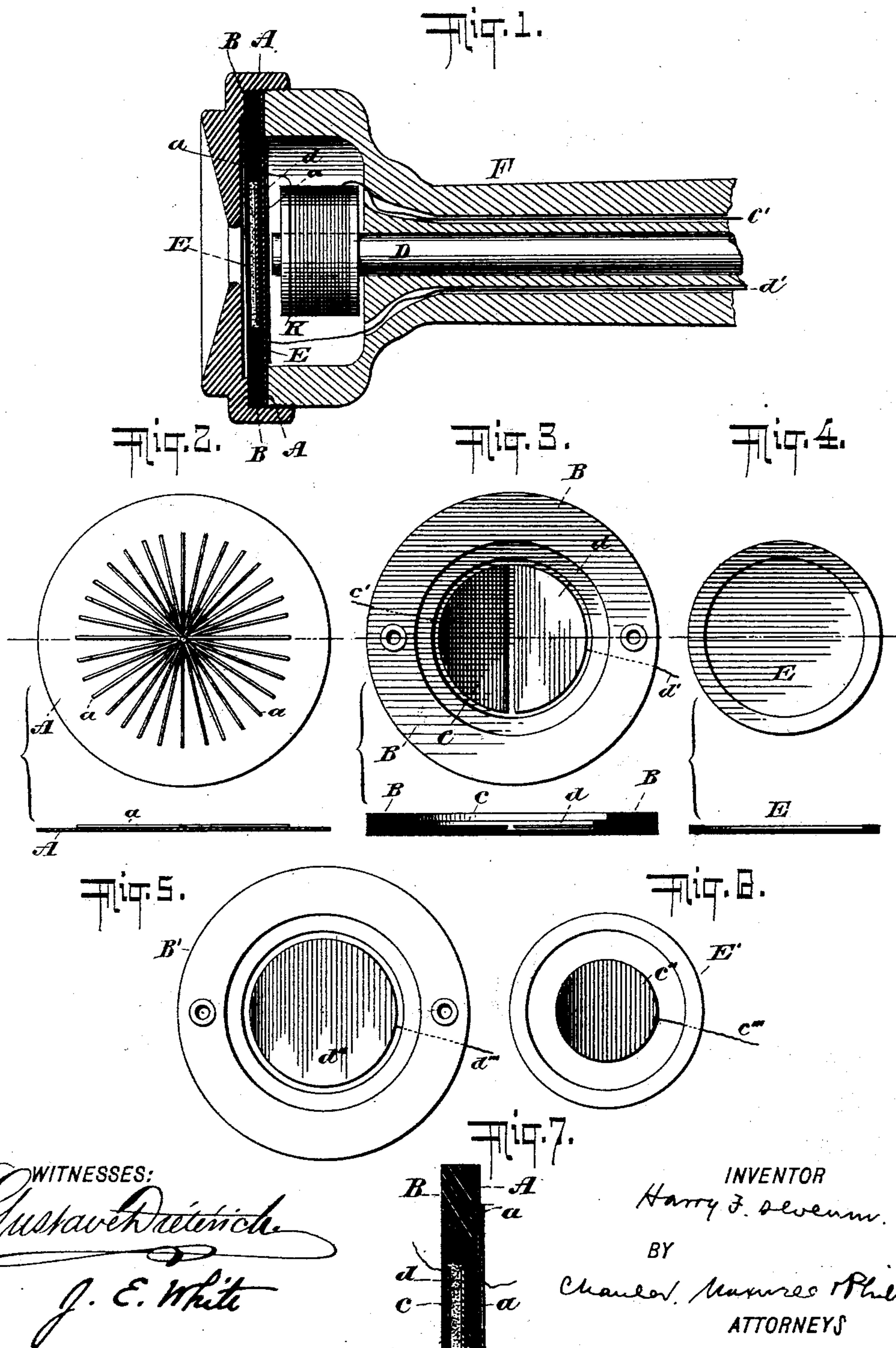


(No Model.)

