

(No Model.)

2 Sheets—Sheet 1.

T. J. PERRIN.
TELEPHONIC APPARATUS.

No. 309,357.

Patented Dec. 16, 1884.

Fig. 5.

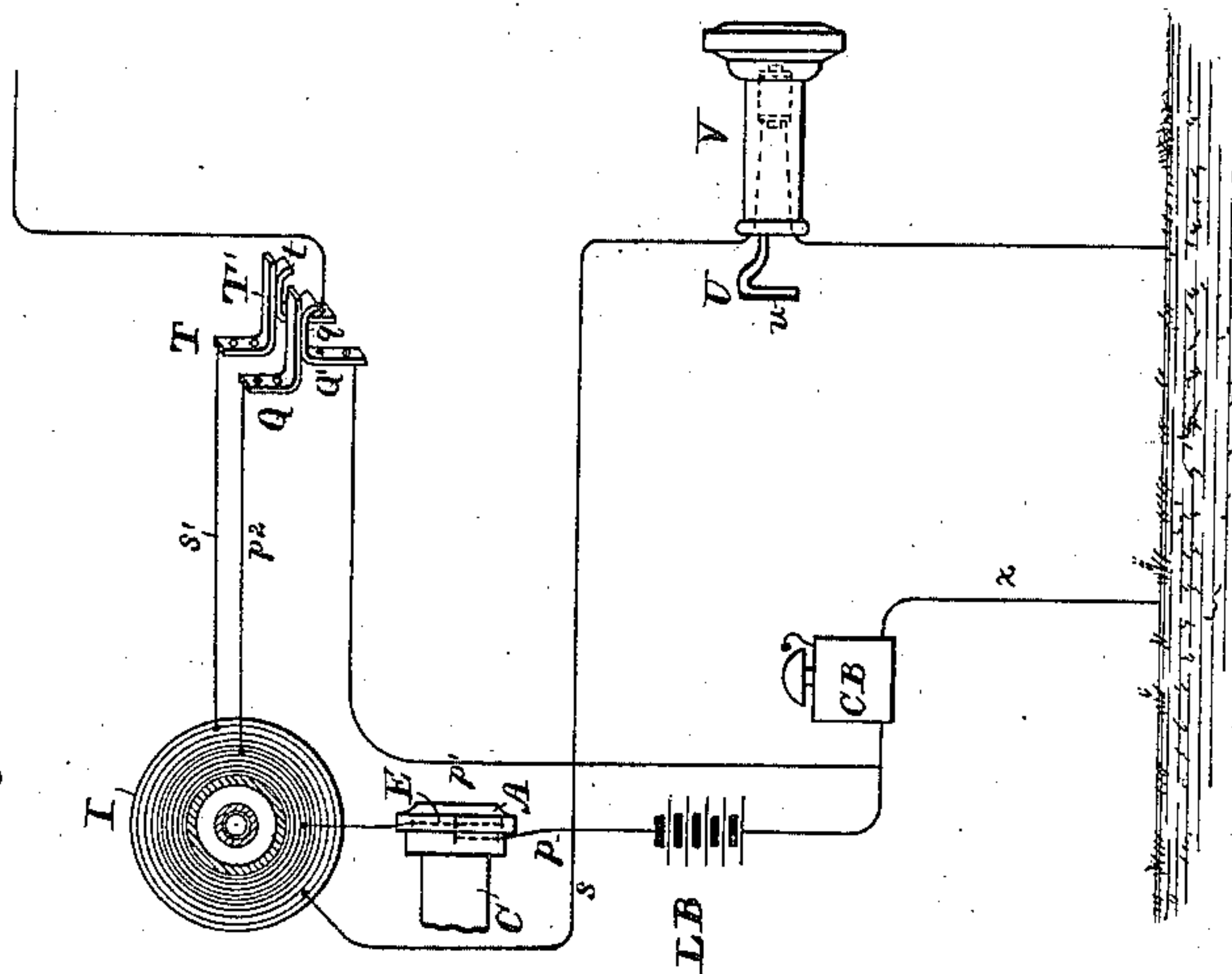


Fig. 4.

