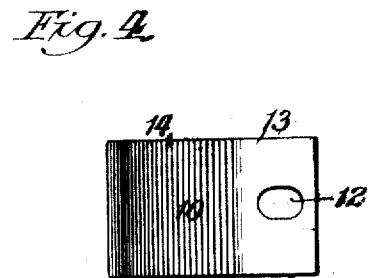
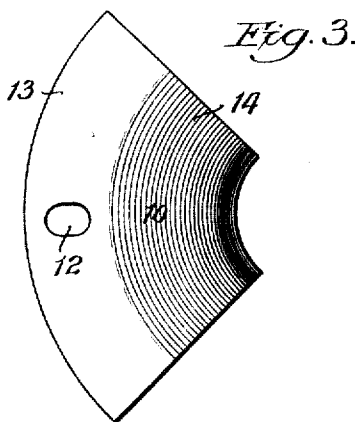
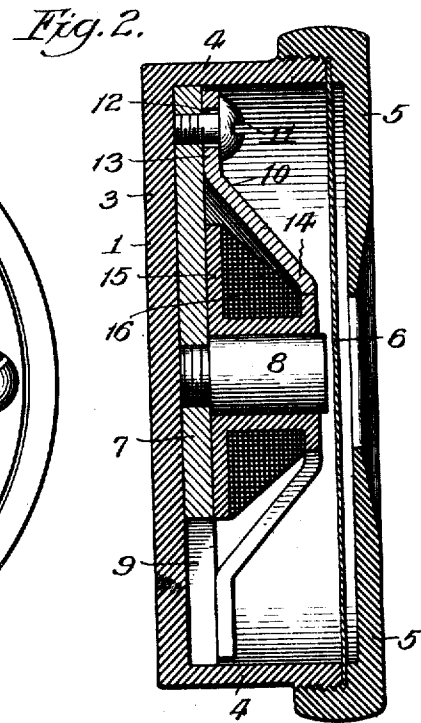
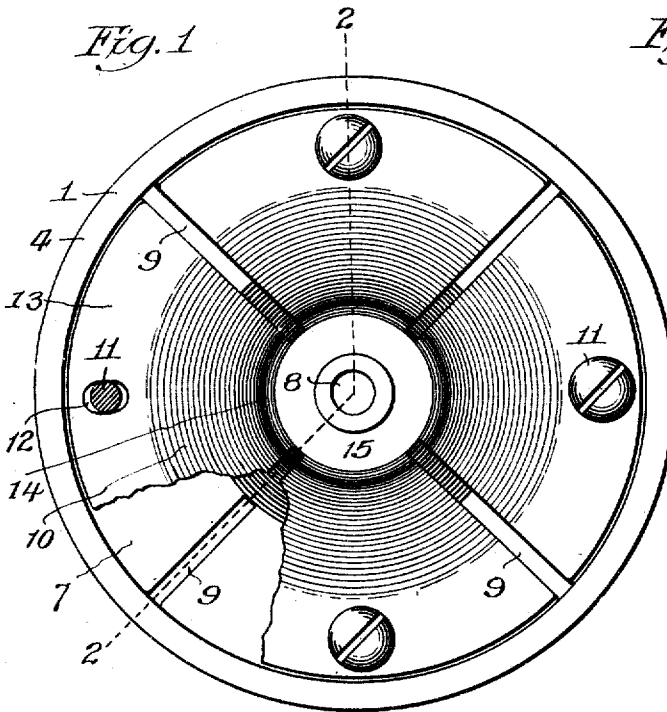


T. RHODUS.  
TELEPHONE RECEIVER.

APPLICATION FILED DEC. 16, 1916. RENEWED MAR. 21, 1918.

1,283,304.

Patented Oct. 29, 1918.



Witness:  
*John Enders*

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# UNITED STATES PATENT OFFICE.

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A CORPORATION OF ARIZONA.

## TELEPHONE-RECEIVER.

1,283,304.

Specification of Letters Patent.

Patented Oct. 29, 1918.

Application filed December 16, 1916, Serial No. 137,285. Renewed March 21, 1918. Serial No. 223,864.

*To all whom it may concern:*

Be it known that I, THOMAS RHODUS, a citizen of the United States of America, and a resident of Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Telephone-  
5 Receivers, of which the following is a specification.

This invention relates to the flat and compact type of telephone receivers, an example of which constitutes the subject matter of my prior Letters Patent No. 1,162,152, dated December 28th, 1915.

The present improvement has for its object to provide a simple and efficient structural formation and arrangement of the electro-magnetic pole pieces of the receiver, adapted to be adjustable in their relation to each other and to afford increased efficiency  
20 in action, combined with lightness and economy in manufacture, all as will hereinafter more fully appear.

In the accompanying drawings:—

Figure 1, is an elevation of a telephone  
25 receiver embodying the present improvement, the ear piece or cap and the diaphragm being removed.

Fig. 2, is a transverse section on line 2—2, Fig. 1.

30 Fig. 3, is an elevation of one of the sections of the outer annular electro-magnetic pole piece.

Fig. 4, is an elevation of a modified form of the same.

35 Similar reference numerals indicate like parts in the several views.

Referring to the drawing, 1 designates the inclosing shell or housing, formed with a flat bottom web 3 and an annular wall 4  
40 formed with an external screw-thread for engagement with a correspondingly formed annular flange of the cap or ear piece 5 of the receiver.

6 designates the diaphragm formed of a disk of sheet iron or other suitable material, and held in place by the ear piece 5, when the same is screwed into place, as shown.

