(No Model.)

2 Sheets—Sheet 1.

J. LOWTH.

TELEPHONE.

No. 309,474. Patented Dec. 16, 1884.

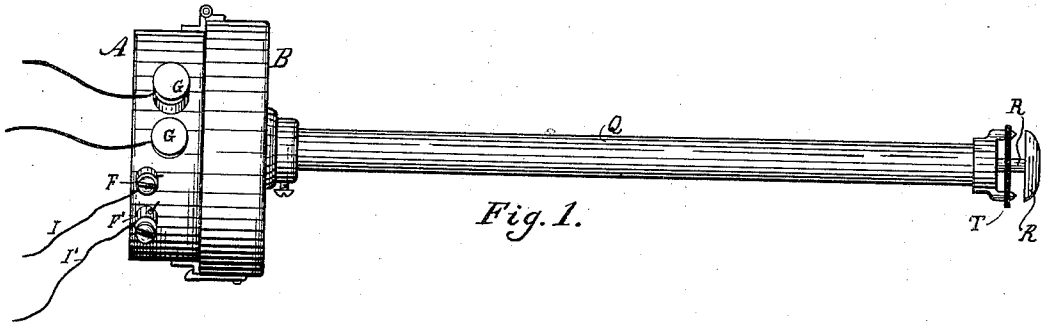


Fig. 1.

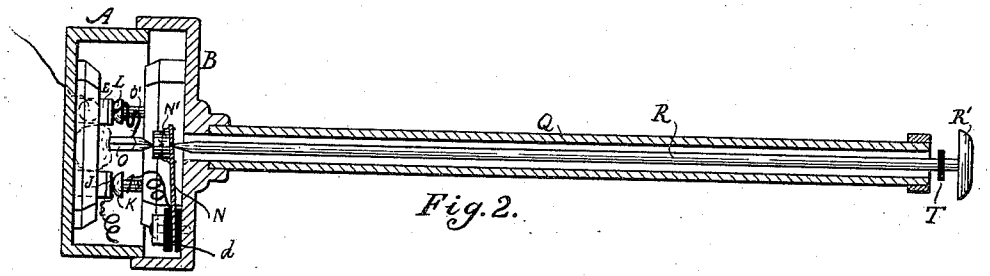


Fig. 2.

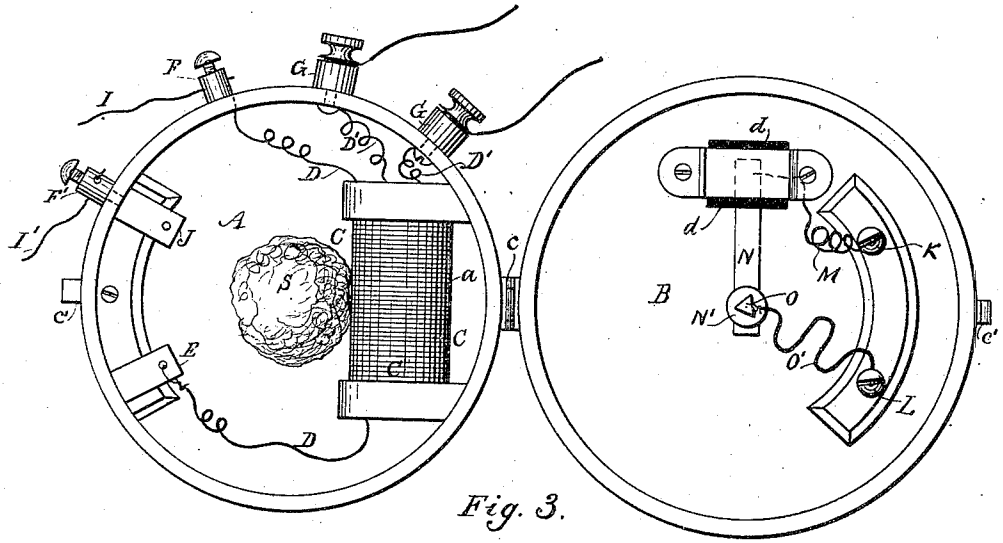


Fig. 3.

Witnesses:
F. B. Halpenny
S. J. Morse

Inventor:
James Lowth.
per F. F. Hanner
his Attorney.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.)

2 Sheets—Sheet 2.

J. LOWTH.

TELEPHONE.

No. 309,474. Patented Dec. 16, 1884.

