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DIAPHRAGM FOR TELEPHONE RECEIVERS

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FIG. 1



FIG. 2

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DIAPHRAGM FOR TELEPHONE RECEIVERS.

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This invention relates generally to diaphragms such as are used in telephone receivers.

As is known, the reproduction of the voice, or of sounds generally, in the telephone receiver is due to the vibration of a thin sheet or disk of iron which is placed adjacent the two ends of the usual horseshoe magnet, the disk being secured at its edges only so that it may be free to vibrate. The strength of the sound produced depends on the strength of the magnetic field around the poles of the magnet, the stronger the magnetic field the stronger the sound, and it is the purpose of the present invention to provide a construction which presents a magnetic field of increased strength, and which will better utilize the strength of the magnet. To strengthen the magnetic field it is necessary to put a larger mass of magnetic material such as iron opposite the poles of the magnet, and to do this I make use of a diaphragm presenting an increased amount of material at its centre, to produce a magnetic field of increased strength while at the same time preserving the essential flexibility of the diaphragm on the outer or marginal portion thereof.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claim in which the various features of the invention are more particularly set forth.

Figs. 1 and 2 of the drawing are axial sectional views showing various embodiments of my improved diaphragm.

In the form of the invention shown in Fig. 1 of the drawing the drawing comprises a thin disk 10 of suitable material such as iron which is of greater thickness adjacent the centre thereof than at the edge, this feature, broadly considered, being common to each form of diaphragm shown in the various views. In the form shown in Fig. 1 the diaphragm is flat on one face,

while the other face presents a general bevel from the centre toward the edge, the diaphragm thus decreasing in thickness from the centre to the edge, the diaphragm being comparatively thick at the centre, that is to say of a thickness greater than on the outside. As shown, the outer portion 10' of the diaphragm has a smaller inclination than the inner portion, 10^a the diaphragm thus increasing rapidly in thickness toward the centre thereof.

The diaphragm 14 shown in Fig. 2 of the drawing is of a shape in axial section corresponding to two of the disks 10 with their flat faces in contact, this disk being comparatively thick at the centre and beveled off rapidly toward the edge.

While I have shown the thickness of my improved telephone receiving diaphragms enlarged and described a preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed, and the right is reserved to all changes and modification coming within the scope of the invention as defined in the appended claim.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent of the United States is as follows:—

In combination with the horseshoe magnets of telephone receivers, a diaphragm comprising a one-piece thin metal disk, a relatively thick mass of magnetic material formed at the center of said disk opposite the poles of the magnet, to present a magnetic field of increased strength, and a relatively thin marginal part on said disk formed by the rapid decrease in thickness from the thick mass at its central portion towards the disk edges and terminating in a substantial knife edge for preserving the flexibility of the diaphragm.

In testimony whereof I have affixed my signature.

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