

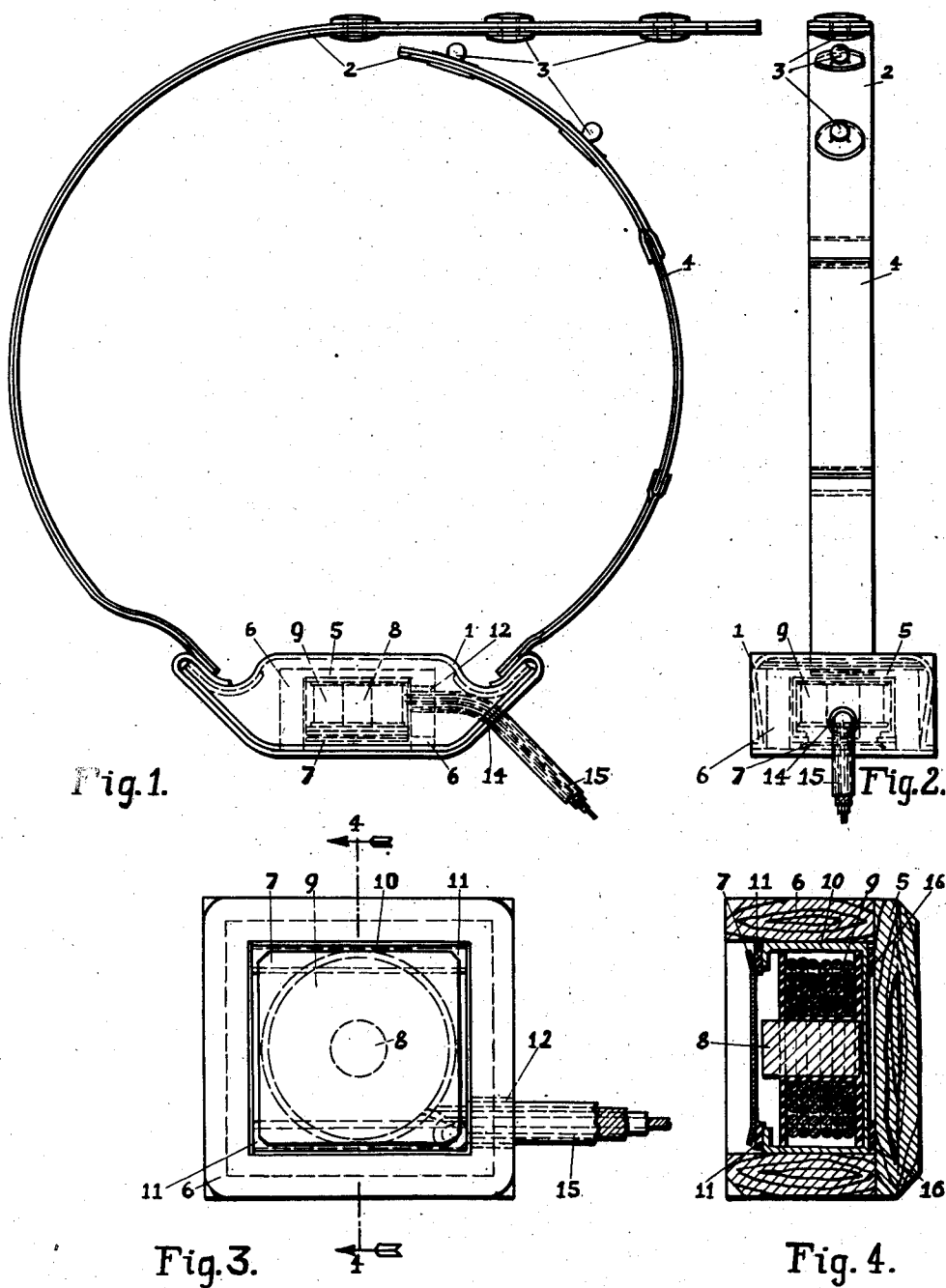
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THROAT MICROPHONE

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THROAT MICROPHONE

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1 Claim. (Cl. 179—157)

My invention relates to improvements in microphones and more specifically to a new and improved throat microphone for use in aircraft, submarines, military tanks and defense plants and in all other places which are very noisy.

The use of a throat microphone, for instance, is of particular advantage for a pilot who while flying in a plane must report what he sees and hears. Prior to the introduction of throat microphones, a pilot had to write his messages and the like down, and due to atmospheric conditions, vibrations, abrupt movement of the plane, resulting from air pockets, air sickness, etc., the pilot's hand becomes more or less unsteady so that he frequently could hardly read his own writing when on the ground. A throat microphone, however, enables a pilot to transmit his messages immediately over the existing radio equipment in the plane to a receiver or recorder on the ground. Moreover, a pilot using a throat microphone has both hands free for operating the plane.

