

(No Model.)

T. BERDELL.
TELEPHONE.

No. 559,990.

Patented May 12, 1896.

Fig. 1.

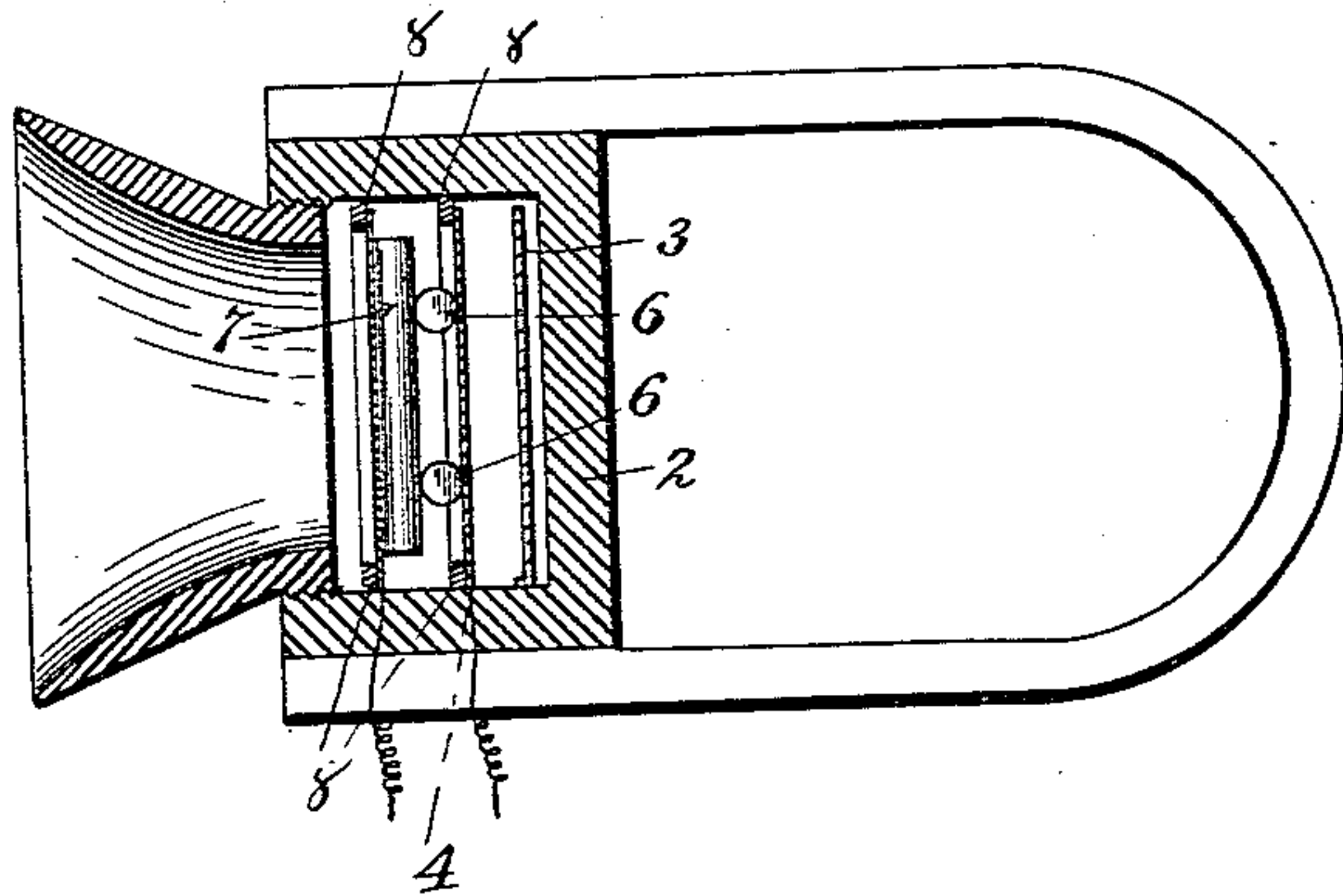
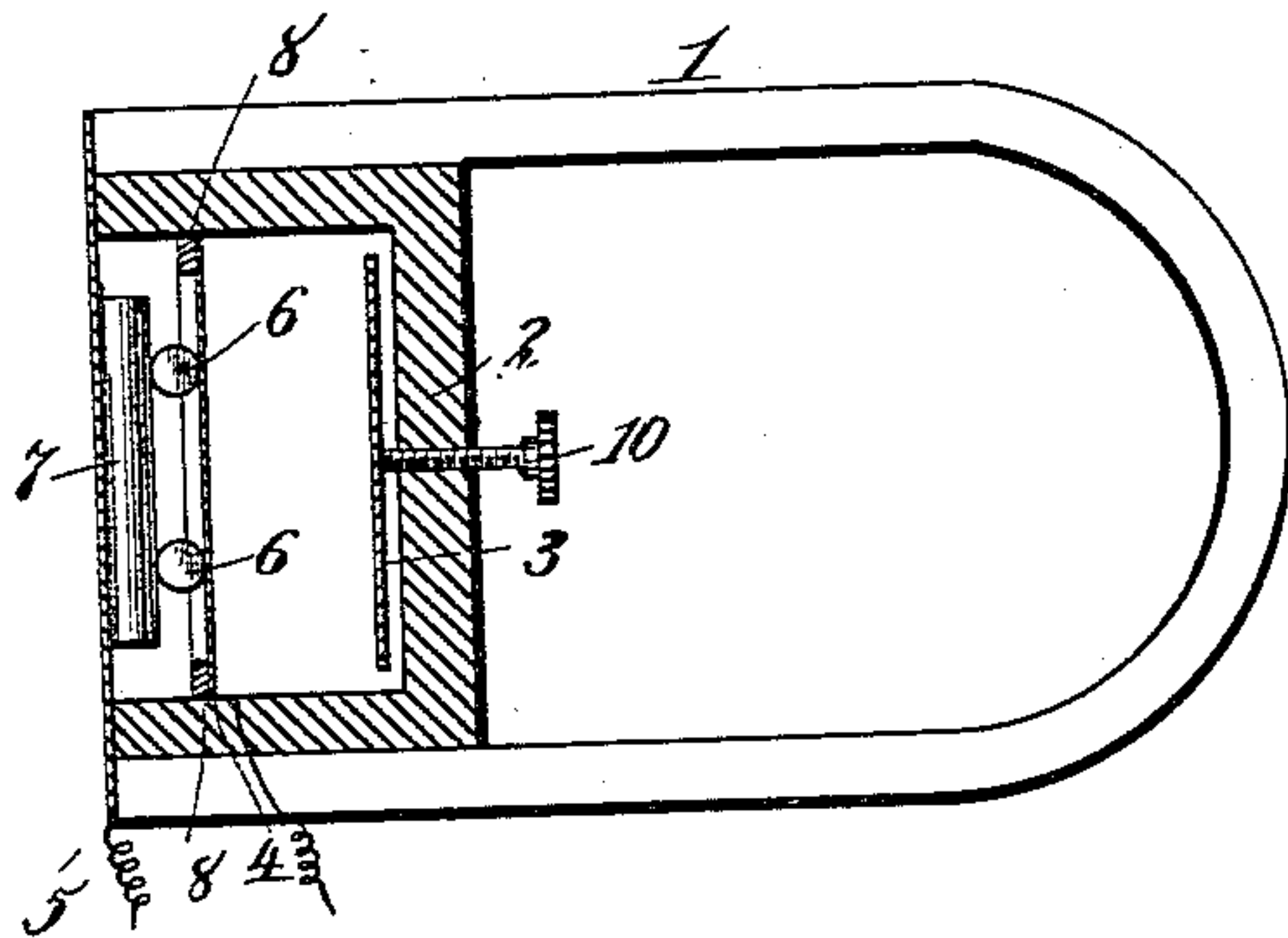


