J. DIXON.

TELEPHONE RECEIVER.

APPLICATION FILED NOV. 23, 1908.

915,079. Patented Mar. 16, 1909.

Fig. 1.

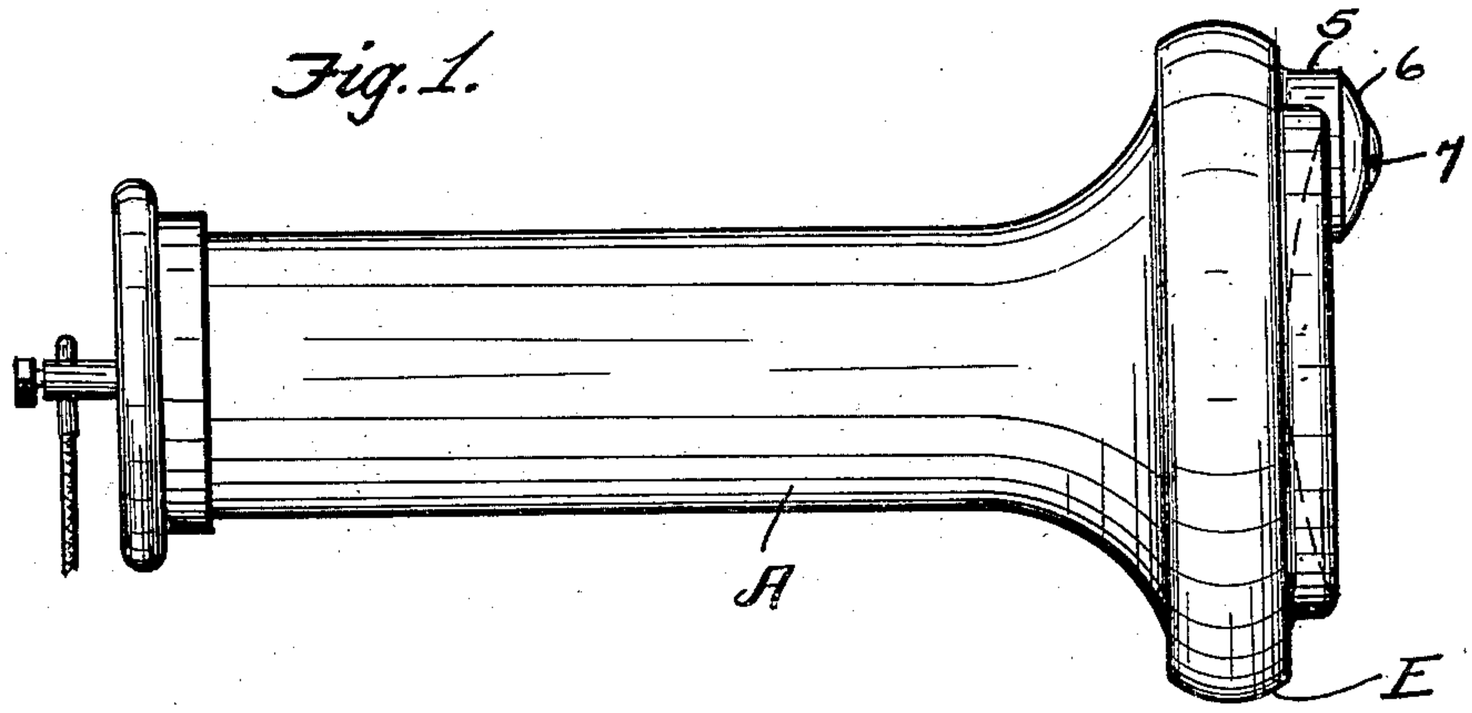


Fig. 2.

