

(No Model.)

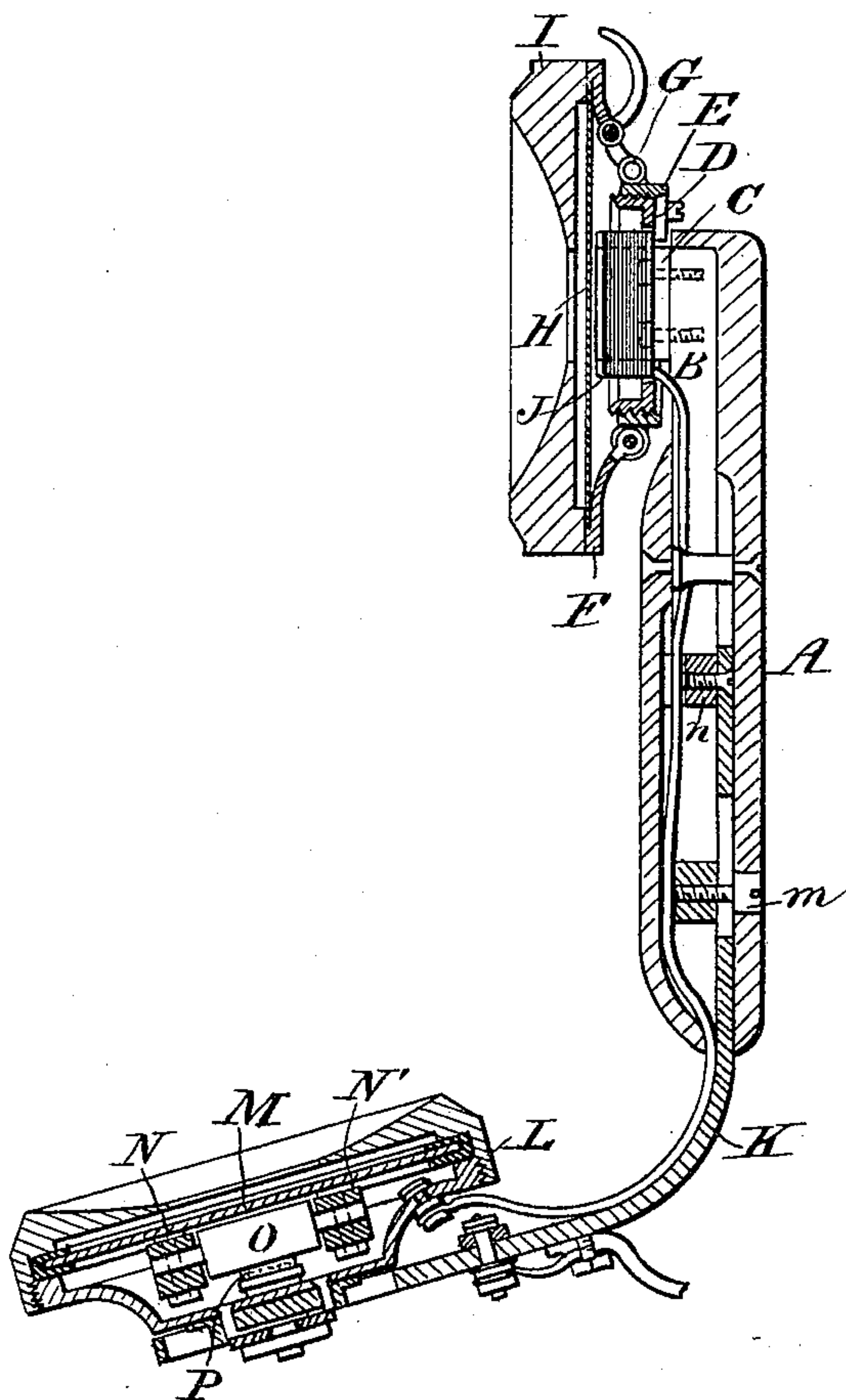
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E. NORIEGA.
TELEPHONE.

No. 481,049.

Patented Aug. 16, 1892.

Fig. 1.



WITNESSES:

Donn Twitchell
W. Sedgwick

INVENTOR:

E. Noriega
BY *Munn & Co*
ATTORNEYS

(No Model.)

