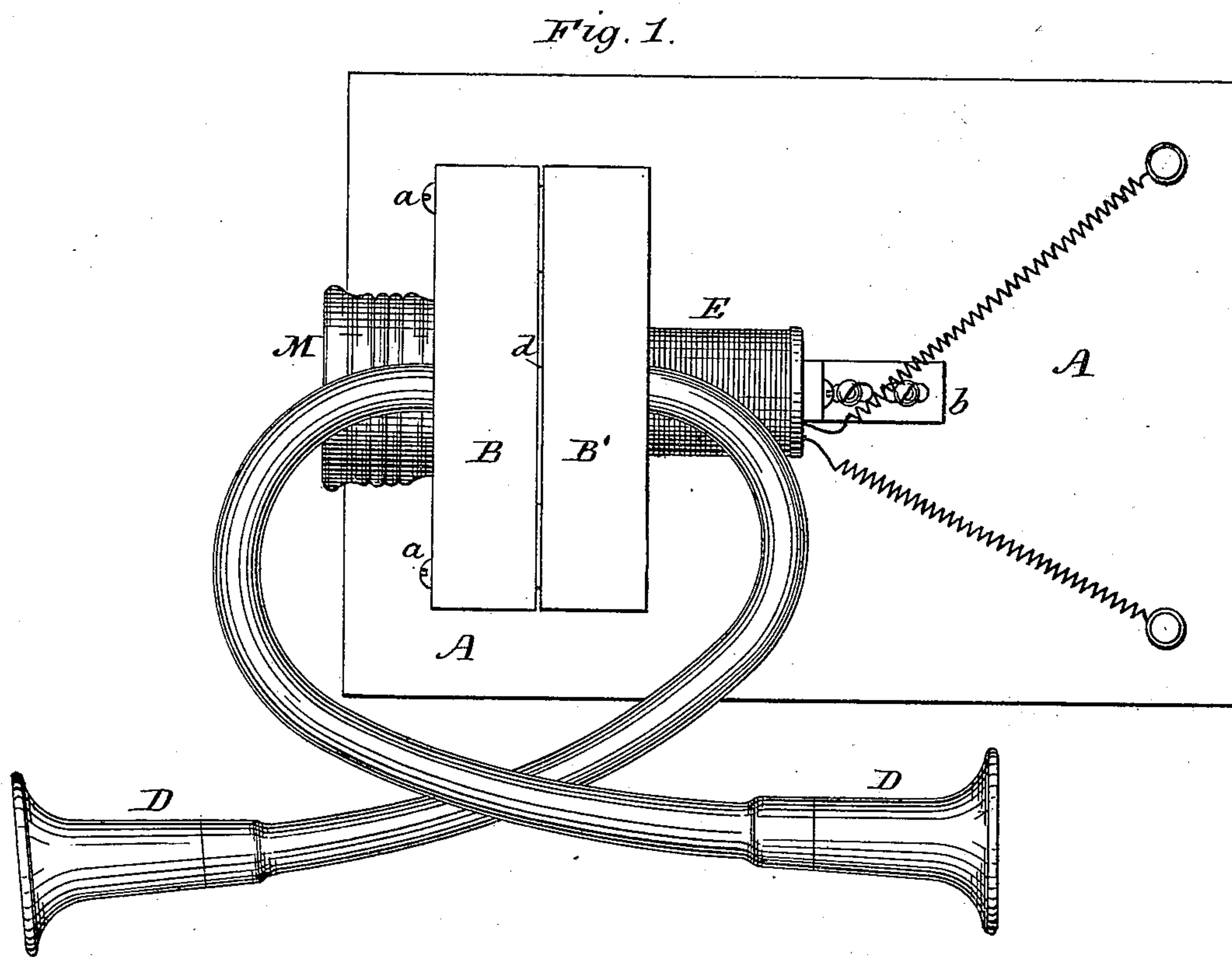
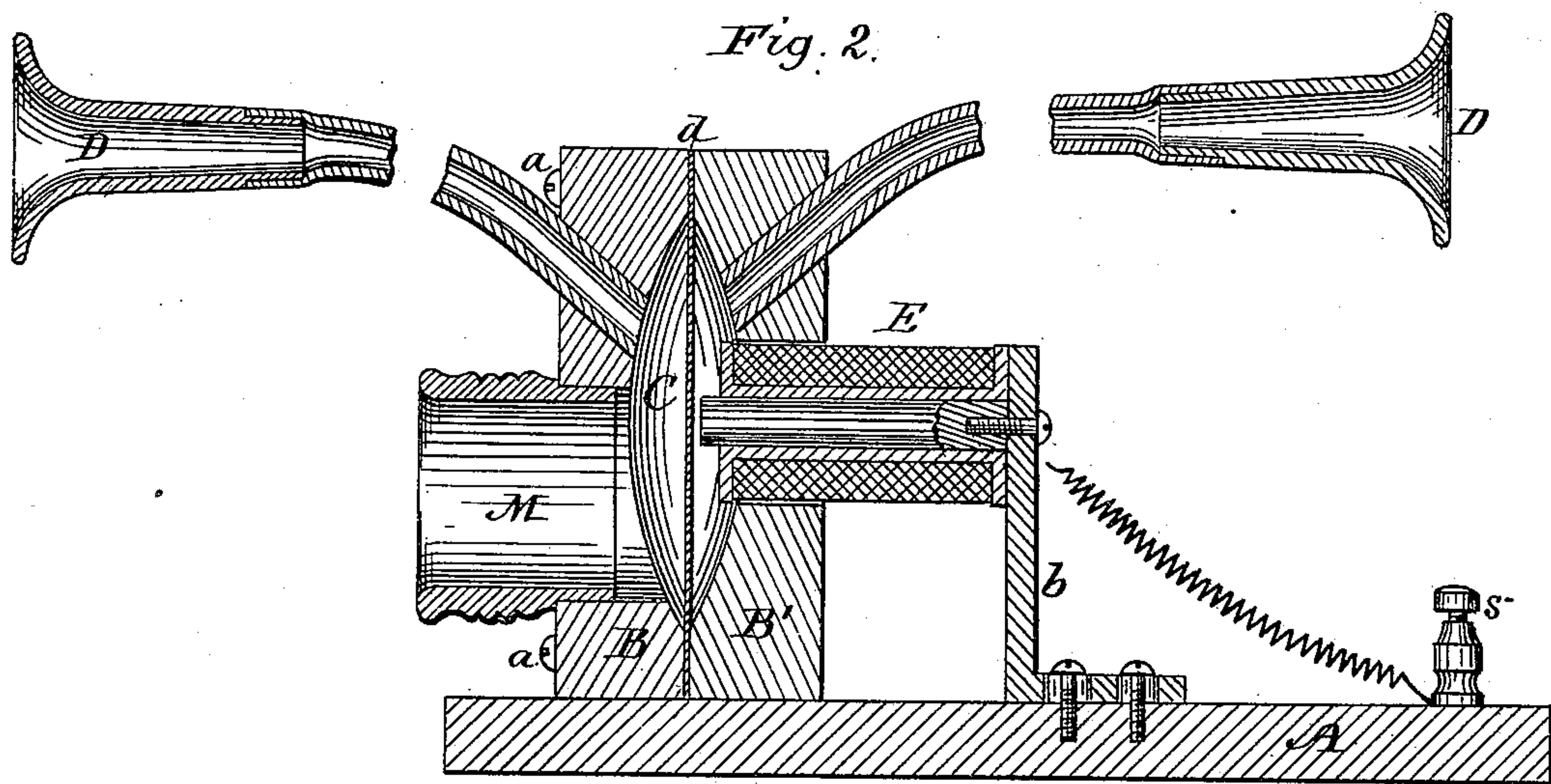


