

(No Model.)

H. ALABASTER & T. E. GATEHOUSE.

TELEPHONE RECEIVER.

No. 314,306.

Patented Mar. 24, 1885.

Fig. 1.

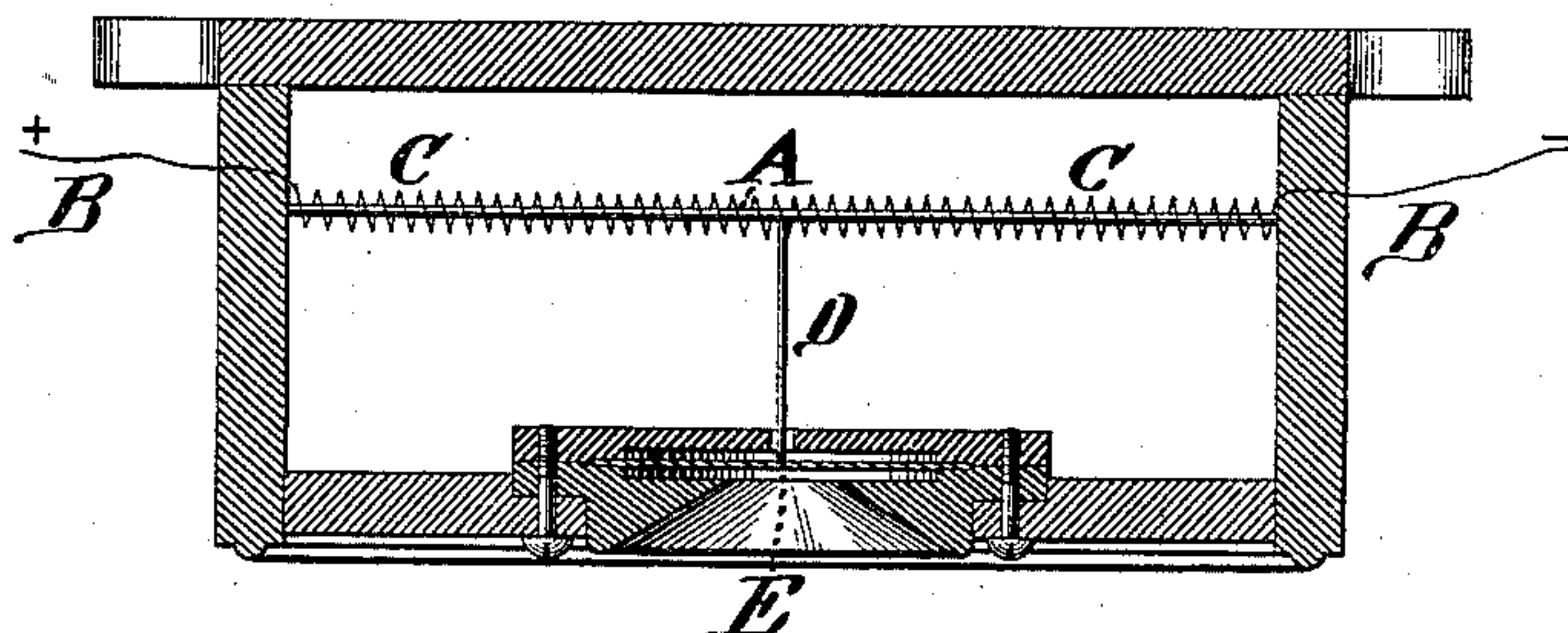
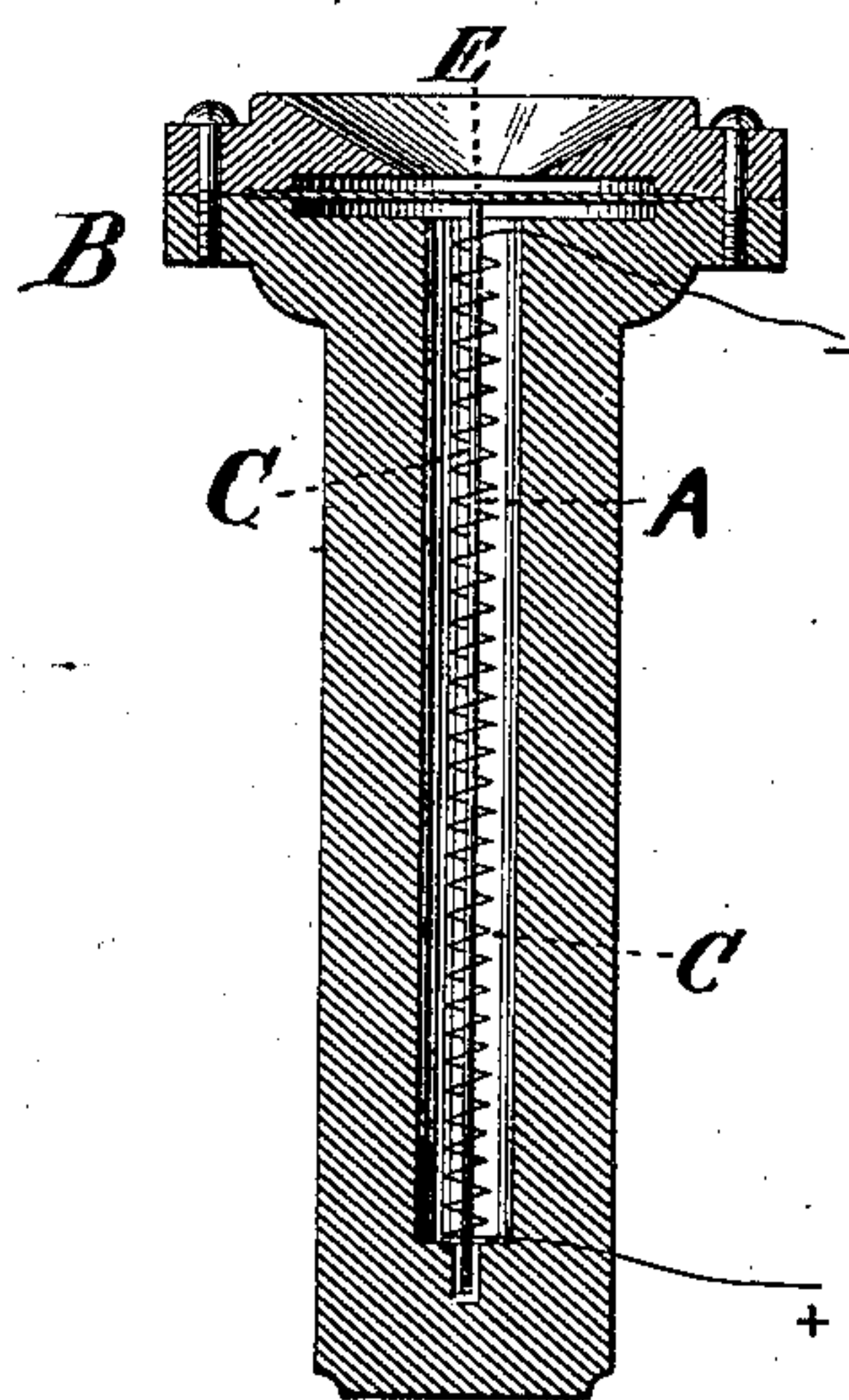