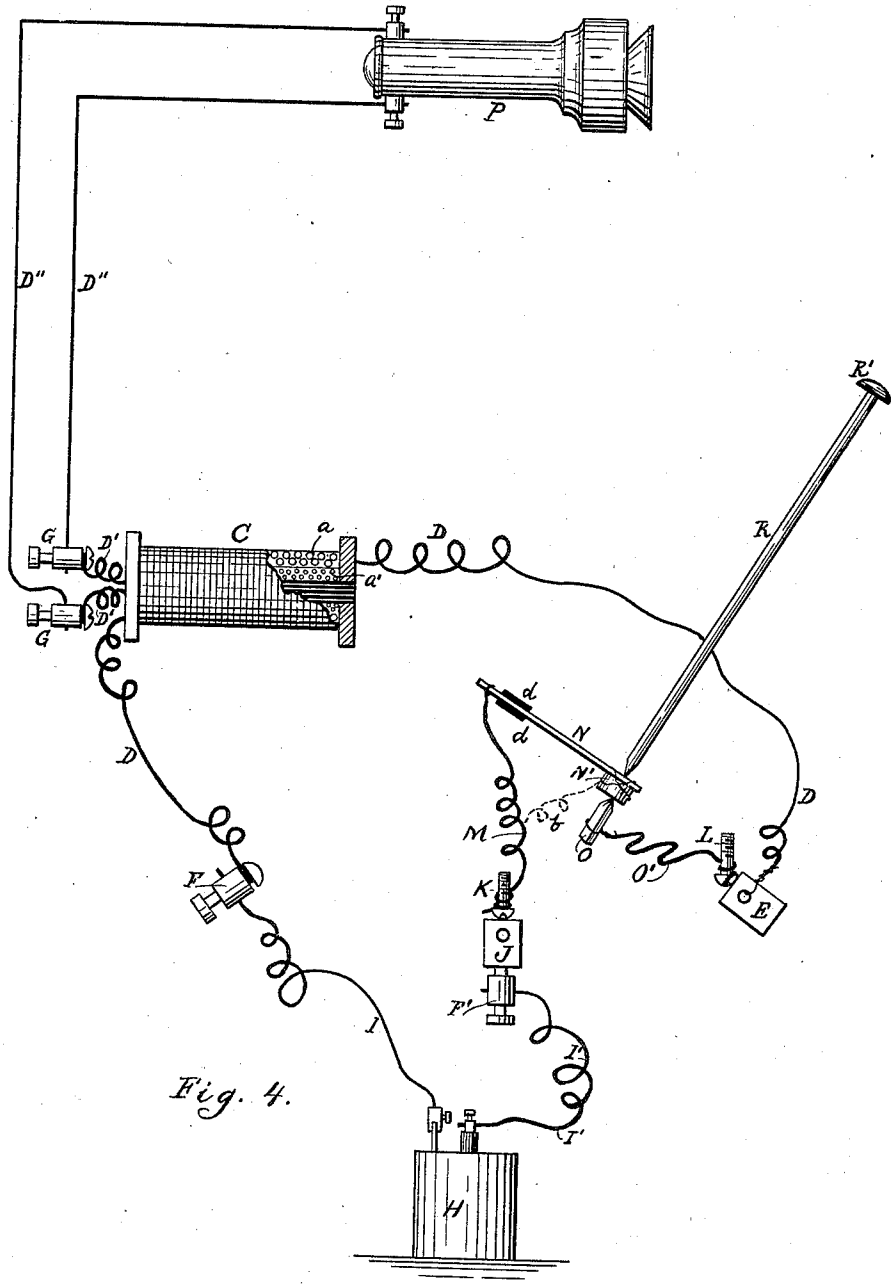


Fig. 4.

Witnesses:
J. B. Halpenny.
P. J. Morse

Inventor:
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per F. F. Warner.
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UNITED STATES PATENT OFFICE.

JAMES LOWTH, OF CHICAGO, ILLINOIS.

TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 309,474, dated December 16, 1884.

Application filed October 25, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES LOWTH, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Telephones, of which the following, in connection with the accompanying drawings, is a specification.

My present invention relates to a new and useful improvement in the art of working a battery-telephone, and is based upon the idea or discovery that the exterior parts of the human body in the vicinity of the vocal organs will act upon the electrodes of a telephone through the medium of a solid body connected to said telephone and placed in contact with such portions of the body in such manner as to work the telephone the same way as do the actions of the vocal organs through the medium of the atmosphere during the heretofore customary way of talking into the transmitter. This fact or discovery I utilize in carrying out my new mode of working a battery-telephone by the employment, in connection with the electrodes of the transmitter, of a suitable solid body arranged in connection with one of the electrodes, and adapted to be held in contact with the throat of the person using the transmitter; and my invention may be said to consist in the method, hereinafter described, of working a battery-transmitter by contact with the exterior of the throat of the speaker of a solid body connected with one of the electrodes, and operating to influence it apparently in the same manner that it would be influenced by the sound-waves of articulate speech induced by the action of the vocal organs and conveyed to said electrode through the medium of the atmosphere.

To enable those skilled in the art to understand and practice my invention, I will now proceed to more fully explain it, referring by letters to the accompanying drawings, which form part of this specification, and in which I have illustrated an apparatus for carrying out my invention in the art, such as I have so far employed in successfully practicing it.

In the drawings, Figure 1 is a side view of a battery telephonic transmitting apparatus adapted to the carrying into effect of my invention. Fig. 2 is a vertical central longitudinal section of the transmitter. Fig. 3 is a side elevation of the interior sides of the box and its cap or cover, and Fig. 4 is a chart showing the circuits and their relation to some of the principal parts of the transmitter.