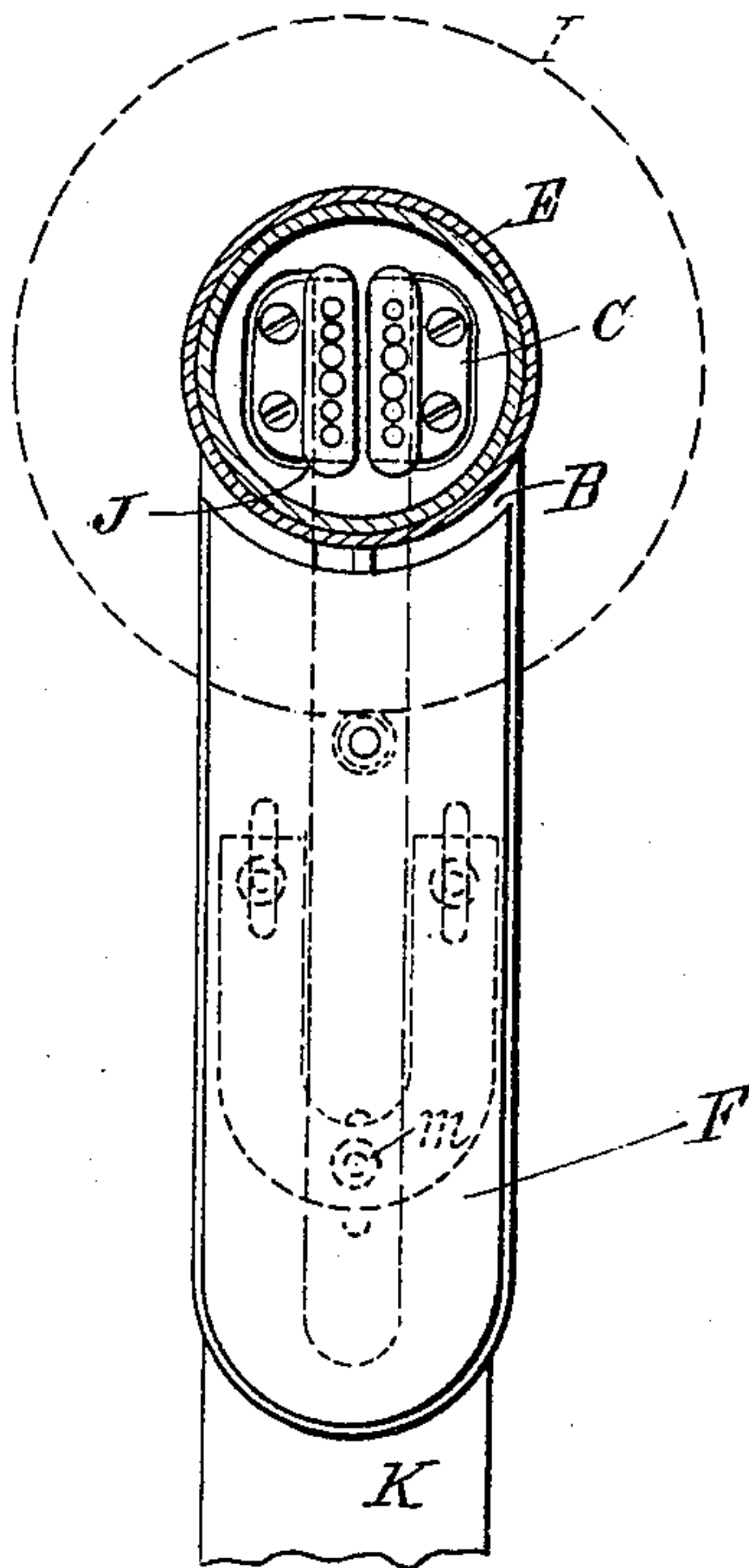
2 Sheets—Sheet 2.

E. NORIEGA.
TELEPHONE.

No. 481,049.

Patented Aug. 16, 1892.

Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ELOY NORIEGA, OF MEXICO, MEXICO.

TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 481,049, dated August 16, 1892.

Application filed June 11, 1891. Serial No. 395,888. (No model.)

To all whom it may concern:

Be it known that I, ELOY NORIEGA, of Mexico, Mexico, have invented a new and Improved Telephone, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a longitudinal section of my improved combined transmitter and receiver. Fig. 2 is a sectional view of the telephone-magnet.