Throat microphones hitherto in use were of the carbon type and had various disadvantages which prevented them from being used extensively; among these disadvantages, was the difficulty of eliminating disturbing noise, unreliable working particularly at low temperature in high altitudes, the necessity of frequent repairs and replacement of parts, and the like.

One of the objects of the present invention is, therefore, the provision of a throat microphone which is adapted to be placed around the neck over the larynx and to pick up words spoken by the wearer which may be amplified and transmitted through a public address system.

Another object of the present invention is the provision of a throat microphone which eliminates all outside noise so that no matter how much noise there may be in a plant none of the noise will be transmitted through the throat microphone, and the speaker need only use an ordinary tone of voice thereby doing away with the necessity of shouting or straining the voice.

Still another object of the present invention is the provision of a throat microphone which can be used with any standard amplifier designed to use a crystal or other high impedance microphone.

A further object of the present invention is the provision of a throat microphone which safely transmits even the mildest tone with unusual clarity so that a code system may be developed whereby tapping with the fingers may be used instead of spoken words in case the user

or the microphone is unable to speak due to injury or for any other reason.

A still further object of the present invention is the provision of a throat microphone which is light in weight, simple in construction so that it can be manufactured at a very reasonable price, but which is well adapted to withstand the rough usage to which such devices are frequently subjected.

Further objects of the instant invention reside in any novel feature of construction or operation or novel combination of parts present in the embodiment of the invention described and shown in the accompanying drawing whether within or without the scope of the appended claim and irrespective of other specific statements as to the scope of the invention contained herein.

In the drawing:

Figure 1 is a plan view of a preferred embodiment of the invention;

Fig. 2 is a side elevation;

Fig. 3 is a front elevation view of a detail of the embodiment shown in Figs. 1 and 2, drawn on an enlarged scale; and

Fig. 4 is a sectional view on the lines 4—4 of Fig. 3.

Similar numerals refer to similar parts throughout the several views.

Microphone and sound box which will be described hereinafter are contained within a small bag or pouch 1 of leather or any other suitable material carried on a neckband 2, the width of which can be adjusted by means of several press buttons 3 and which is preferably provided with an elastic portion 4 such as a rubber band or the like. The microphone itself, which is preferably based on the inductor-dynamic principle, is placed into a sound box of wood or of any other suitable material. The sound box which is preferably rectangular in shape and has rounded corners and edges at its outer side, consists of a bottom portion 5 and of side portions 6 and is open at its top as may be seen in Fig. 4. The microphone is placed into the sound box in such a manner that the diaphragm 7 is adjacent to the open top portion of the sound box, and the sound box in turn is placed into the pouch 1 in such a manner that the bottom 5 is adjacent to the larynx of the person wearing the throat microphone. By means of this arrangement, which constitutes an important feature of my invention, the vibrations of the sound emanating from the larynx are transmitted directly to the bottom 5 of the sound box and from there to the side portions 6; thus the sound box, which acts as a

resonance chamber, eliminates all outside noise as previously referred to.

Whereas the construction of microphones of the inductor-dynamic type per se is no part of my present invention, I discovered that best results can be attained by placing the magnet 8 and the coil 9 in a U-shaped piece of metal 10, the flanges of which carry the diaphragm 7. I prefer also to make the diaphragm slightly curved as illustrated in Fig. 4, and to secure pieces 11 of resilient material, preferably of rubber to the flanges of the U-shaped piece 10 so that the diaphragm 7 rests against these resilient pieces 11, which then act as cushions for the diaphragm 7. If the microphone is constructed in the manner previously described, the web of the U-shaped piece 10 rests either directly against the bottom 5 of the sound box or against additional resilient (rubber) pieces 16, which may be inserted between the bottom 5 and the U-shaped piece 10 as shown in Fig. 4. One of the side portions 6 of the sound box is provided with an aperture 12, and the pouch 1 is provided with an aperture 14 (Figs. 1 and 2) which registers with the aperture 12. Flexible insulated wires 15 adapted to connect the microphone to an amplifier are extended through the apertures 12 and 14.

While there has been shown and described and pointed out the fundamental novel features of

the invention as applied to a single modification, it will be understood that various omissions and substitutions and changes in the form and details of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention. It is the intention, therefore, to be limited only as indicated by the scope of the following claim.

Having thus described my invention, what I claim and desire to secure by Letters Patent in the United States is:

A throat microphone comprising a rectangular sound box having an open side and having rounded outer corner portions, a U-shaped piece of metal mounted within said sound box in such a manner that its web rests against pieces of resilient material at the bottom of said sound box, an electromagnet arranged within said U-shaped piece and provided with a pole piece directed toward the open side of said casing, a slightly curved diaphragm adjacent said pole piece and supported across said U-shaped piece by resilient material which is carried by the flanges of said U-shaped piece, and means for attaching said sound box to the throat of a person in such a manner that his larynx is adjacent to the bottom of said sound box, all substantially as set forth.

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