H. F. SLOCUM.
TELEPHONE.

No. 520,086.

Patented May 22, 1894.



UNITED STATES PATENT OFFICE.

HARRY F. SLOCUM, OF NEW YORK, N. Y., ASSIGNOR TO THE NEW YORK ELECTRICAL AND DEVELOPMENT COMPANY, OF NEW JERSEY.

TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 520,086, dated May 22, 1894.

Application filed May 20, 1893. Serial No. 474,917. (No model.)

To all whom it may concern:

Be it known that I, HARRY F. SLOCUM, a citizen of the United States, residing at New York, in the city and county of New York, have invented certain new and useful Improvements in Telephones, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to telephones and its object is to produce a device whereby the strength of the operating current of electricity may be varied by the joint action of the induction coil and a voltaic battery.

To this end my invention consists in so combining a voltaic battery with the diaphragm of an ordinary magneto telephone that the vibration of the diaphragm will cause a stronger or weaker current to flow from the battery to the telephone circuit jointly with the changes of current produced in the usual way by the aid of the induction coil. I attain these results by the device illustrated in the accompanying drawings, in which similar letters of reference indicate similar parts throughout the various views.

Figure 1. is a sectional view in part of an ordinary transmitter with my device attached thereto. Fig. 2, is a front view of metallic part *a*, showing its manner of attachment to the diaphragm. Fig. 3, is a front view of diaphragm with cover removed showing arrangement of voltaic battery plates in recess therein. Fig. 4, is a rear view of recess cover. Figs. 5 and 6, show a modification of arrangement of battery plates in diaphragm. Fig. 7, is a sectional view in part of my entire device.

F is the frame of a transmitter of an ordinary telephone. B is the diaphragm thereof. Said diaphragm is provided with a metallic part *a* arranged to operate in the usual way with magnet D upon induction coil K. It is also provided with a recess, the walls of which are insulated from the metallic part *a*. Within said recess is a voltaic battery the plates *c* and *d* of which are electrically connected by wires *c'* and *d'* with coil K; and said recess is provided with a cover E which holds in position the deliquescent salt or other excitant of the battery. It will be understood that as the diaphragm B vibrates, the internal resistance of the battery will be increased

or diminished, causing the electric current flowing therefrom to coil K to vary; and as said vibrations also produce by means of the metal part *a* of diaphragm B electrical impulses or changes of current in induction coil K, the operative circuit of the telephone receives electric impulses by means of the vibrations of the diaphragm B from two sources simultaneously. Of course I do not limit myself to the construction shown, but I prefer to make the diaphragm B of vulcanite or hard rubber and to affix the metal piece *a* thereto by means of the plate A on which are radially disposed the metal strips *a*. The vulcanite thus forms a proper cell for and insulation of the battery from the metal piece *a*.

Other devices may be employed whereby the vibrations of the diaphragm may serve to increase and diminish the internal resistance of the battery without departing from my broad invention; but the device shown in the drawings whereby the curvature assumed by the diaphragm in its vibrations tends to produce this result is one of the features of this invention.

What I claim, and desire to secure by Letters Patent, is—

1. A diaphragm for the transmitter of a telephone consisting of a metal piece to operate with the magnet of said telephone in the usual way, and a voltaic battery, the elements of which are connected with the circuit of said telephone, arranged in said diaphragm so as to be actuated to produce a stronger or weaker current as said diaphragm vibrates, substantially as described.

2. A diaphragm for the transmitter of a magneto telephone having a voltaic battery, electrically connected with the telephone circuit, arranged within said diaphragm so that the internal resistance of said battery will be varied by the changes of form assumed by said diaphragm as it vibrates, substantially as described.

In witness whereof I affix my signature, in presence of two witnesses, this 19th day of May, 1893.

HARRY F. SLOCUM.

Witnesses:

E. S. BOGGS,

H. V. N. PHILIP.