

(No Model.)

H. E. WAITE.
TELEPHONE TRANSMITTER.

No. 312,409.

Patented Feb. 17, 1885.

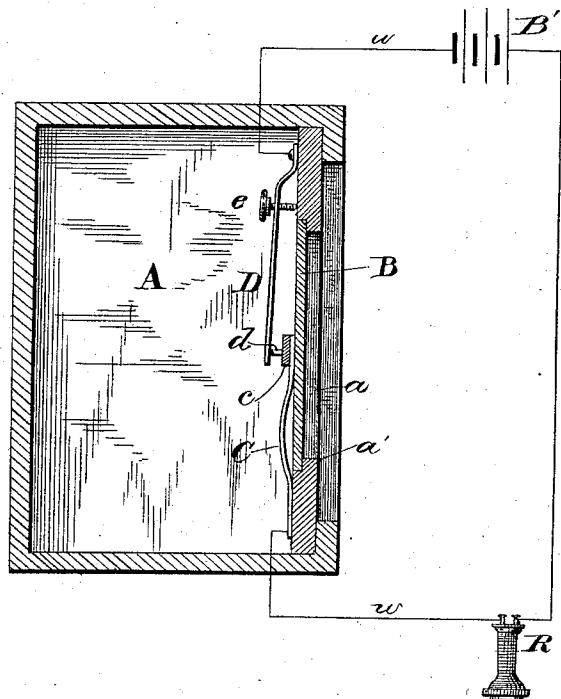


Fig. 1.

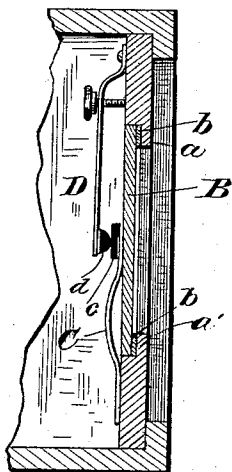


Fig. 2.

WITNESSES

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HENRY E. WAITE, OF NEW YORK, N. Y.

TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 312,409, dated February 17, 1885.

Application filed February 2, 1884. (No model.)

To all whom it may concern

Be it known that I, HENRY E. WAITE, of New York, county of New York, and State of New York, have invented a new and useful

Improvement in Telephone-Transmitters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to telephone transmitters, and has for its object to improve and simplify their construction and render their operation and regulation more perfect and simple; and my invention consists in a telephone and parts thereof constructed and arranged substantially as hereinafter specified.

In the accompanying drawings, forming part of this specification, Figure 1 is a vertical section through a transmitter embodying my improvements, with a diagram showing the arrangement of a circuit including a magneto-receiver. Fig. 2 is a similar view showing a modification in some of the details of construction.

My improvements are shown as applied to what is known as a "box transmitter," in which one side of the box has an opening forming the usual mouth-piece, and behind which opening the diaphragm is supported, the current-varying devices being behind the diaphragm and protected by the other sides of the box.

In the drawings, A represents such a box having an opening, *a*, in its front wall or side. In the drawings I have shown fitting behind this wall a plate, *a'*, also having an opening concentric with the opening in the front wall, A, and the diaphragm B is supported in a recess or ledge formed around this opening. This plate may be dispensed with and the diaphragm supported in the front wall in a similar manner. The diaphragm B is preferably made of a thin plate or disk of wood, bone, ivory, or other similar non-conducting material, and may be supported in the recess or ledge upon a cushion or ring, *b*, of rubber or cork, interposed between the ledge and diaphragm, as shown in Fig. 2.

Some means must be provided to hold the diaphragm in position on the ledge, and this

I accomplish by a spring, C, rigidly secured to the plate A' at one side of the opening, the other end of the bent spring preferably bearing upon the diaphragm at or near its center. The spring thus arranged not only holds the diaphragm in position, but acts as a damper to influence the vibrations of the diaphragm, and it may be further utilized to form a support for one of the electrodes. Thus in the drawings the electrode *c*, of carbon or similar material, is supported on the inner side of the free end of the spring C. The other electrode, *d*, which is of any desired material, as platinum or carbon, is supported upon a spring, D, one end of which is secured to the plate A outside of the diaphragm, and the spring being so formed as to tend to hold the electrodes out of contact. A screw, *e*, is provided which passes through the spring and is secured to the plate or frame, and is used to adjust and regulate the initial contact between the electrodes *c d*.

The diagram shown in Fig. 1 represents one way of connecting up my improved transmitter with a battery-circuit and magneto-receiver.

Various ways of attaching the carbon buttons or electrodes have been used, but I have found the following to be a very effective and simple way, and that electrodes so made and connected will wear a long time without deterioration and the electrical contact will be perfectly maintained.

The carbon button is first subjected to an electroplating bath and covered in whole or in part with a thin coating of copper or other similar material in a well-known way. If the entire button is plated, I remove the plating at the point of contact with the other electrode; or the plating may be applied to parts only of the button by stopping out such other parts, as is well known. The button is then secured to the supporting-spring by soldering, the electroplating forming a good connecting medium, both mechanically and electrically, whereby to join the metal spring and button.

What I claim is—

1. A telephone-transmitter consisting of a case having a front perforated plate provided with a recess or ledge, a diaphragm supported

in said recess, a spring-finger secured to said plate and holding the diaphragm in position and bearing upon its free end one of the electrodes, and an adjustable spring, also secured
5 to the plate and supporting the other electrode in contact with the first, substantially as described.

2. The combination, with a recessed plate,
of a diaphragm in said recess and a spring-
10 finger secured to said plate, one face of its

free end bearing upon and supporting and damping the diaphragm, and the other face carrying an electrode, substantially as described.

In testimony whereof I have hereunto set my 15
hand this 31st day of January, A. D. 1884.

HENRY E. WAITE.

Witnesses:

REX. M. SMITH,
GEO. K. RUNDEL.