

No. 758,363.

PATENTED APR. 26, 1904.

M. R. HUTCHISON.
TELEPHONE RECEIVER.
APPLICATION FILED NOV. 25, 1902.

NO MODEL.

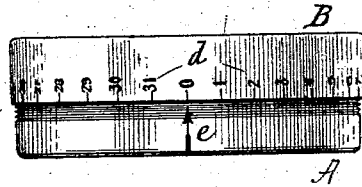


Fig. 1.

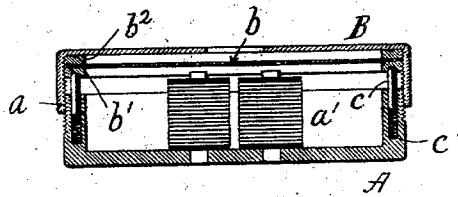


Fig. 2.

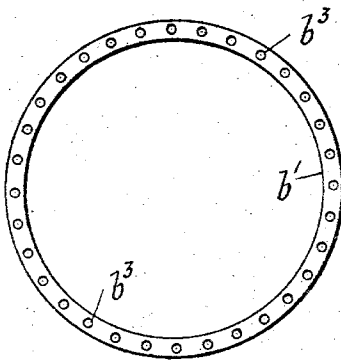


Fig. 3.

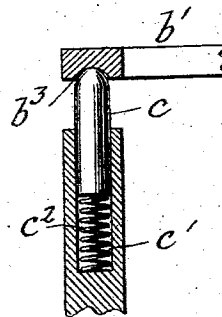


Fig. 4.

Witnesses
Frank S. Ober
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By his Attorney M. Rosenbaum

UNITED STATES PATENT OFFICE.

MILLER REESE HUTCHISON, OF NORWOOD, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HUTCHISON ACOUSTIC COMPANY, A CORPORATION OF NEW YORK.

TELEPHONE-RECEIVER.

SPECIFICATION forming part of Letters Patent No. 758,363, dated April 26, 1904.

Application filed November 25, 1902. Serial No. 132,715. (No model.)

To all whom it may concern:

Be it known that I, MILLER REESE HUTCHISON, a citizen of the United States, residing at Norwood, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Telephone-Receivers, of which the following is a full, clear, and exact description.

This invention relates to telephonic apparatus in which a vibratile diaphragm is used, and has special reference to telephonic receivers wherein the diaphragm is vibrated by pulsations of current traversing an electromagnet or magnets whose poles are presented to the diaphragm.

The object of the invention is to provide means whereby any person can adjust the distance between the diaphragm and the pole-pieces of the magnet for the purpose of tempering or proportioning the intensity of the sound and the distinctness of the speech to the sensitiveness of the ear, the idea being more especially to furnish instruments for the use of deaf persons which can be readily and finely adjusted and any particular degree of adjustment maintained or if lost again easily found. For this purpose my invention consists of a telephone-receiver whose casing is in two parts, one forming the body, in which the magnet or magnets are located, and the other a cover, in which the diaphragm is located. These two parts screw together, and the distance between the diaphragm and magnet-poles is determined by the extent to which the cover is screwed over the body of the case. On the cover and case are placed a scale and index, and certain detents are embodied in the construction which tend to lock the case and cover against rotary movement on the points of the scale. The scale may cover the entire periphery of the instrument or only a fraction thereof; but its extent will be sufficient to obtain any adjustment between a required minimum and maximum after the parts have been screwed together to the point of the average adjustment used.

Further details will be explained with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved

telephone-receiver. Fig. 2 is a section thereof. Fig. 3 is a plan of one of the ring-nuts that confine the diaphragm, and Fig. 4 is an enlarged detail of the locking-bolt.

A is the case or body of a telephone-receiver, and B the cover thereof and adapted to be connected thereto by means of the screw-threads *a*. Fixed in the center of the case is an electromagnet *a'*, whose poles are presented outward. The cover has an opening at the center for the emission of sound and carries a diaphragm *b*, which is held between two clamping rings or nuts *b'* and *b''*, screwed in on a continuation of the thread *a* in the cover. The outer ring *b'* contains a number of shallow sockets *b'''* equally spaced all around, and facing these are a number of round-headed bolts or pins *c*, set into sockets *c'* in the rim of the case and resting upon springs *c''*. There may be any number of these bolts, from one up to the number of the sockets *b'''*; but they are so placed that all of them will enter a socket when any one does. These bolts and sockets afford a lock to prevent relative rotation of the case and cover except by design, a little force being necessary to overcome the frictional engagement of the bolts and sockets.

The periphery of the case is divided into thirty-two or any other desired number of equal parts and a figure or other identifying character applied to each division-mark, as seen at *d* in Fig. 1. On the outside of the case an index *e* is provided to point to the division-marks of the scale.

When the instrument is assembled for use, the cover is screwed down to a point where a half-rotation or less in either direction will position the diaphragm most advantageously for any condition of use. Then by testing the instrument at the ear and moving the cover from point to point in either direction a position is soon found where the sounds or speech are most distinct and comfortable to the listener. The instrument is then in adjustment for that particular person and will remain in adjustment by reason of the locking-bolts unless thrown out by accident, carelessness, or tampering. The user of the instrument will, however, be able to make note

of the division-mark on the scale to which the index points when the instrument is properly adjusted, and therefore can turn it to that point at once in case it has been moved and without the necessity of testing.

Having described my invention, I claim—

In a telephone-receiver, the combination of a casing in two parts connected together by a screw-thread, a magnet in one part and a diaphragm in the other, a scale on the outside of one part and an index on the other whereby the distance between the pole or poles of the mag-

net and the diaphragm can be determined by the position of the index with respect to the scale, and automatically-acting detents whereby the two parts are held at any point of the scale to which they may be adjusted. 15

In witness whereof I subscribe my signature in presence of two witnesses.

MILLER REESE HUTCHISON.

Witnesses:

FRANK S. OBER,
WALDO M. CHAPIN.