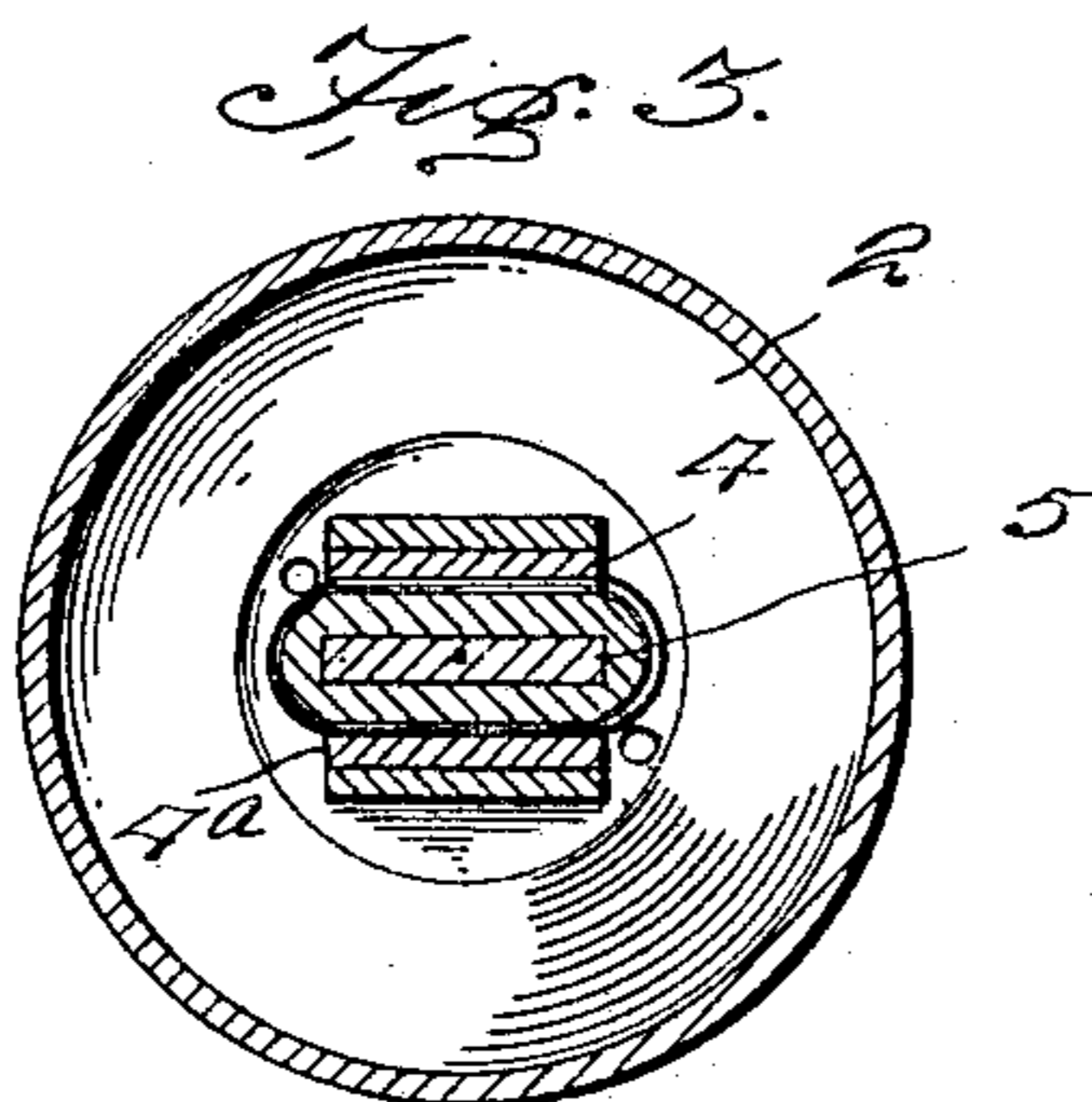
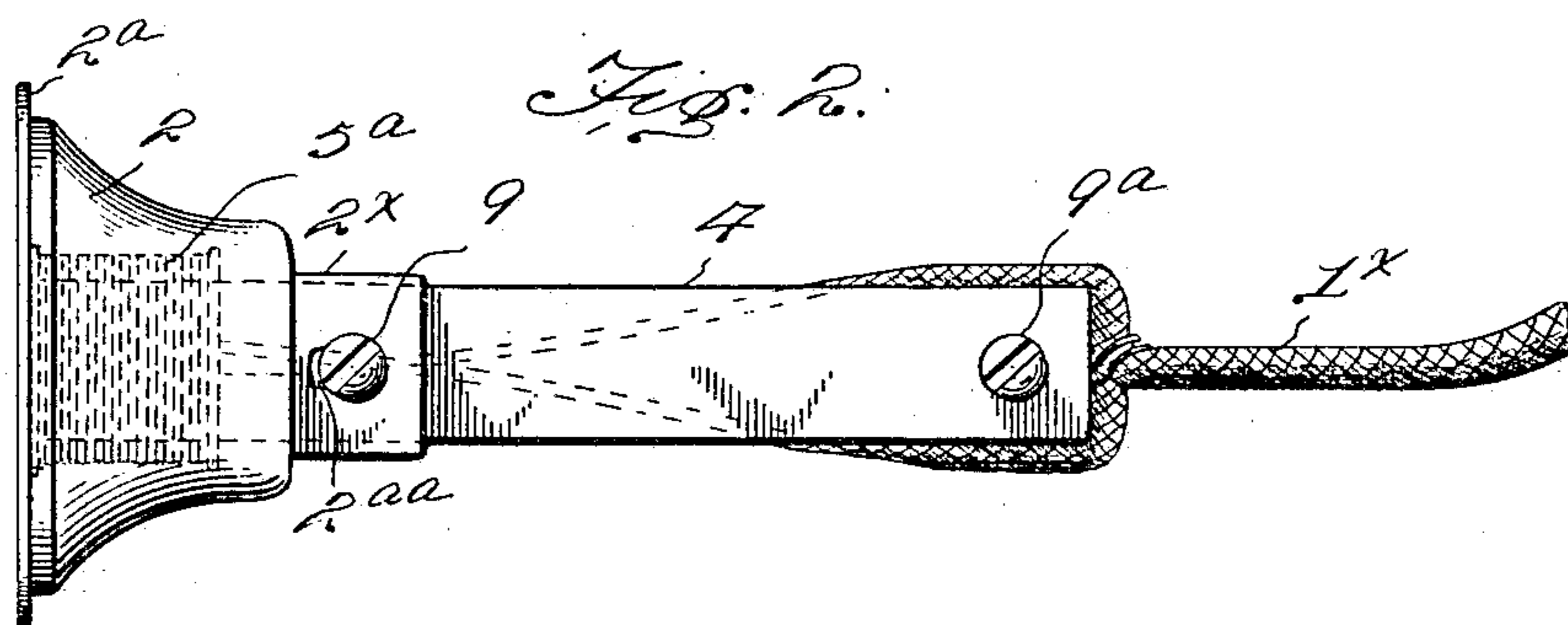