Similar letters of reference indicate corresponding parts in both the views.

The object of my invention is to construct a compact and efficient telephone for transmitting and receiving speech.

My invention consists in a combined transmitter and receiver formed of an angled handle carrying at one end a microphone and at the other end a magneto-receiver, and in the combination therewith of an auxiliary transmitter and receiver, by means of which conversation can be carried on by two persons through one instrument.

The handle A, of vulcanite or other suitable material, contains a narrow U-shaped magnet B, provided with lateral pole-pieces C. To the said pole-pieces C is attached the screw-threaded ring D, to which is fitted the metallic internally-screw-threaded ring E. To the ring E is hinged the diaphragm-cell F, the said cell being provided at a point diametrically opposite the hinge with an adjusting-lever G for varying the distance between the pole-pieces C and the iron diaphragm H, clamped to the diaphragm-cell F by the chambered ear-piece I of the usual description.

Upon the pole-pieces C are placed bobbins J, which are in the main telephone-circuit. A curved arm K, of brass or other non-magnetic material, is inserted in the handle A and is held in place by a screw *m*, passing through a slot in the said arm and into the curved end of the magnet B, also by a block *n*, attached to the side of the arm K and adapted to slide between the arms of the magnet. The curved arm K carries at its free end a diaphragm-cell L, containing the diaphragm M, the said diaphragm being preferably made of pine or other resonant wood protected by a coating of shellac or other water-resisting material.

To the diaphragm M are secured carbon bars N N', which are bored to receive the ends of the carbon-rods O. The said carbon-rods are pressed toward the diaphragm by a cushion P, of absorbent material, such as felt or cotton. The bars N N' are connected up with the local battery and the primary wire of the induction-coil.

In the modified form of telephone shown in Fig. 4 the extremities of the U-magnet *h'* are bent laterally and perforated to receive the screws *i'*. The bobbins *j'* are mounted upon right-angled pole-pieces *k'*, which are slotted to receive the screws *i'*, entering the angled ends of the magnet *h'*. The part of the angled pole-piece upon which the wire is wound is formed of series of soft-iron pins *l'*, projecting from the slotted portion of the pole-piece. In other respects the telephone is similar to the receiver B'. (Shown in Fig. 2.)

In the form shown in Figs. 6 and 7 the bobbins *j*² are mounted upon polar extensions *k*², which are secured to the end of the U-magnet *h*² by screws inserted in the slotted ends of the set-screws, as shown in Fig. 7. In the modification shown in Figs. 8, 9, and 10 the angled plates *k*³, which support the bobbins *j*³, are attached to the sides of the U-magnets *h*³, and the cores of the bobbins, which form a part of the angled plates, are formed of iron rods, as in the other case. To the magnet *h*³ is secured an externally threaded collar *i*³, to which is fitted the diaphragm-cell *f'*, which is capable of being adjusted by turning the cell upon the collar, thereby causing the diaphragm *g'* contained by the cell to approach or recede from the poles of the magnet.

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

1. In a telephone-receiver, a pole-piece formed of series of round rods or wires of different diameters attached to the pole of a permanent magnet and forming an oblong core adapted to receive the bobbins, substantially as specified.

2. In a combined telephone transmitter and receiver, the combination of the tubular insulating-handle A, the U-magnet B, having the lateral pole-pieces C, the bobbins J, placed on the pole-pieces, the diaphragm-cell F, the

diaphragm H, and adjustable curved arm K, the diaphragm-cell L, the diaphragm M, the perforated carbon bars N N', the carbon-rods O, and the cushion P, substantially as specified.

5 3. In a combined telephone transmitter and receiver, the combination of the tubular insulating-handle A, the U-magnet B, having the lateral pole-pieces C, the screw-threaded ring D, the screw-threaded collar E, fitted to
10 the ring D, the diaphragm-cell F, hinged to the collar E, the diaphragm H, and curved arm K, the bobbins J, placed on the pole-pieces C, the diaphragm-cell L, the diaphragm M, the perforated carbon bars N N', the carbon-rods O, and the cushion P, substantially 15 as specified.

ELOY NORIEGA.

Witnesses:

LUIS SANTA MARINA,
JOSÉ GARCIA.