7 designates the base plate or piece of the electro-magnetic member of the receiver,  
50 formed preferably of a flat disk of metal adapted to fit against the bottom web 3 of the casing 1 aforesaid, and carrying the inner or central cylindrical pole piece 8 of the structure. In the present improvement the

base plate 7 is formed with radial slits 9  
55 in its marginal portion to provide a series of integrally connected sectors corresponding in number with the series of independent sections which constitute the outer annular pole piece now to be described. 60

The outer annular pole piece above referred to, will in the present improvement comprise a series of radially disposed sections 10, secured in proper relation to each other and to the base plate 7 and pole piece 8 aforesaid, by attaching screws 11 passing through elongated slots 12, in the marginal portions of said sections, and screwing into the base plate 7, to provide limited adjustment in an assemblage of the parts. 70

While the sector shape of the pole piece sections 10 shown in Figs. 1 and 3 is the preferred form, it is within the scope of the present invention to form the same of a shape other than a sector, as for instance, a rectangular shape as shown in Fig. 4. The sectional or separated formation of parts above described, has been found to provide an increased electrical efficiency in the electro-magnetic member of the appliance, and  
80 in addition permits of a lighter and more economical production of the parts and the use of higher grade material for the sections 10 of the outer pole piece.

The general structure of the preferred  
85 form of the electro-magnetic member shown in the drawing, is similar to that shown in my former Patent No. 1,162,152, and the annular pole piece formed by the sections 10, is formed with a marginal attaching rim  
90 13 and a cone shaped inner web 14 the inner ends of the component sections 10 being arranged to provide a central space for the reception of one end of the hereinafter described spool or bobbin upon which is wound  
95 the energizing coil or helix of the electro-magnetic member of the receiver.

15 designates the spool or bobbin above referred to, and which is arranged around the inner or central pole piece 8 aforesaid. 100 In its preferred form as shown in Fig. 2, the spool or bobbin 15 is formed with an outer rim of a small diameter, and an inner rim of an enlarged diameter, adapting the spool to hold a conically wound energizing coil or helix 16, as in my aforesaid patented construction. 105

Having thus fully described my said in-

vention what I claim as new and desire to secure by Letters Patent, is:—

1. In a telephone receiver, the combination of a housing, a diaphragm, and an electro-magnetic member comprising a base, an inner pole piece carried centrally by said base, a series of truncated cone sections surrounding and carried by said base, said sections being separated from each other near the diaphragm by a series of radial slots, substantially as set forth.
2. In a telephone receiver, the combination of a housing, a diaphragm, and an electro-magnetic member comprising a base, an inner pole piece carried centrally by said base, an annular pole piece of a cone form carried by said base and having a plurality of radial slots, said slots dividing said annular pole piece into a plurality of separated members, substantially as set forth.
3. In a telephone receiver, the combination of a housing, a diaphragm, and an electro-magnetic member comprising a base, an inner pole piece carried centrally by said base, an annular pole piece carried by said base and having a series of radial slots dividing the portion of said annular pole piece nearest the diaphragm into a series of separated members, substantially as set forth.
4. In a telephone receiver, the combination of a housing, a diaphragm, and an electro-magnetic member comprising a base, an inner pole piece carried centrally by said base, an annular pole piece carried by said base and having a series of radial slots dividing the portion of said annular pole piece nearest the diaphragm into a series of separated members having a tapered form, substantially as set forth.
5. An electro-magnetic member for telephone receivers, comprising a base plate, an inner pole piece attached centrally to said base plate, an outer pole piece carried by said base plate and formed by a series of independent sections having a sector shape, and a spool surrounding the inner pole piece and carrying an energizing helix, substantially as set forth.
6. In a telephone receiver, the combination of a housing, a diaphragm, and an electro-magnetic member comprising a base, an inner pole piece carried centrally by said base, a series of outer members surrounding said inner pole piece and carried by said base, the portion of said outer members nearest the diaphragm converging toward the inner pole piece and separated from each other near the diaphragm by a series of radial slots, substantially as set forth.
7. An electro-magnetic member for telephone receivers, comprising a base plate, an inner pole piece attached centrally to said base plate, an outer pole piece formed by a series of sections of a sector form secured in an adjustable manner to the aforesaid base plate, and a spool surrounding the inner pole piece and carrying an energizing helix, substantially as set forth.
8. In a telephone receiver, the combination of a housing, a diaphragm, and an electro-magnetic member comprising a base, an inner pole piece carried centrally by said base, a series of outer members surrounding said inner pole piece and carried by said base, the portion of said outer members nearest the diaphragm being of a tapered form and converging toward the inner pole piece and separated from each other near the diaphragm by a series of radial slots, substantially as set forth.
9. An electro-magnetic member for telephone receivers, comprising a base plate formed with a series of radial slits, an inner pole piece attached centrally to said base plate, an outer pole piece carried by said base plate and formed by a series of independent sections having a sector shape, and a spool surrounding the inner pole piece and carrying an energizing helix, substantially as set forth.
10. An electro-magnetic member for telephone receivers, comprising a base plate formed with a series of radial slits, an inner pole piece attached centrally to said base plate, an outer pole piece formed by a series of sections of a sector shape secured in an adjustable manner to the aforesaid base plate, and a spool surrounding the inner pole piece and carrying an energizing helix, substantially as set forth.

Signed at Chicago, Illinois, this 13th day of December 1916.

THOMAS RHODUS.