

No. 645,959.

Patented Mar. 27, 1900.

A. K. KELLER.
TELEPHONE RECEIVER.

(Application filed Feb. 6, 1899. Renewed Oct. 11, 1899.)

No Model.

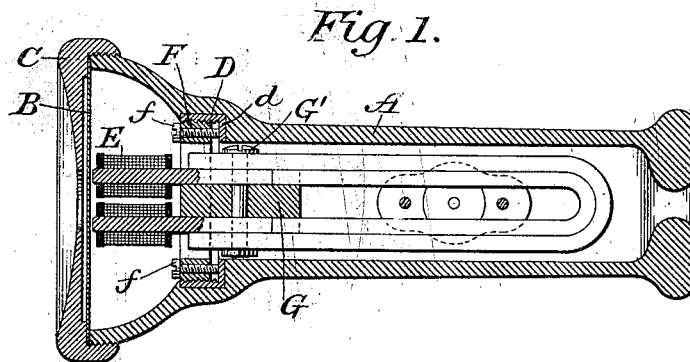


Fig. 2.

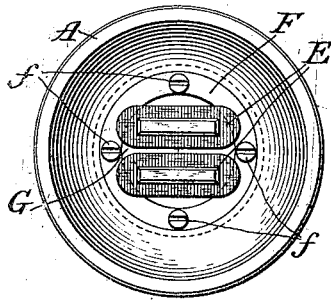


Fig. 3.



Fig. 4.

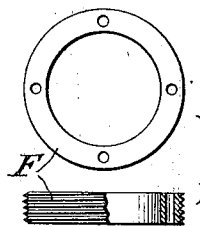
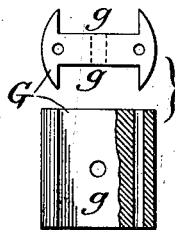


Fig. 5.



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UNITED STATES PATENT OFFICE.

ALBERT K. KELLER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
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TELEPHONE-RECEIVER.

SPECIFICATION forming part of Letters Patent No. 645,959, dated March 27, 1900.

Application filed February 6, 1899. Renewed October 11, 1899. Serial No. 733,327. (No model.)

To all whom it may concern:

Be it known that I, ALBERT K. KELLER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Telephone-Receivers, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention has relation to the means for supporting the magnet of a telephone-receiver within its shell or casing.

One object of the invention is to make the magnet easy of adjustment toward and from the diaphragm and at the same time to provide for fastening the magnet securely in position when it has been adjusted.

Another object is to guard against expansion of the magnet-cores and consequent loss of adjustment by the heat of the hand in handling the instrument, as well as to prevent the transmission of electric shocks to the person handling the instrument.

In accordance with this invention the shell or casing of the receiver is made wholly of rubber or other suitable non-conducting material and has an interior space or chamber of sufficient size to receive the magnet without touching the same at any point. An internally-threaded sleeve is securely fastened to or embedded in the wall of the shell or casing, preferably near the end which receives the diaphragm, encircling the central chamber and provided with an inwardly-projecting flange. An encircling collar secured to the magnet at a corresponding point is screw-threaded to engage the interiorly-threaded sleeve or thimble above referred to and is provided near its circumference with one or more set-screws parallel to the axis and arranged to impinge upon the flange of the sleeve or thimble, their heads being accessible from the open end of the shell when the diaphragm has been removed in the usual manner. When the magnet has been adjusted in position by rotating it, with its collar, within the interiorly-threaded sleeve or thimble, the set-screws are turned until they bear upon the flange and so cause the collar to bind within the thim-

ble and its further rotation to be prevented. 50
The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal central section of the receiver constructed in accordance with my invention. Fig. 2 is an end view of the same with the diaphragm and cap removed. 55
Fig. 3 is a detail view, partly in section, of the sleeve secured to the shell or casing. Fig. 4 shows in detail the threaded collar which supports the magnet, and Fig. 5 shows in detail 60 the carrier-block for the magnet.

In the construction represented in the drawings a shell or casing or holder of hard rubber or other suitable material and of usual or suitable form and construction, except as herein- 65 after indicated, is represented at A. The diaphragm B is applied to the enlarged end of the shell or holder and is secured in place in the usual manner by the cap or cover C. Within the shell or holder and encircling the central 70 chamber thereof, preferably near the enlarged end, is an interiorly-threaded sleeve or thimble D, being held securely in place in any suitable manner, as by having the shell cast or molded about it. This sleeve or thimble is also 75 provided with an inwardly-turned flange *d* for a purpose presently to be described. The magnet E, of any usual or suitable form, is supported by a ring carrier F, which is exteriorly threaded to engage the threaded sleeve or 80 thimble D, so that by rotation of the magnet, with the carrier, within the sleeve or thimble the distance of the poles of the magnet from the diaphragm B can be adjusted. It is necessary that the parts be held firmly and 85 securely in their adjusted positions, and for this purpose the ring carrier F is provided with one or more set-screws *f* parallel with the axis and arranged to bear upon the flange *d* of the sleeve or thimble D. The heads of these 90 screws are readily accessible when the diaphragm B and cap or cover C are removed, and by setting them up after adjustment of the magnet until their points impinge upon the flange *d* the carrier F is made to bind 95 within the said sleeve or thimble and is securely held against further rotation in either direction. For convenience in construction

a clamping block or holder G is provided for insertion between the arms of the magnet E, being cut away, as at *g*, on opposite sides to receive the respective arms of the magnet and having its sides curved in the arc of a circle to fit tightly within the carrier F. A bolt G' may be passed through the arms of the magnet and through said block or holder to bind all firmly together.

10 It will be observed that the magnet is out of contact with the shell or casing A throughout its length and is supported near the diaphragm only, so that it is thoroughly insulated from the heat of the hand when the receiver is in use, and its adjustment is therefore not likely to be affected. In the same manner, also, the person using the instrument is protected from the transmission of electric shocks, there being no metal whatever exposed for contact. The connecting-wires are led through a hole formed for the purpose in the end of the shell or casing and are connected directly with the wires of the magnet-coils.

25 I claim as my invention—

1. In a telephone-receiver, the combination with a shell or casing and a magnet, of a sleeve or thimble secured to the shell or casing and

encircling the central chamber, said sleeve or thimble being interiorly threaded and having an inwardly-turned flange, a carrier for the magnet exteriorly threaded to engage said sleeve or thimble and set-screws carried by said carrier and arranged to impinge against said flange, substantially as shown and described. 35

2. In a telephone-receiver, the combination with a shell or casing and a magnet, of a sleeve or thimble secured to the shell or casing and encircling the central chamber, said sleeve or thimble being interiorly threaded and having an inwardly-turned flange, a carrier for the magnet exteriorly threaded to engage said sleeve or thimble, set-screws in said carrier arranged to impinge against said flange, and a clamping block or holder for the magnet slotted to receive the arms of the magnet and formed to fit tightly within said carrier, substantially as shown and described. 45

This specification signed and witnessed this 17th day of January, A. D. 1899. 50

ALBERT K. KELLER.

In presence of—

ANTHONY N. JESBERA,
W. M. EGGLESTON.