(No Model.) 2 Sheets—Sheet 1.

A. E. MILTIMORE.

MAGNETO TELEPHONE FOR PERSONAL WEAR.

No. 466,725. Patented Jan. 5, 1892.

FIG. 1.

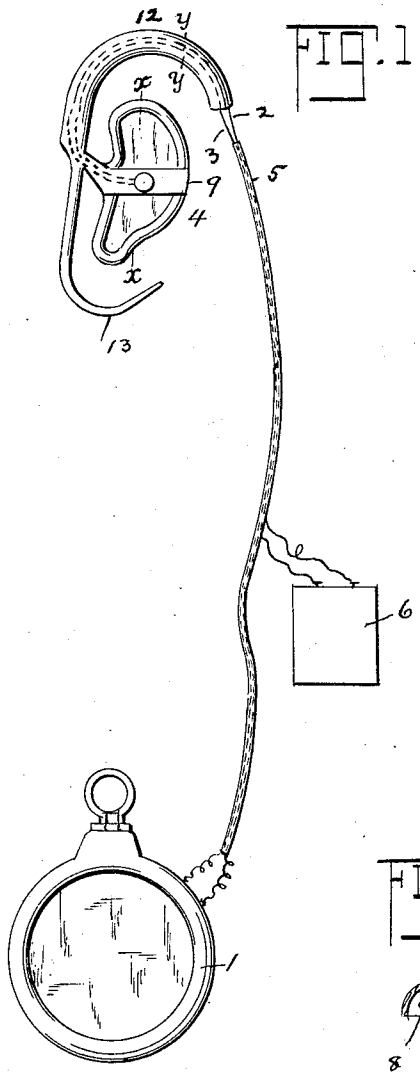


FIG. 2.

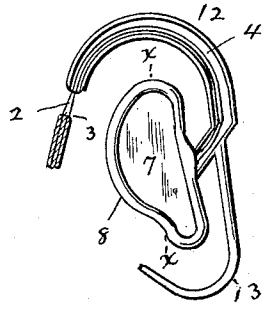


FIG. 3.

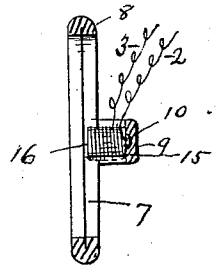
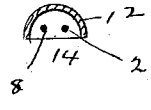


FIG. 4.



WITNESSES:

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(No Model.) 2 Sheets—Sheet 2.

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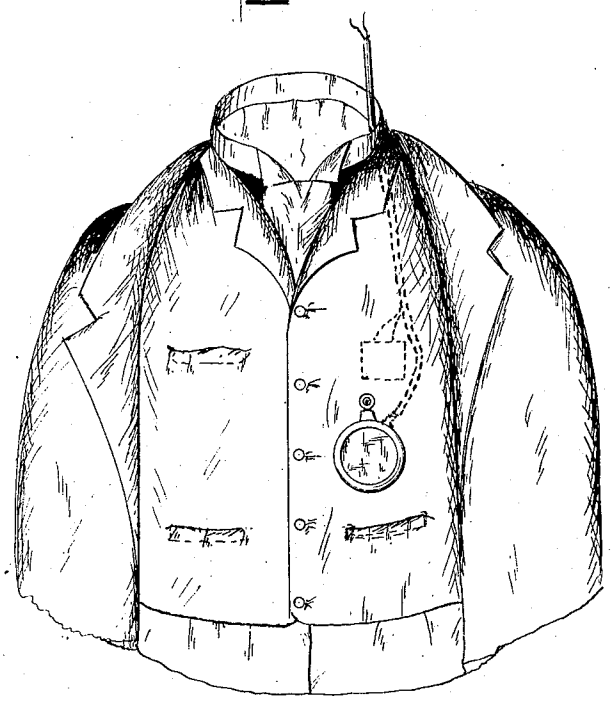
FIG. 5.



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UNITED STATES PATENT OFFICE.

ALONZO E. MILTIMORE, OF CATSKILL, NEW YORK, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO GEORGE G. SCHROEDER AND FRANK PALMER, OF WASHINGTON, DISTRICT OF COLUMBIA.