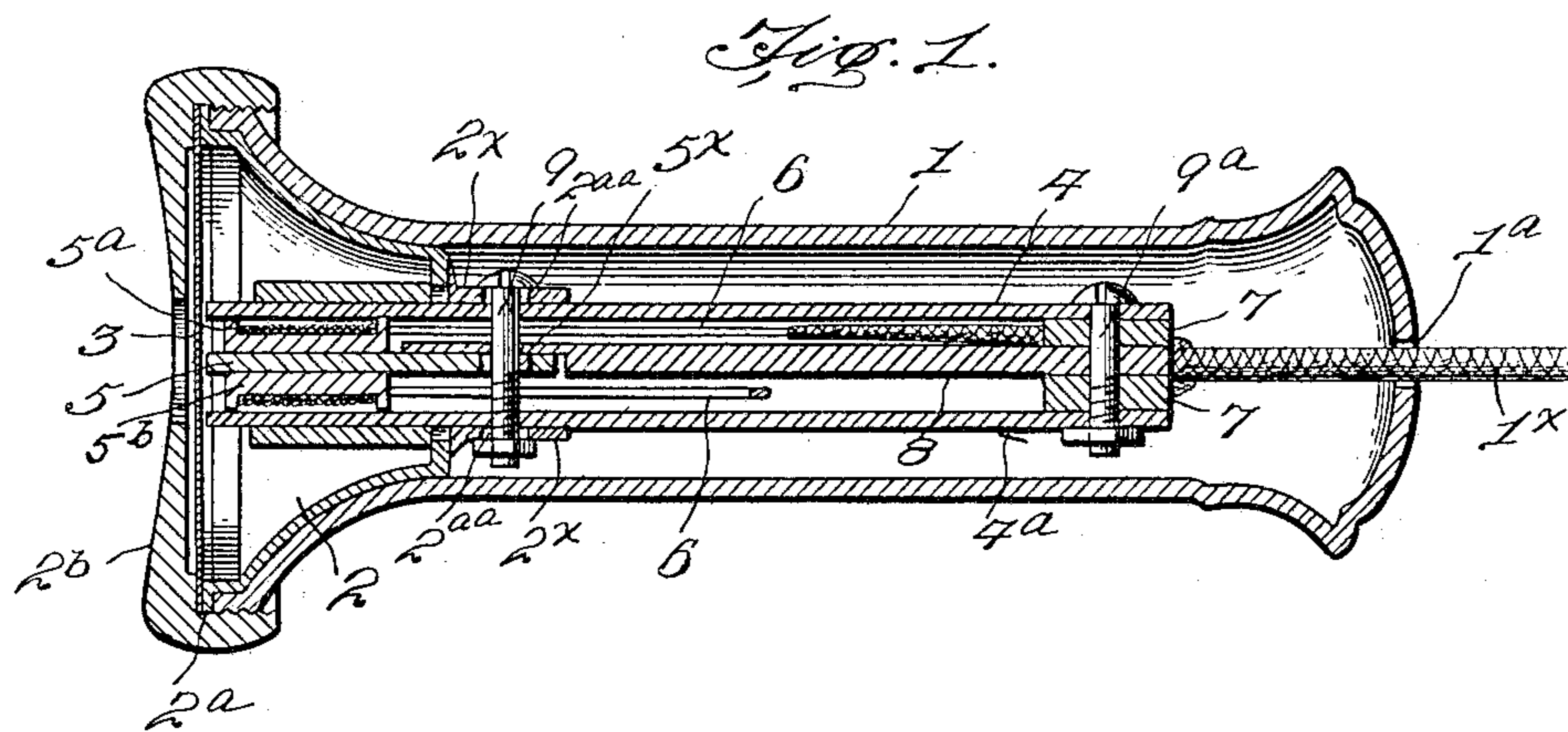