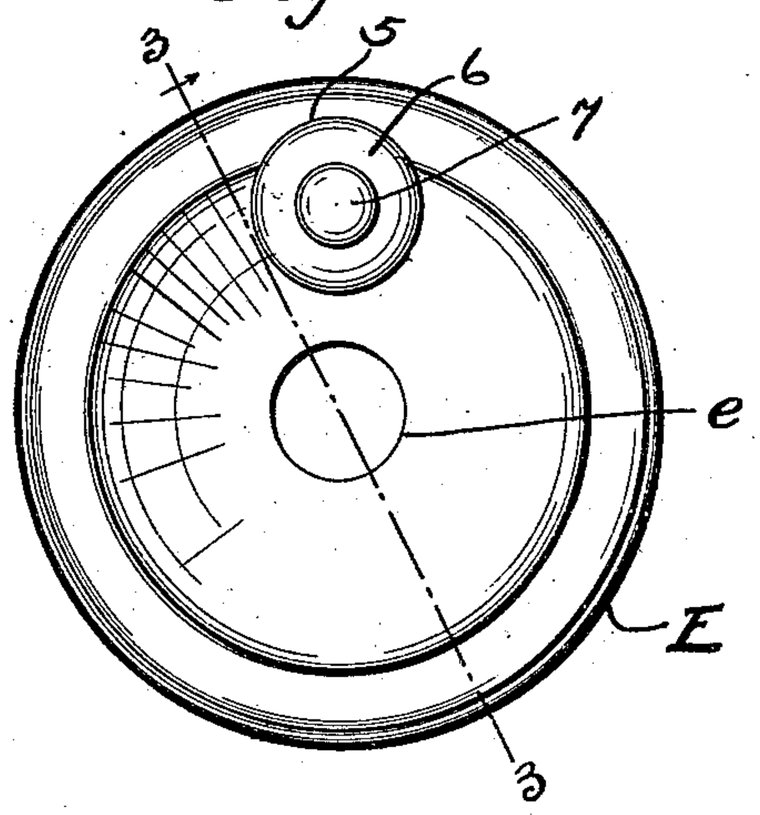
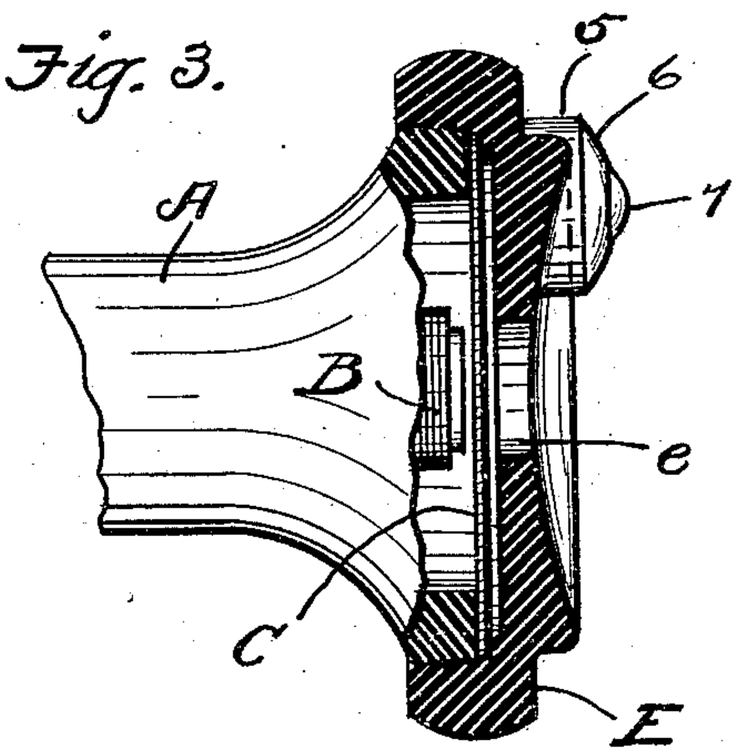


Fig. 3.



Witnesses:
H. J. Gettins.
B. L. Brown.

Inventor:
James Dixon

By Spencer & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

JAMES DIXON, OF CLEVELAND, OHIO.

TELEPHONE-RECEIVER.

No. 915,079. Specification of Letters Patent. Patented March 16, 1909.

Application filed November 23, 1908. Serial No. 464,172.

To all whom it may concern:

Be it known that I, JAMES DIXON, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Telephone-Receivers; and I hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to improvements in telephone-receivers.

The primary object of this invention is to provide a telephone-receiver which is not only suitable for use with an unimpaired organ of hearing but also equally suitable for use by a person who has the said organ detrimentally impaired but still possesses auditory nerves capable of being satisfactorily excited.

My invention consists more especially in a telephone-receiver having its cap not only provided with the usual central opening through which the sound waves flow from the vibratory diaphragm of the telephone-receiver into the outer ear of the organ of hearing, but also is provided at one side of and a suitable distance from the said opening with a lug which is vibratorily affected by the vibration of the diaphragm C and projects outwardly beyond the remainder of the face of the cap and is arranged wholly at the said side of the opening and in position to be pressed against the bony structure adjacent the outer ear of the organ and more especially against the bony structure located forward of the said ear and in suitable proximity to the helix or the tragus of the said ear so that the vibrations of the said lug when the lug is pressed against the said bony structure result through the medium of bony conduction in suitably exciting the auditory nerve for the said organ, and so that a person dull of hearing without the use of artificial means and not capable of receiving a message from the flow of sound-waves through the central opening in the cap of the receiver can nevertheless receive the said message by the said excitement of the auditory nerve in the manner stated.