MAGNETO-TELEPHONE FOR PERSONAL WEAR.

SPECIFICATION forming part of Letters Patent No. 466,725, dated January 5, 1892.

Application filed February 24, 1891. Serial No. 382,460. (No model.)

To all whom it may concern:

Be it known that I, ALONZO E. MILTIMORE, a citizen of the United States, residing at Catskill, in the county of Greene and State of New York, have invented certain new and useful Improvements in Electric Audiphones; and I do 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 appertains to make and use the same.

My invention relates to an improvement in electric audiphones; and it consists of a telephonic transmitting-instrument carried in a suitable location upon the body and having a diaphragm presenting a large area to the action of the sound-waves, and of a telephonic receiving-instrument located at the mouth of the middle ear, receiving the electrical pulsations produced by the first-named instrument, and having a diaphragm of smaller size, whereby the sound-waves caused thereby have a small radiating center; and it also consists in the construction, arrangement, and combination of the parts of which it is composed, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, in which corresponding parts are designated by corresponding figures, Figure 1 is a side view of my complete apparatus. Fig. 2 is an inner side view of the receiver. Fig. 3 is a vertical section of lines *x x* of Figs. 1 and 2. Fig. 4 is a section of line *y y* of Figs. 1 and 2. Fig. 5 is a view having the transmitter and wires in place.

The transmitting-instrument 1 is by preference made in imitation of a badge or other ornament, and is of any approved mechanical construction, it being adapted to be carried on the body of the person who may need my invention, such as upon the breast, outside of the clothing; or it may be concealed by a layer of fabric similar to or the same as the clothing, as I have found that such a layer has little or no effect upon the transmission of sound-waves therethrough. The positive and negative wires 2 and 3 from such by preference lead up under the clothing to the receiving-instrument 4 placed within the ear, said wires being suitably insulated and wrapped in a single cord 5, one of them being broken and having its contiguous ends at such break connected to the opposite poles of a battery 6, which is sealed and of a suitable construction to permit its being carried in one of the pockets; or it may be placed in the casing of the transmitting-instrument.

The receiver 4 consists of a diaphragm 7, of approximately the same shape as the mouth of the middle ear, but slightly smaller, and has its edges contained within the beading 8. A bar 9, having a trough 10 on its inner face, is secured to the beading 8 at two opposite points, and has its front end projecting forward and upward in such a manner as to project in front of the ear, and is connected with the spring clamps or arms 12 13, adapted to surround the ear and hold the receiver in place. The upper 12 of these clamps has a trough 14 in its inner face, in which the wires 2 and 3 are contained, the said wires arising from underneath the clothes behind the ear and being led through the said trough and the corresponding trough 10 in the bar 9 to the central portion of the latter, where the ends of the said wires are connected to the opposite ends of the coil 15 which surrounds the magnet 16, the latter being supported by the bar 9 and having its pole close to the central portion of the diaphragm 7.

It will thus be seen that as the diaphragm of the transmitter has a large area, relatively speaking, while the diaphragm 7 has a small one, the total energy of the sound-waves striking the former will be given off from the comparatively smaller surface of the latter, which is contained within the ear, augmenting the sound and giving it greater force to affect the tympanums. It will also be seen that a receiving-telephone may be placed in each ear and connected with a single transmitter, as the electric current may be divided, and that the action of the magnet of the receiver and the electric field surrounding it will have a remedial effect upon the ear.

Having thus described my invention, what I claim is—

In an audiphone, a telephonic receiving-instrument consisting of a diaphragm of ap-

proximately the same shape as the mouth of the middle ear, a beading surrounding the said diaphragm, a bar mounted on the said beading and projecting forward from the forward edge of the said diaphragm and having a trough in its inner face, spring-clips adapted to engage the ear and connected to the forward end of the said bar, one of the said clips having a trough in its inner face communicating with the trough within the bar, an electro-magnet carried by the said bar over the center of the said diaphragm, and wires within the troughs in the said clip and bar connected to the coil of the said magnet, as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALONZO E. MILTIMORE.

Witnesses:
WM. A. EASTERDAY,
L. V. BEALE.