No. 758,795.

PATENTED MAY 3, 1904.

E. H. STRAUSS.
TELEPHONE RECEIVER.
APPLICATION FILED JULY 25, 1902.

NO MODEL.



witnesses:
J. M. Fowler Jr.
Gerald Griffin

Inventor
Ernest Hugo Strauss
By *H. Johnston*
Att'y

UNITED STATES PATENT OFFICE.

ERNEST HUGO STRAUSS, OF CHICAGO, ILLINOIS.

TELEPHONE-RECEIVER.

SPECIFICATION forming part of Letters Patent No. 758,795, dated May 3, 1904.

Application filed July 25, 1902. Serial No. 116,975. (No model.)

To all whom it may concern:

Be it known that I, ERNEST HUGO STRAUSS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Telephone-Receivers; 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 certain improvements in telephones, more especially receivers therefor.

It has for its object, among other things, to augment the sound-transmitting capacity of the receiver, to provide for the ready adjustment of the pole-pieces or magnetic field with relation to the diaphragm, to house or conceal the point of connection between the receiver and its suspending cord or conductor, and effect the compact arrangement or disposition of the parts.

It consists of the combination of parts, including their construction, substantially as hereinafter more fully disclosed, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a partly-longitudinal section of my invention in its preferred form. Fig. 2 is a view in side elevation with the casing removed. Fig. 3 is a transverse section taken through one set of the magnetic poles.

It will be understood that I do not limit myself as to details, as they may be changed without departing from the spirit of my invention and said invention yet remain intact and be protected.

In carrying into effect my invention I employ the usual hard-rubber shield or casing 1, with, however, a single or central opening 1^a through one end for the passage of the receiver-suspending cord 1^x, said cord, unlike the ordinary way of connecting up the same with said casing or shield upon the outside by the aid of posts, being connected up directly with the magnet within said casing or shield. Arranged within said casing or shield 1 is a preferably stamped-up brass cup 2, suitably fitted to the interior of the flared end portion thereof, but having an annular flange 2^a rest-

