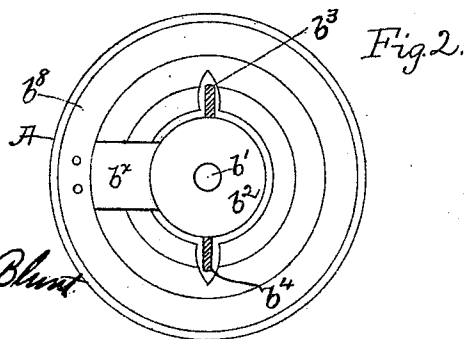
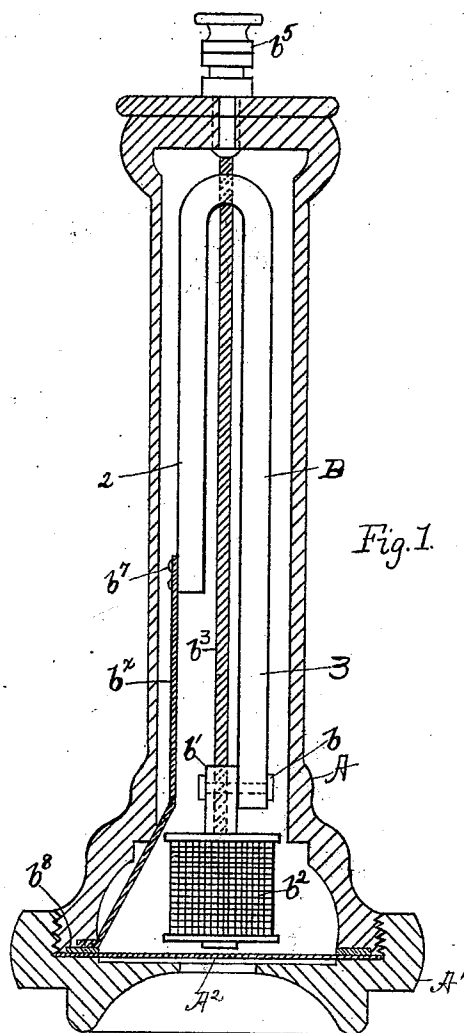


(No Model.)

H. A. CHASE.
MAGNETO TELEPHONE.

No. 516,643.

Patented Mar. 20, 1894.



WITNESSES

Matthew M. Blunt
J. Murphy.

INVENTOR

Henry A. Chase

By Geo. H. Churchill
Att'y.

UNITED STATES PATENT OFFICE.

HENRY A. CHASE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO ALBERT WATTS, OF SAME PLACE.

MAGNETO-TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 516,643, dated March 20, 1894.

Application filed August 12, 1893. Serial No. 482,984. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. CHASE, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Telephonic Instruments; of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention is an improvement in telephones and is herein shown as embodied in that class of instruments commonly known as the handphone.

This invention has for its object to provide
15 an instrument of increased receiving or hearing capacity, in which the sounds or tones transmitted may be more accurately reproduced. In accordance with this invention, the inductive diaphragm is magnetically connected to the exciting magnet, and in the
20 present embodiment of this invention, the exciting magnet is made substantially U-shaped and the said magnet is supported from its rear end, which is attached to the usual case at the diaphragm end, while the other or front
25 end of the exciting magnet is free or unattached from the said inclosing case. This construction permits the inclosing case to expand and contract independent of or without affecting the position of the exciting magnet
30 with relation to the diaphragm. These and other features of this invention will be pointed out in the claims at the end of this specification.

35 Figure 1 is a longitudinal section of a hand telephone embodying this invention, the exciting magnet and its coil being shown in elevation, and Fig. 2, an end view of the instrument shown in Fig. 1, with the mouth
40 piece or cap removed.

The case or shell A and the cap or mouth piece A' of hard rubber or like insulating material, and the magnetic diaphragm A² are and may be of any usual or suitable construction.

45 The case or shell A contains within it an exciting magnet, which, in accordance with this invention, is magnetically connected to the diaphragm A², as will be described. In
50 the embodiment of this invention herein shown, the exciting magnet is a permanent magnet B made substantially U-shaped, one

leg or member as 2 being made shorter than the other member or leg 3, the latter having secured to it as by a bolt b, a soft iron pole
55 piece b' upon which is mounted the usual coil or spool b² having its wires b³ b⁴ connected to the usual binding screws b⁵ only one of which is shown. The leg 2 of the exciting magnet B is magnetically connected to the
60 diaphragm A², which may be accomplished as herein shown, by means of a strip of sheet iron b^x attached to the leg 2 at one end as by screws b⁷, and riveted or otherwise connected
65 to a ring b⁸ of iron, which latter is fitted into a recess in the shell A and against which the diaphragm A² rests when the mouth piece A' is screwed onto the case or shell. I prefer to employ the ring b⁸, but I do not desire to limit
70 my invention to the particular means shown for establishing the magnetic connection between the exciting magnet and the diaphragm. By magnetically connecting the diaphragm A² with its exciting magnet, the hearing or
75 receiving capacity of the instrument is largely increased, and in practice, the tones or sounds transmitted are more accurately produced, and in conversation, the person at the transmitter is readily identified, the receiving instrument appearing to more faithfully reproduce
80 the tones of the speaker without the usual harsh or metallic sounds or tones incident to the handphone now commonly in use. Furthermore, it will be noticed that the exciting magnet is attached to the case or shell
85 A only at or near the diaphragm, that is, at the front end of the case or shell and is not attached to the rear portion of the said shell, so that the said case or shell is free to expand and contract under changes of temperature
90 without affecting the position of the pole piece with relation to the diaphragm. This feature in a telephonic instrument is not herein claimed broadly, as it forms the subject matter of another application, Serial No. 482,984, filed by me August 12, 1893.

The pole piece is adjusted with relation to the diaphragm in the instrument herein shown by means of the screws b⁷.

I claim—

100 1. In a telephonic instrument, the combination with an inclosing case or shell provided with a cap or mouth piece and a diaphragm secured between said cap and shell,

of a substantially U-shaped exciting magnet for said diaphragm wholly located within said shell or case and having legs of unequal length, a magnetic connection attached to the rear end of the shorter leg of the substantially U-shaped exciting magnet and secured to the case or shell to make a magnetic circuit with the said diaphragm, substantially as described.

2. In a telephonic instrument, the combination with an inclosing case, a substantially U-shaped permanent or exciting magnet located wholly within said case, a magnetic strip attached to the rear end of said magnet, a magnetic ring supported by said case and to which the said strip is connected, a cap or mouth piece and an inductive diaphragm in proximity to said mouth piece and magnetically connected to said ring, substantially as described.

3. In a telephonic instrument, the combination with the case A provided at one end with the removable piece A', of the substantially U-shaped permanent or exciting magnet located wholly within the case and composed of legs or members of unequal length, the longer leg having a pole piece secured to it, and the shorter leg being secured to the case at or near the front thereof, and a diaphragm secured in the case substantially at right angles to the two legs of the magnet, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY A. CHASE.

Witnesses:

JAS. H. CHURCHILL,
J. MURPHY.