Like letters of reference in the different views indicate the same parts.

A represents a small box, and B is a cap or lid applied thereto.

C is an induction-coil having primary and secondary helices *a* and *a'*, respectively.

D is a wire entering and forming the helix *a*, and D' is a wire entering and forming the helix *a'*.

E is a plate, and F a binding-post to which the ends of the wire D are respectively attached.

G G are binding-posts to which the ends of the wires D' are respectively attached.

H is a battery, and I I' are the battery-wires. The wire I is carried to the post F, and the wire I' to a post, F'.

J is a plate in connection with the post F', and K is a contact-screw in contact with the plate J.

L is a screw in contact with the plate E.

M is a wire extending from the screw K to a comparatively stiff metallic spring or yielding tongue, N, on which is a carbon button or electrode N'.

O is an electrode made, by preference, of a piece of hard-pointed steel, its point resting lightly against the button N' and connected by the wire O' to the screw L. The primary circuit is through the helix *a* and the parts located between its ends and in connection therewith and with each other, as indicated in Fig. 4. The secondary circuit is through the helix *a'*, its wire D', the posts G G, a line-wire or metallic circuit, D'' D'', and a receiver, P, the latter of which may be any well-known or suitable telephonic receiver or device for receiving and delivering the message transmitted.

Q is a tubular handle entering the cap or cover, B, and R is a rod or vibrator passing freely through the handle Q without contact therewith. The inner end or point of the rod R rests on the spring N, preferably in an indenture therein, and its upper or outer portion passes through a flexible soft-rubber strip, T, and is secured thereto.

R' is a button on the outer end of the rod R,

both of which parts may consist of wood. I should here state that the rod R performs the function of a mechanical vibrator, for the purpose of communicating to the parts acoustically affected, particularly to the button N′ and point O, those movements of the external surface of the throat which are produced by exercising the vocal organs, and that, therefore, this rod, in order that the best results may follow, should be supported yieldingly, or in such a manner as to respond truly to the usual external vibrations, and convey them accurately to the button N′. In the example shown the spring N, (which is intended to be in constant contact with the rod R,) in conjunction with the rubber T, serves principally as such support, and only incidentally as part of the primary circuit when the latter is carried to the said spring instead of directly to the said button. It is immaterial, therefore, where the support of the rod R be located, so long as it performs the functions referred to; but when located away from the button N′ the latter should be located to respond to the vibrations of the rod R. The point O is in the primary circuit, and acts in unison with the vibrations of the rod R, and the wire O′ serves as a spring to hold the said point lightly against the button N′ for that purpose; but any other spring will perform the same function. For example, in conjunction with the wire O′, but only as auxiliary thereto, I employ a small wad, ball, tuft, or cushion of unspun cotton, S, or other suitable fibrous material, on which the point O rests lightly when the cap B is closed.

To use this apparatus or device for the purpose of carrying out my invention the speaker holds it in one hand and places the button or presser R′ lightly against his throat, and the person to whom the words are spoken holds the ordinary receiver at the other end of the line to the ear in the usual manner. It is to be understood that both a transmitter and a receiver may be employed at each end of the line.

It will be seen that in practicing the transmitting of articulate speech with a battery-telephone according to my improvement in the art (with either the form of apparatus shown or some other form adapted to work on the same principle) I am enabled to telephone speech without using the sound-waves usually conveyed in atmosphere to work the transmitter, and can work the electrodes by a more positive actuator in the form of a solid conductor; also, that, by reason of working the vibratory rod (which moves one of the electrodes) by the bodily movements of those exterior parts of the throat with which said rod is in physical contact, I am enabled to produce with greater certainty and forcibleness of action all those variations in the relationship of the electrodes that are necessary to effect a perfect transmission by telephone of articulate speech.

Having so fully explained the nature of my invention that those skilled in the art of telephony can understand it and can practice it, (either by the use of precisely the form of apparatus I have shown or with an apparatus of modified construction,) what I claim as new, and desire to secure by Letters Patent, is—

1. As an improvement in the art of telephony, the hereinbefore-described mode or method of working a battery-transmitter, which consists, essentially, in operating the electrodes thereof by the actions upon a solid body connected with said electrodes (and also held in contact with the body of the speaker) of those exterior parts of the speaker's body which will vibrate whenever sounds are uttered by the person using the telephone.

2. As an improvement in the art of telephony, the hereinbefore-described mode or method of working a battery-transmitter, which consists, essentially, in producing the electrical changes in the current necessary to the transmission of articulate speech through the medium of a solid body connected with such transmitter and also placed in contact with the body of the speaker by those vibrations of exterior portions of the body which accompany the utterance of sounds.

In testimony that I claim the foregoing as my own I hereto affix my signature in presence of two witnesses.

JAMES LOWTH.

Witnesses:
F. F. WARNER,
J. B. HALPENNY.