Fig. 2.



WITNESSES:

Edward C. Rowland
Beatrice M. Ronaldson

INVENTOR

Theodore Berdell

BY

A. M. Pierce

ATTORNEY

UNITED STATES PATENT OFFICE.

THEODORE BERDELL, OF NEW YORK, N. Y.

TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 559,990, dated May 12, 1896.

Application filed December 7, 1895. Serial No. 571,367. (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, and has for its object the provision of a simple and effective transmitter of great power and volume not liable to get out of adjustment or be influenced by changes of temperature, &c.

To attain the desired end, my invention consists, essentially, in certain 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 drawings forming a part hereof, Figure 1 is a vertical axial sectional view of a telephone embodying my invention. Fig. 2 is a modification of the construction illustrated in Fig. 1.

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

1 is a permanent magnet, preferably of horseshoe form.

2 is a box or case of non-magnetic material.

3 is an iron disk, either placed loosely in the box or secured or attached thereto.

4 is a diaphragm of magnetic material swinging loosely in the lines of force between the poles of the magnet, being held out of contact therewith by the inclosing case 2.

6 are electrodes, such as carbon pencils, attached to the diaphragm 4.

5 is a second diaphragm, constructed and arranged the same as diaphragm 4 and bearing electrodes 7, which are in contact with the electrodes 6.

8 are non-metallic or hard-rubber rings fitting snugly into the box or case 2, the positions in which they are placed regulating the position of the diaphragms 4 and 5. As both these diaphragms and the disk 3 are magnet-

ized with like polarity, they repel each other, thus forming what I term a "magnetic cushion" or "spring." If the inner one of the rings 8 be pushed toward the disk 3, a stronger cushion or spring is formed, and if withdrawn therefrom a lighter. In the construction shown in Fig. 2 the disk 3 is provided with an adjusting-screw 10, by which this cushion or spring may be regulated, and in the same figure the diaphragm 5 is placed outside of the case 2 in front of the poles of the magnet 1.

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

1. A telephone in which is comprised a magnet; a non-magnetic box or case between the poles of the magnet; a magnetic plate at the rear of the box; two swinging diaphragms located in front of said plate, and means of limiting the movement of the diaphragms, substantially as shown and described.

2. In a telephone of the character herein specified, two swinging diaphragms supported within a case of non-magnetic material between the poles of a magnet, in combination with adjustable regulating-rings arranged, substantially as shown and described.

3. In a telephone of the character herein specified, the combination with a swinging diaphragm located in a box or case of non-magnetic material between the poles of a magnet, of an adjustable regulating-ring, substantially as shown and described.

4. In a telephone of the character herein specified, the combination with a swinging diaphragm located in a non-magnetic case as set forth, of a magnetic plate mounted at the rear of the diaphragm, substantially as shown and described.

Signed at New York, in the county of New York and State of New York, this 1st day of October, A. D. 1895.

THEODORE BERDELL.

Witnesses:

A. M. PIERCE,

BEATRICE M. DONALDSON.