A. G. BELL.
SPEAKING TELEPHONE.

No. 250,704.

Patented Dec. 13, 1881.



Witnesses:
C. J. Hedrick,
Philip Mauro

Inventor:
Alexander Graham Bell
by A. F. O'Connell
his attorney

UNITED STATES PATENT OFFICE.

ALEXANDER G. BELL, OF WASHINGTON, DISTRICT OF COLUMBIA.

SPEAKING-TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 250,704, dated December 13, 1881.

Application filed December 26, 1879.

To all whom it may concern:

Be it known that I, ALEXANDER GRAHAM BELL, of Washington, District of Columbia, have invented an Improvement in Speaking-
5 Telephones, of which the following is a specification.

This invention relates to telephones having an ear-piece or sound-conveying tube in addition to the ordinary mouth-piece; and it consists in arranging the said ear-piece or sound-
10 conveying tube on the opposite side of the diaphragm or vibrating plate from the mouth-piece. Additional sound-conveying tubes communicating with the diaphragm-chamber on
15 the same or on opposite sides of the diaphragm can be used.

In the accompanying drawings, which form a part of this specification, Figure 1 is a plan
20 and Fig. 2 a sectional view of a telephone embodying the invention.

A is the table to which the instrument is attached.

B B' are two blocks of wood held together by screws *a*, and between which is clamped a
25 diaphragm of thin metal, *d*, as shown. The blocks B B' are, one or both of them, secured to the table by screws. (Not shown.) Their inner faces are concaved, as shown, to form a chamber, C, within which the diaphragm may
30 vibrate. The front block, B, has an opening for the insertion of the mouth-piece M, and the rear block, B', has an opening for the insertion of one end of an electro-magnet, E, the other end of which is made fast to a bracket, *b*, screwed to the table, as shown. The
35 electro-magnet E has a polarized core. Two screw-cups in the table, connected with the electro-magnet by wires, are marked *s s*.

D D are two trumpet-shaped ear-pieces, connected by flexible tubes with the chamber on
40 either side of the diaphragm, the tubes for that purpose passing through openings or slots in the blocks B B'.

The operation is as follows: The person about to talk with the telephone holds one of
45 the ear-pieces D to his ear and talks in front of the mouth-piece M in the ordinary manner, pinching the flexible tube, however, while he himself is talking to prevent the unpleasant
50 sensation of hearing his own voice through the instrument; but when receiving a reply through the same instrument as a receiver he releases the tube from the extra pressure of
55 the fingers and hears the return-message through the ear-piece at his ear.

It is obvious that conversation can be carried on more readily than when the operator alternately speaks and listens at the mouth-
piece.

It is also obvious that where two ear-pieces
60 are attached to the telephone, as shown in the drawings, two persons can receive a message at the same time. So three or more tubes might be made to communicate with the chamber within the instrument; but for ordinary
65 purposes one tube provided with an ear-piece in addition to the mouth-piece is sufficient, and it is immaterial whether the tube communicates with the chamber in front of or in rear
70 of the diaphragm.

When more than one ear-piece are attached it may be convenient for the operator to employ one of them for a mouth-piece.

Having thus fully described my invention and the manner in which the same is or may
75 be carried into effect, what I claim, and desire to secure by Letters Patent, is—

A telephone in which the receiving and transmitting apertures are placed upon opposite sides of the vibrating plate and provided
80 with devices for communicating with the ear and mouth, respectively.

ALEXANDER GRAHAM BELL.

Witnesses:

C. J. HEDRICK,
PHILIP MAURO.