In the accompanying drawings, Figure 1 is a side view of a telephone-receiver embodying my invention. Fig. 2 is an end-view of the receiver, looking at the face of the cap of the receiver, and Fig. 3 is a section on line 3—3, Fig. 2, looking in the direction indicated by the arrow.

Referring to the drawings, A indicates the casing of my improved telephone-receiver, and B represents the electro-magnet contained within the said casing.

C represents the vibratory diaphragm suitably placed relative to the electro-magnet B, and E indicates the cap of the receiver, which cap is suitably attached to the casing A and engages the diaphragm C and holds the latter in place relative to the casing. The cap E is provided with the usual central opening *e* through which sound-waves flow from the diaphragm during the operation of the telephone.

The new feature possessed by my improved telephone-receiver is a lug 5 formed on the face of the cap E at one side of and a suitable distance from the central opening *e* in the cap, which lug is arranged wholly at the said side of the opening and receives vibratory motion during the vibration of the diaphragm C. The lug 5 is preferably circular and has its outer portion gradually reduced transversely, as at 6, toward the outer extremity of the lug, and centrally of its outer end is provided with a circular convex portion 7. It will be observed that my improved telephone-receiver can readily be so held relative to the organ of hearing to which the telephone-receiver is to be applied as to cause the convex central portion 7 of the outer end of the lug 5 to bear against the bony structure located forward of the outer ear of the organ and during the vibration of the said lug to result in satisfactorily exciting the auditory nerve by bony conduction as hereinbefore stated, and by thus applying my improved telephone-receiver any person whose natural hearing is impaired, but still has auditory nerves which are capable of being satisfactorily excited, can receive a telephone message approximately as well as a person having unimpaired natural hearing.

What I claim is:—

1. A telephone-receiver having the usual opening therein for delivering sound-waves and provided at one side of and a suitable distance from the said opening with a lug arranged wholly at the said side of the opening and in position to be pressed against the bony structure of the head of a person in suitable proximity to the outer ear of the organ of hearing to which the telephone-receiver is to be applied.

2. A telephone-receiver having the usual opening therein for delivering sound-waves and provided at one side of and a suitable distance from the said opening with a lug arranged to be pressed against the bony structure of the head of a person in suitable proximity to the outer ear of the organ of hearing to which the telephone-receiver is to be applied, said lug having its outer portion gradually reduced in size transversely toward the outer extremity of the lug.

3. A telephone-receiver having the usual opening therein for delivering sound-waves and provided at one side of and a suitable distance from the said opening with a lug arranged wholly at the said side of the opening, which lug is provided centrally of its outer end with a projecting convex portion arranged to be pressed against the bony structure of the head of a person in suitable proximity to the outer ear of the organ of hearing to which the telephone-receiver is to be applied.

4. A telephone-receiver having the usual opening therein for delivering sound-waves and provided at one side of and a suitable distance from the said opening with a circular lug arranged wholly at the said side of the opening and provided centrally of its outer end with a projecting circular convex portion arranged to be pressed against the bony structure of the head of a person in suitable proximity to the outer ear of the organ of hearing to which the telephone-receiver is to be applied.

5. A telephone-receiver to be applied to the organ of hearing of a person and having the usual opening therein for delivering sound waves into the outer ear of the said organ, said telephone-receiver being provided at one side of and a suitable distance from the said opening with a lug which is arranged wholly at the said side of the opening and in position to be pressed against the bony structure forward of the said ear.

6. A telephone-receiver to be applied to the organ of hearing of a person and having a cap provided with the usual opening therein for delivering sound-waves into the outer ear of the said organ, said cap being provided at one side of and a suitable distance from the said opening with a lug which is arranged wholly at the said side of the opening and in position to be pressed against the bony structure in suitable proximity to the said organ.

7. A telephone-receiver to be applied to the organ of hearing of a person and having a cap provided with the usual opening therein for delivering sound-waves into the outer ear of the said organ, said cap being provided at one side of and a suitable distance from the said opening with a lug which is arranged to be pressed against the bony structure of the head of the said person at a point forward of the aforesaid ear.

In testimony whereof, I sign the foregoing specification, in the presence of two witnesses.

JAMES DIXON.

Witnesses:
C. H. DORER,
VICTOR C. LYNCH.