Fig. 2.



Attest:

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Att'y

UNITED STATES PATENT OFFICE.

HENRY ALABASTER, OF SOUTH CROYDON, AND TOM ERNEST GATEHOUSE,
OF CAMBERWELL, COUNTY OF SURREY, ENGLAND.

TELEPHONE-RECEIVER.

SPECIFICATION forming part of Letters Patent No. 314,306, dated March 24, 1885.

Application filed September 20, 1884. (No model.) Patented in England October 30, 1882, No. 5,167; in France December 7, 1882, No. 152,487, and in Germany December 9, 1882, No. 23,992.

To all whom it may concern:

Be it known that we, HENRY ALABASTER, of South Croydon, in the county of Surrey, and TOM ERNEST GATEHOUSE, of Camberwell, in the same county, in England, both citizens of Great Britain, have invented certain new and useful Improvements in Telephone-Receivers, (for which we have obtained Letters Patent in Great Britain, No. 5,167, dated October 30, 1882; in France, No. 152,487, dated December 7, 1882; in Germany, No. 23,992, dated December 9, 1882,) of which the following is a specification.

In explanation of this device we append hereto an illustration thereof. At Figure 1, A is the core, of iron, steel, or other magnetic metal, fixed or supported in parts of the case B. The core A is surrounded by a coil of wire, C C, through which the current or currents pass, of which the modulations produce the articulated or other sounds, after the manner well known.

A wire or thin rod, D, of any sound-conducting material, is fixed anywhere to the core A, and preferably projecting at right angles to it. Upon the extremity of this rod is fitted the resonant disk E, fitted in any convenient ear-piece. We specially prepare, in the manner hereinafter described, the core or wire A, of iron, steel, or other magnetic metal, before it is inserted into the receiver, as above described.

The mode of preparation is this: We stretch the wire or core under longitudinal strain by any convenient tool or appliance until a permanent set of elongation and the consequent change of molecular structure has taken place. We find it convenient to insure such permanent set of elongation by stretching the said wire or core until it breaks, and we then use the broken parts for the purpose described. We find that the abnormal molecular condition of the iron or the steel wire core due to such special method of preparation adds largely to the loudness of the communicated sounds and words, and enables a clearly-articulating telephonic receiver to be constructed even when such prepared core is surrounded by only a single coiled wire including a battery or other

source of electric currents, and through which flows a variable current, one end of the said core being left free.

This specially-prepared core may be adaptable to a variety of telephonic receivers diverse from those more particularly described in this specification; but we illustrate, at Fig. 2 on the drawings hereto annexed, a form of receiver in which the improvement in clearness and loudness of articulation is particularly due to the adaptation of our improved core. A is the improved core or wire, of iron, steel, or other magnetic metal, prepared with permanent set of elongation, free at one end and fixed at the other to a resonant disk, E, which is fixed by its outer circumference in the case B, formed with a convenient ear-piece. A single coiled wire, C C, surrounding the core will, with our improved core, suffice to produce loud and clear articulate sounds when a variable current caused by a suitable transmitter passes through the said coil.

Having now described the nature of our said invention and the manner in which the same may be carried into effect, be it known that

What we consider novel, and desire to protect by Letters Patent, is—

1. In a telephone, an electro-magnet core of magnetic metal having a permanent set of its molecules, substantially as described.

2. In a telephone, a wire or rod of magnetic material inclosed in a magnet-coil, in combination with a wire or rod projecting at approximately right angles from the same, and connected to a disk of resonant material, substantially as described.

3. The combination of the case B, the rod of magnetic material A, the insulated wire coil C, the rod D, and the disk E.

Signed at 6 St. Dunstons Hill, London, in the county of Middlesex, in England, this 6th day of August, 1884.

HENRY ALABASTER.
TOM ERNEST GATEHOUSE.

Witnesses:

FRED CHEESWRIGHT,
SAM. P. WILDING.