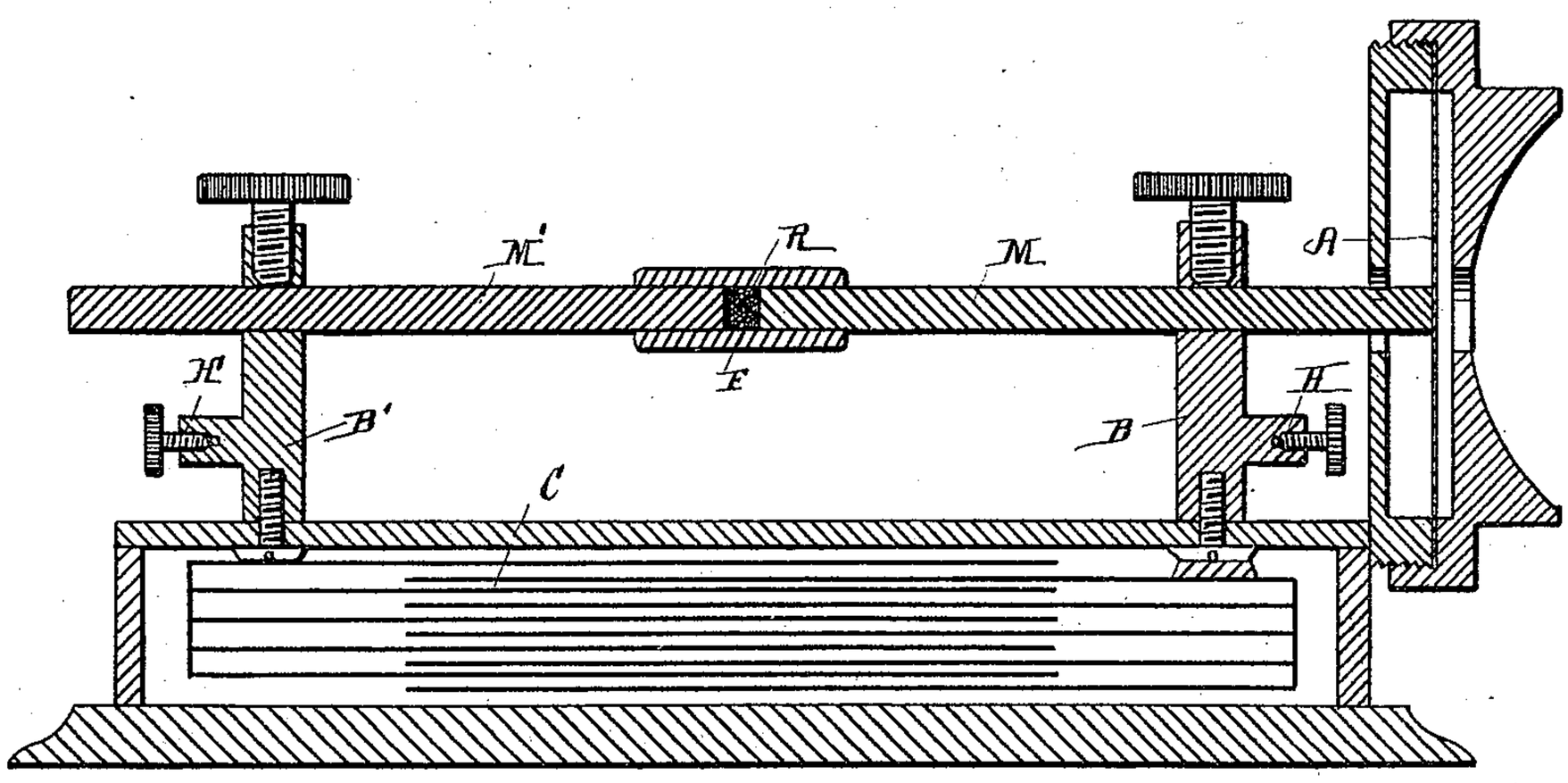
(No Model.)

J. & H. M. GOODMAN.

TELEPHONE TRANSMITTER.

No. 518,142. Patented Apr. 10, 1894.



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JOHN GOODMAN AND HENRY M. GOODMAN, OF LOUISVILLE, KENTUCKY.

TELEPHONE-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 518,142, dated April 10, 1894.

Application filed August 19, 1893. Serial No. 483,505. (No model.)

To all whom it may concern:

Be it known that we, JOHN GOODMAN and HENRY M. GOODMAN, citizens of the United States, and residents of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Telephone-Transmitters; and we do 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, reference being had to the accompanying drawing, and to letters of reference marked thereon, which forms a part of this specification.

The figure is a vertical longitudinal section.

This invention has relation to certain new and useful improvements in transmitters for telephones, and it consists in the novel construction and combination of parts, all as hereinafter described and pointed out in the claim.

It is a well known fact that if an electro magnet is placed in a vertical position, and iron filings are sprinkled upon its surface, they will lie at random until a current is passed through the helix, when they will immediately place themselves in the direction of the lines of magnetic force. If a second energized magnet be approximated to the first, the magnetic field is intensified and the particles of iron will adhere closer together, and the nearer the approximation of the magnets the closer the adhesion.

This invention is designed to provide an instrument operated upon the principle thus stated.

Referring to the accompanying drawing illustrating the invention, the letters M, M′ designate two permanent magnets placed with ends in opposition.

F designates a mass of iron filings or other metal capable of magnetic induction, and retained within a receptacle R between the ends of said magnets.

A is a diaphragm connected with the magnet M.

C is a condenser connected directly with the metallic parts B, B′, which are shown as forming the supports for said magnets.

The magnet M is free to move in its support, and under the influence of sound waves falling upon the diaphragm A, approximates or recedes from the magnet M′, thereby increasing or decreasing the conductivity of the mass of iron filings in the receptacle R. The current passes from the binding screw or terminal H, to the similar part H′, and may be transmitted directly to the receiver, or by means of an induction coil.

The magnets may be simple or compound, permanent or temporary.

To prevent the oxidation of the small particles of iron, the receptacle R may be filled with some non corrosive gas or liquid. The hydrocarbon oils of coal tar answer very well for this purpose.

Iron filings, as above described, placed between the extremities of the magnets, are usually quite efficient for the desired purpose, yet the strength may be increased by the admixture of a small quantity of carbon therewith, in a pulverized or comminuted state.

The condenser acts as an accumulator of, or a reservoir for, the electricity generated by the battery. The battery acting continuously charges the condenser, and when the outgoing passage of the current is, in whole or part, obstructed, the outflow of the current is checked accordingly. When the outflow is less opposed, or becomes more free, there is a more or less impulsive discharge both from the battery and condenser, so that the intermittent, or partially intermittent, intensity of the current is increased.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

A telephone transmitter consisting of two magnets approximating each other in a straight, or nearly straight line, and a mass of metal susceptible of magnetic induction, and in a state of comminution, between the extremities of said magnets, in combination with a vibrating diaphragm mechanically connected at or near its center with an extremity of one of said magnets, and an electrical condenser, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN GOODMAN.
HENRY M. GOODMAN.

Witnesses:
F. L. KLINGMAN,
TOM B. MEGLEMRY.