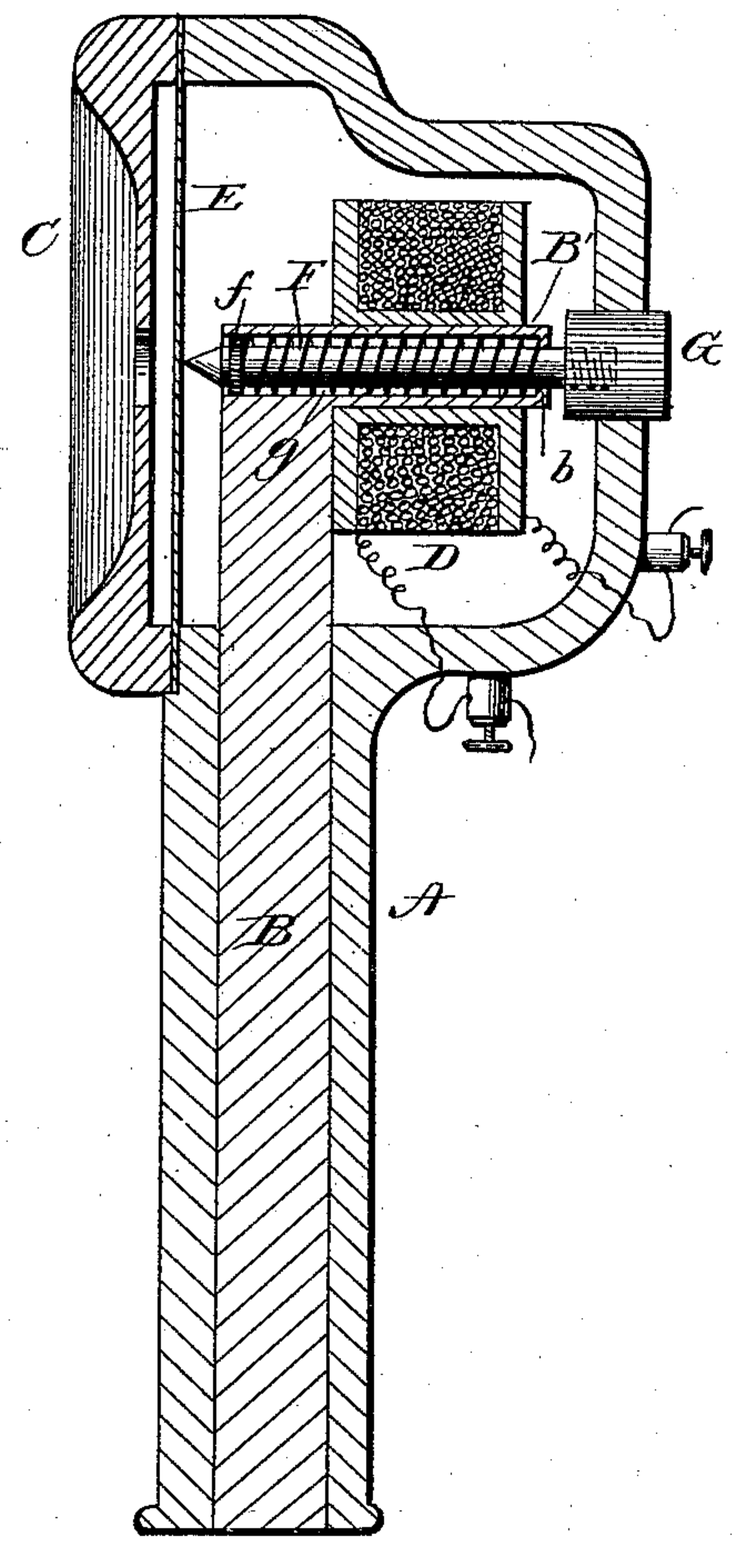
(No Model.)

H. E. WAITE.

TELEPHONE RECEIVER.

No. 286,876. Patented Oct. 16, 1883.



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HENRY E. WAITE, OF NEW YORK, N. Y.

TELEPHONE-RECEIVER.

SPECIFICATION forming part of Letters Patent No. 286,876, dated October 16, 1883.

Application filed May 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. WAITE, of New York, county of New York and State of New York, have invented a new and useful Improvement in Telephone-Receivers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making part of this specification.

My invention relates to a novel construction of the magnet of the receiver, and to a novel arrangement of the armature, coil, and sounding-board or diaphragm in connection therewith, as hereinafter explained.

The accompanying drawing represents a section through my improved receiver.

A represents the handle of the receiver, surrounding and inclosing the magnet B and other parts of the receiver, said handle being made in any suitable or desired form. The magnet is in the form of a bar, provided on its end adjacent to the ear-piece C of the receiver with a tubular arm, B′, arranged at right angles, or thereabout, to the body of the magnet, as shown. A chamber is formed in the enlarged head or end of the handle for the reception of the coil D, which surrounds the tubular arm or sleeve B′ on one side of the body of the magnet, and said chamber is open on the opposite side of the magnet for the reception of the diaphragm or sounding-board E and the ear-piece, which may be secured to the handle in any suitable manner. Within the sleeve or tubular arm B′ is placed a rod, F, of less diameter than the bore of sleeve B′, for adapting it to slide easily therein longitudinally, and surrounding said rod or pin within the sleeve B′ is a spiral spring, *g*, resting at one end against a shoulder or internal annular flange, *b*, on the sleeve, and at its opposite end against a collar, *f*, on the rod F. Rod F is made of hard rubber or other non-magnetic material, and is pointed at its end adjacent to the diaphragm E, the spring *g* serving by its tension to hold the point in contact with the diaphragm. Any other suitable or preferred arrangement of spring that will answer this purpose may be employed in lieu of that described. The opposite end of rod F from the point referred to is by preference provided with a screw-thread adapting it to receive a perforated and internally-threaded nut or plate, G, of magnetic material forming an armature to the pole of the magnet at the outer end of sleeve B′, this construction facilitating the adjustment of the plate or armature G nearer to or farther from said pole, as described. The armature G may be made either of soft iron or in the form of a polarized armature, as preferred. The diaphragm or sounding-board is made of elastic and by preference of non-magnetic material, as giving the most satisfactory results. The coil will be connected with the usual binding-posts, or with the line-wires direct, in any usual or preferred manner.

The operation will be readily understood. The rod or pin F is held in constant contact with the sounding-board by the spring referred to, and the disturbances in the current act upon the armature secured to said rod for increasing and giving a varying pressure of the latter upon the sounding-board, and which may be regulated by the adjustment of the armature on said rod for setting it nearer to or farther from the pole of the magnet, as explained.

Having now described my improved receiver, what I claim as new is—

1. The magnet provided with the tubular arm or sleeve, in combination with the coil surrounding said sleeve, the non-magnetic pin sliding in said sleeve, the armature applied thereto, and the sounding-board or diaphragm, substantially as described.

2. The combination, with the magnet provided with the tubular arm or sleeve, of the sliding pin, the coil surrounding said sleeve and pin, the spring for holding said pin in contact with the diaphragm, and the armature secured to said pin, and operating subtantially as described.

3. The combination, with the handle A, of the magnet B, provided with the tubular arm B′, the coil surrounding said arm, the pin F, sliding longitudinally in said tubular arm and supporting the armature G, the spring *g*, and the diaphragm E, substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand.

HENRY E. WAITE.

Witnesses:
H. B. ZEVELY,
E. W. DEKNIGHT.