ing upon the forward edge or surface of said flared end portion. Fitted or screwed upon this end of said shield or casing and engaging said flange of said cup is a closure 2^b, with the usual central opening therethrough and adapted to clamp the diaphragm 3 in position upon said cup. Also arranged within said shield or casing are lateral magnetic poles 4 4^a, and centrally of the magnetic poles 4^a within the cup 2 is a central magnetic pole piece or core 5, upon which is wound insulated wire forming a single helix or coil 5^a. Said helix or coil is connected or wired up by insulated conductors or wires 6 6, passing via the pole-pieces 4 4^a to and connecting with the receiver-suspending cord 1^x, in turn connecting up, as usual, with an electrical battery, &c. Said lateral magnetic pole-pieces 4 4^a are connected up with each other and with the central magnetic pole-piece 5 by means of lateral plates 7 and a central plate 8 and suitable screw-bolts 9 9^a, passing through the pole-pieces 4^a 4, one of said bolts also passing through said plates. Said central pole-piece or magnet 5 has an elongated opening or slot 5^x, and in extensions 2^{aa} of the cup 2 are similar openings or slots 2^{aa}, through which openings or slots passes the bolt 9 to permit of the adjustment of the magnetic pole 5 within the cup 2 with relation to the diaphragm 3, according as circumstances may require. Said adjustment is effected by first loosening the bolt 9 and grasping with the hand the part 5 or 5^b, the two being connected together and moving the same in the required direction or toward said diaphragm and then again tightening said bolt to cause the parts 4 4^a to forcibly engage the part 5^b to retain the same with the part 5 firmly in position. The parts 4 4^a are accordingly adjusted or moved by moving said bolt previous to the tightening thereof, this latter movement being permitted by means of the slots 2^{aa}.

It will be observed from the foregoing that the diaphragm is adapted to be brought or adjusted very close to the central or lateral pole-pieces at that end of the receiver, whereby the electrical sound-waves are more directly delivered upon said diaphragm, consequently promoting or augmenting the transmission of the sound of the voice entering the receiver. Also,

that the diaphragm being held upon the metallic cup, as above noted, and a metal surface not being affected by heat, as is rubber, there is less liability of interference from that cause
 5 of the adjustment of said diaphragm as where the last-named is seated directly upon the ordinary form of rubber casing or shield as heretofore. Also, that a combined single and
 10 double pole receiver is obtained by the above-described parts, having the effect to still further intensify the sound-waves. I also produce by this arrangement what I term an
 "annular" magnetic field, which is more even or uniform than obtainable by the ordinary
 15 form of receiver.

The various parts of this receiver, including the means for effecting the connection between the magnetic poles and the receiver-suspending cord or medium, are arranged or disposed
 20 wholly within the shield or casing thereof. Also, a single screw only is employed for effecting both the adjustment of the magnet-containing cup and the retention of the magnet in position in said cup.

25 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A telephone-receiver embracing a cup arranged within the ordinary shield or casing
 30 and a series of magnetic poles, including a central pole, said cup having elongated slots therein, and means connecting said magnetic poles and said cup, extending through said slots to effect the adjustment of said poles with relation to the sound-transmitting diaphragm, said
 35 central pole being adjustable independently of the other poles.

2. A telephone-receiver embracing a series of magnetic poles including a central pole arranged at or near the diaphragm end thereof,
 40 electrically connected up and arranged close

to the diaphragm, and a central plate, the central pole being adjustably connected to said central plate.

3. A telephone-receiver, embracing series
 45 of magnetic poles including a central pole, arranged at the diaphragm end, a central plate adjustably connected to the central pole, and lateral plates connecting with the corresponding
 50 poles.

4. A telephone-receiver, embracing series of magnetic poles including a central pole, a central plate, adjustably connected to the central pole, lateral plates connected to the corresponding poles and means effecting connection
 55 between said central and lateral plates.

5. A telephone-receiver, embracing series of magnetic poles including a central pole, a central plate adjustably connected with the
 60 central pole, lateral plates connecting with the corresponding poles, and a metallic cup containing the magnets or poles at the diaphragm end of the receiver, the poles or magnets at said end of the receiver being adjustably connected to said cup.
 65

6. A telephone-receiver, embracing a casing or shield, series of magnetic poles, including a central pole, arranged within said casing and electrically connected up, a cup containing the poles at the diaphragm end of the receiver, a central plate, said central pole being
 70 adjustably connected to said central plate, and a cord or conductor connected up with said magnets, within said casing, said casing having a central opening through one end for the
 75 passage of said cord, substantially as set forth.

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

ERNEST HUGO STRAUSS.

Witnesses:

R. A. BURTON,
 E. ZIPPERLY.