

(No Model.)

T. BERDELL.
TELEPHONE.

No. 559,989.

Patented May 12, 1896.

Fig. 1.

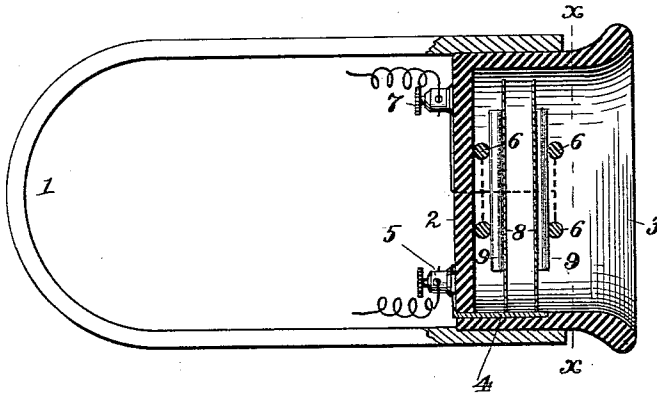
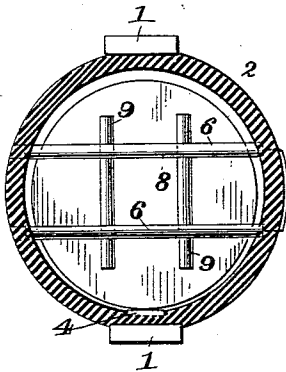


Fig. 2.



WITNESSES:

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THEODORE BERDELL, OF NEW YORK, N. Y.

TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 559,989, dated May 12, 1896.

Application filed June 19, 1895. Serial No. 553,270. (No model.)

To all whom it may concern:

Be it known that I, THEODORE BERDELL, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Telephones, of which the following is a specification.

My invention relates especially to transmitting-telephones, the present application being for an improvement upon the instrument shown and described in my application filed March 8, 1895, Serial No. 540,982, the instrument forming the subject-matter of this application having for its object the provision of a transmitting-telephone simple in construction, automatic in adjustment, and which will clearly and distinctly transmit articulate speech.

To attain the desired end, my invention consists, essentially, in the combination, with a magnet, of two diaphragms supported and held in place by magnetic action, but out of contact with the magnet. Said two diaphragms are so located as to be forced apart by the magnetic action, forming an interposed "magnetic cushion;" and my invention also involves certain other novel and useful combinations or arrangements of parts and peculiarities of construction and operation, all of which will be hereinafter first fully described, and then pointed out in the claims.

In the accompanying drawings, forming a part hereof, Figure 1 is a horizontal axial sectional view of my telephone-transmitter, and Fig. 2 is a cross-sectional view at line *xx* of Fig. 1.

Similar numerals of reference, wherever they occur, indicate corresponding parts in both figures.

1 is a magnet, preferably of the horseshoe form. 2 is a box constructed of any suitable insulating material, the outer portion constituting the mouthpiece 3. This box 2 is held between the poles of the magnet 1.

4 is a non-magnetic electrical conducting-plate connected to a binding-post 5.

6 are carbon rods fitting into the walls of the box 2, said rods being electrically connected to a binding-post 7.

8 8 are two diaphragms, shown in the drawings as each provided with carbon rods 9, secured thereto. I have shown these diaphragms as both loosely held in place between the poles of the magnet by magnetic force

alone and both diaphragms provided with 55 carbon contacts or rods; but if desired one of the diaphragms might be used without any contact-pieces or electrodes, or one of the said diaphragms might be rigidly fixed in position. However, the arrangement shown is believed 60 to be the most practical.

When constructed and arranged as above set forth and placed in position for use, my improved transmitter is found to be very effective, as it is practically self-adjusting and 65 when once in operation need not be again adjusted. The magnetic force maintains the electrodes in proper contact while permitting free response to sound-waves, and by using two diaphragms, the one located a short distance in front of the other, a magnetic cushion is provided, which serves to maintain the 70 proper contact of the electrodes, insuring a clear and distinct transmission.

Having now fully described my invention, 75 what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a telephone-transmitter, the combination with a magnet, of two independent diaphragms, loosely held in place and adjustment by magnetic force, but out of contact with the magnet, substantially as shown and described. 80

2. In a telephone-transmitter, the combination with a magnet, of two diaphragms located in close proximity to each other, but out of contact, and out of contact with the magnet, substantially as shown and described. 85

3. In a telephone-transmitter, the combination with a magnet, of a non-magnetic box, arranged as set forth, electrodes fixed in said box and two diaphragms located in said box and held in contact with said electrodes by magnetic force alone, substantially as shown 95 and described.

4. In a telephone-transmitter, the combination with a magnet, of two independent diaphragms, constituting like poles, located as set forth, thereby forming a magnetic cushion, substantially as shown and described. 100

Signed at New York, in the county of New York and State of New York, this 6th day of June, A. D. 1895.

THEODORE BERDELL.

Witnesses:

A. M. PIERCE,
E. D. WRIGHT.