

No. 617,314.

W. E. BYRNS.  
TELEPHONE.

Patented Jan. 10, 1899.

(No Model.)

FIG. 1.

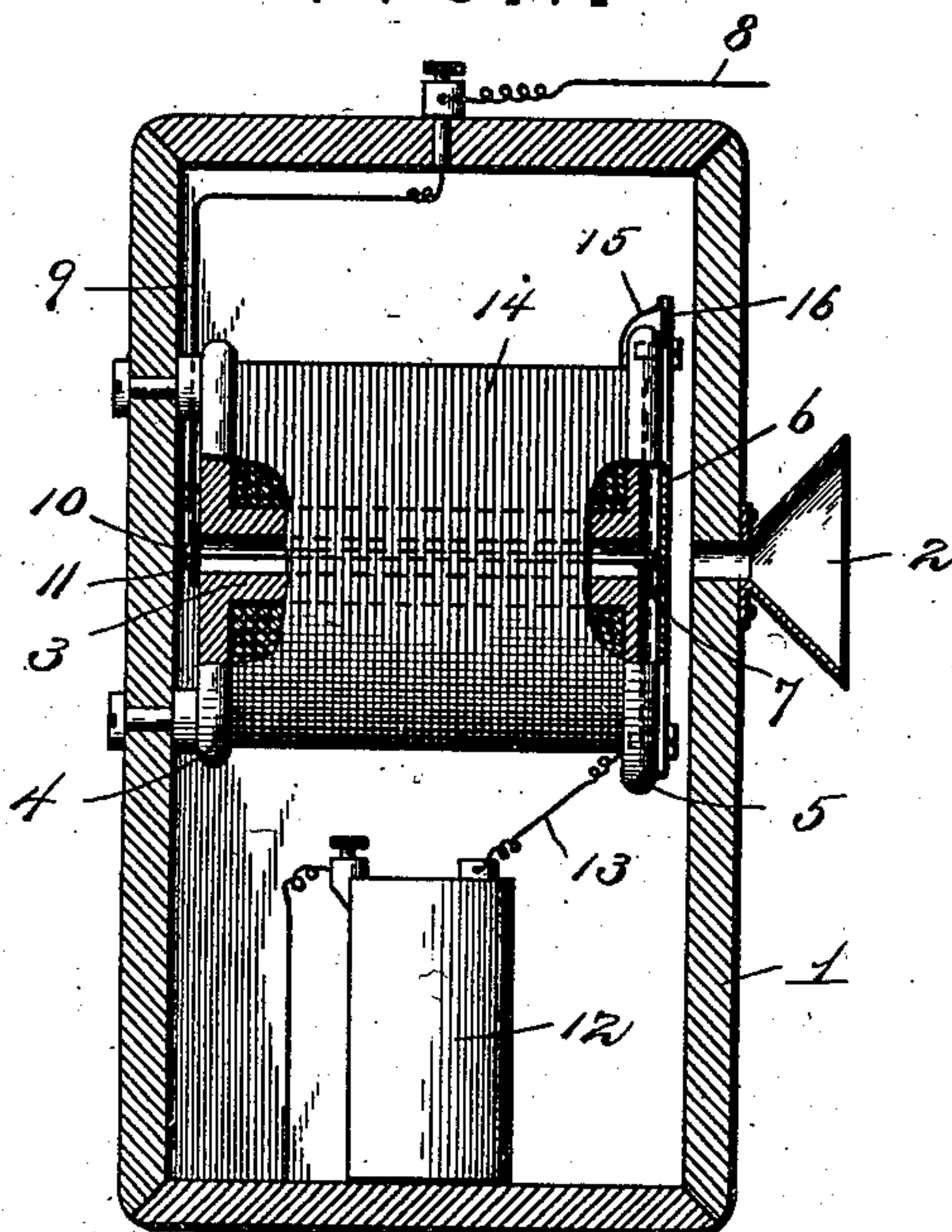
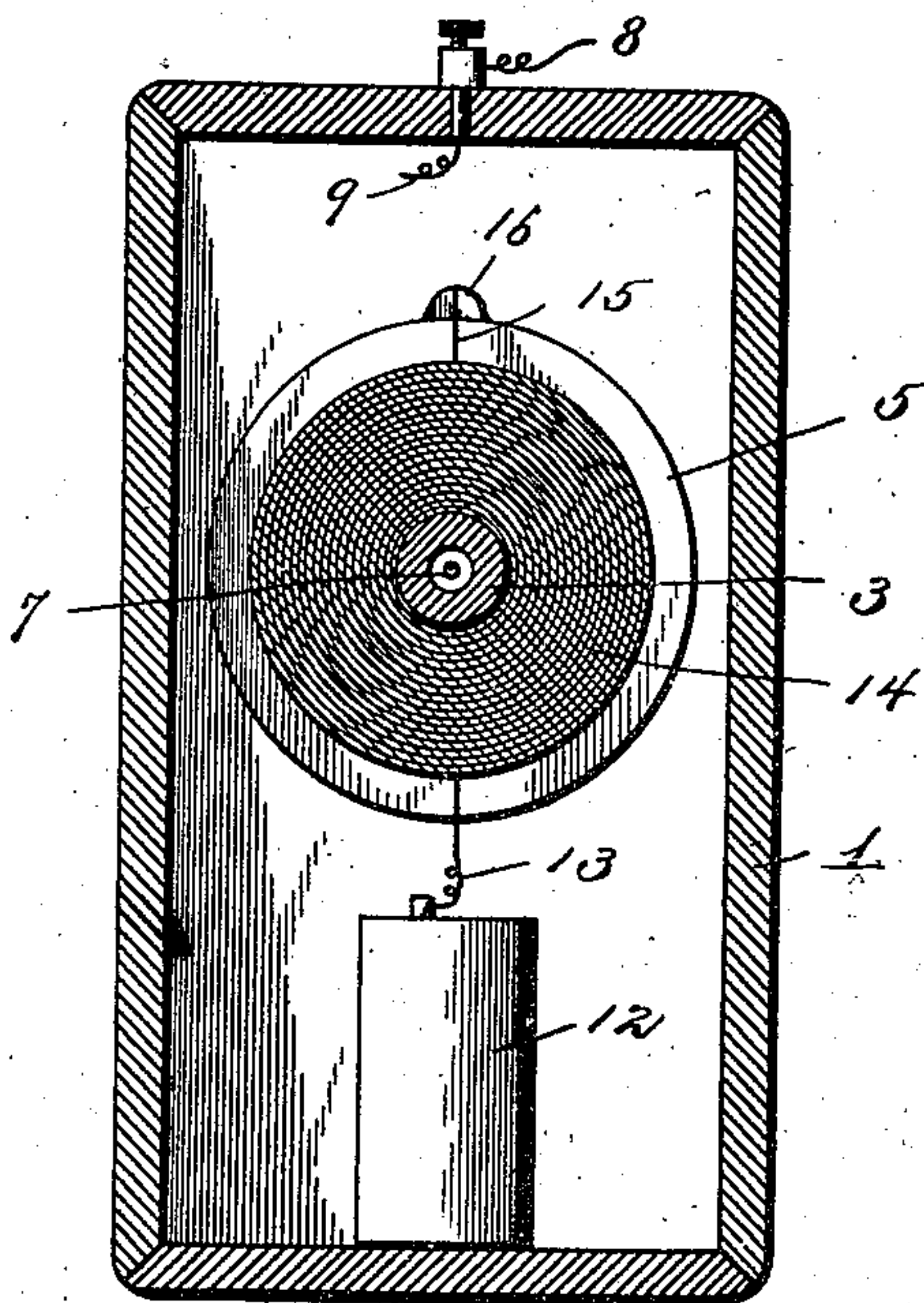


FIG. 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

WILL E. BYRNS, OF ADAMS, INDIANA, ASSIGNOR OF ONE-HALF TO JOHN F. HUCKLEBERRY, OF SAME PLACE.

## TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 617,314, dated January 10, 1899.

Application filed May 27, 1897. Serial No. 638,401. (No model.)

*To all whom it may concern:*

Be it known that I, WILL E. BYRNS, of Adams, in the county of Decatur and State of Indiana, have invented certain new and useful Improvements in Telephones; 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 magneto-telephones, and is designed for the production of an improved transmitter by means of which articulate sounds may be transmitted with a greater degree of clearness and distinctness over the line-wire to the receiver.

The invention consists in certain details of construction and combinations of parts, which will be hereinafter more fully described and claimed.

In the drawings forming a part of this specification, Figure 1 represents a vertical longitudinal sectional view through the transmitter. Fig. 2 is a similar view at right angles thereto.

Like reference-numerals indicate like parts in both views.

The casing or cabinet 1 is provided with an opening, in which the mouthpiece 2 is located. Within the casing is secured a hollow soft-iron core 3, having heads 4 5 at opposite ends thereof, the head 5, adjacent to the mouthpiece 2, being provided with a recess, as clearly shown. Secured to said head 5 is the diaphragm 6, which has soldered or otherwise secured to it at its central point a conductor 7, consisting of a metallic core, which extends through the core 3 and communicates with the line-wire 8 through a connecting-wire 9. The end of the conductor 7 opposite the diaphragm 6 is attached to an adjustment-nut 10, which bears against an insulating-washer 11, abutting against the rear side of the head 4. By means of said adjustment-nut the conductor 7 may be drawn outwardly or forced inwardly for the purpose of increasing or diminishing the tension upon the diaphragm 6. The battery 12 has one pole grounded. To

the other is attached a wire 13, connected to a helix 14, wound upon the core 3, the said helix having the windings thereof insulated from each other and from the core. The said helix is connected at its opposite end through a wire 15 to a projecting portion 16 of the diaphragm 6.

The circuit through the transmitter is as follows: Battery 12, wire 13, helix 14, wire 15, diaphragm 6, conductor 7, connecting-wire 9, and line-wire 8. In action vibration of the diaphragm is caused by the sound-waves projected against it through the mouthpiece 2. This causes a longitudinal vibration of the conductor 7 within the magnetic field of force of the core 3 and the lines of the magnetic fields of both the conductor 7 and core 3 are cut. The magnet formed by the core 3 is therefore affected, as well as the current through the helix 14 around said core. This intensifies the action of the circuit and transmits the vibrations to the receiver at the opposite end of the line in a clearer and more distinct manner.

Having now described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a magneto-telephone, a hollow core, a metallic diaphragm secured opposite one of the heads thereof, a metallic bar constituting a conductor secured at one end to said diaphragm and adjustably secured at its other end to a stationary part, whereby the tension of said diaphragm may be positively controlled, a helix upon said core in electrical connection with a battery or generator and said diaphragm, and connections between said conductor and the line-wire.

2. In a magneto-telephone, a hollow core having heads formed upon the opposite ends thereof, one of which is provided with a recess in its outer surface, a metallic diaphragm secured to the recessed head having a projecting portion thereon which extends beyond the periphery of said head, a metallic bar constituting a conductor secured at one end to said diaphragm and adjustably secured at its other end to the head of said core oppo-

site said diaphragm, a battery, a line-wire,  
a helix upon said core having one end in elec-  
trical connection with said battery, and elec-  
trical connections between the other end of  
5 said helix and the projection on said dia-  
phragm and between said conductor and the  
line-wire.

In testimony whereof I have signed this  
specification in the presence of two subscrib-  
ing witnesses.

WILL E. BYRNS.

Witnesses:

J. W. PARKER,  
MOSES R. TURNER.