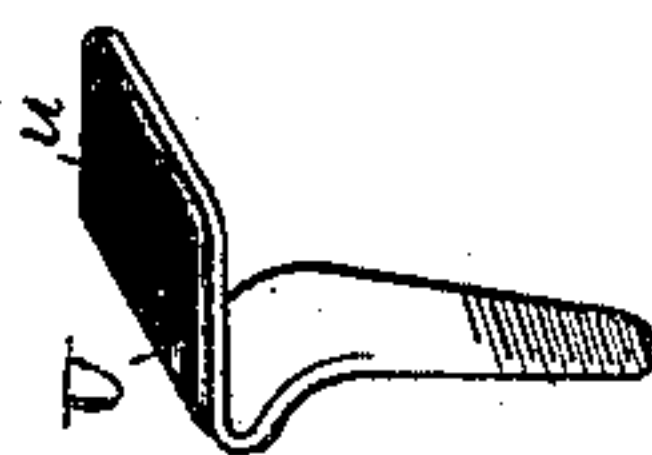
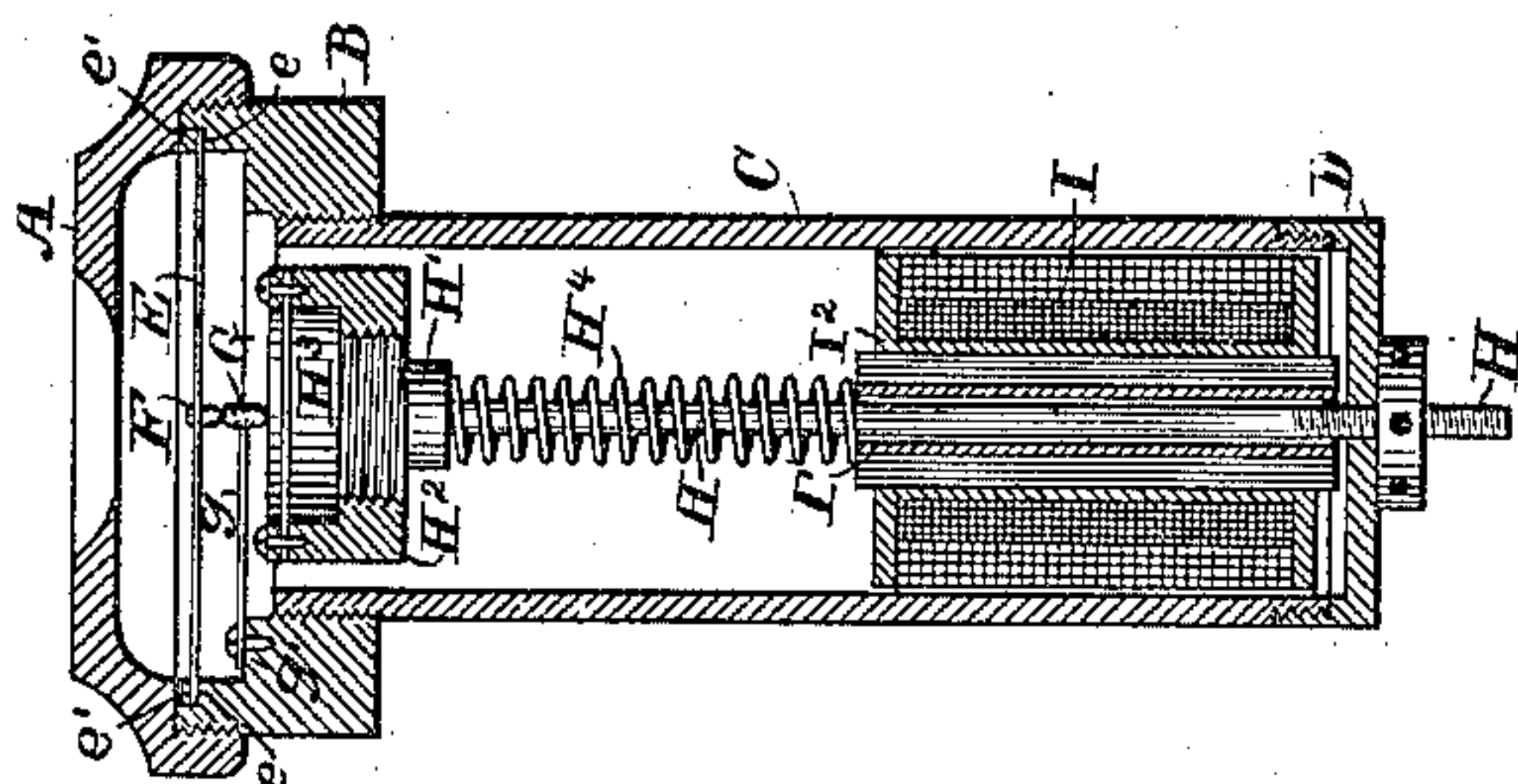


Fig. 1.



WITNESSES

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Fig. 3.

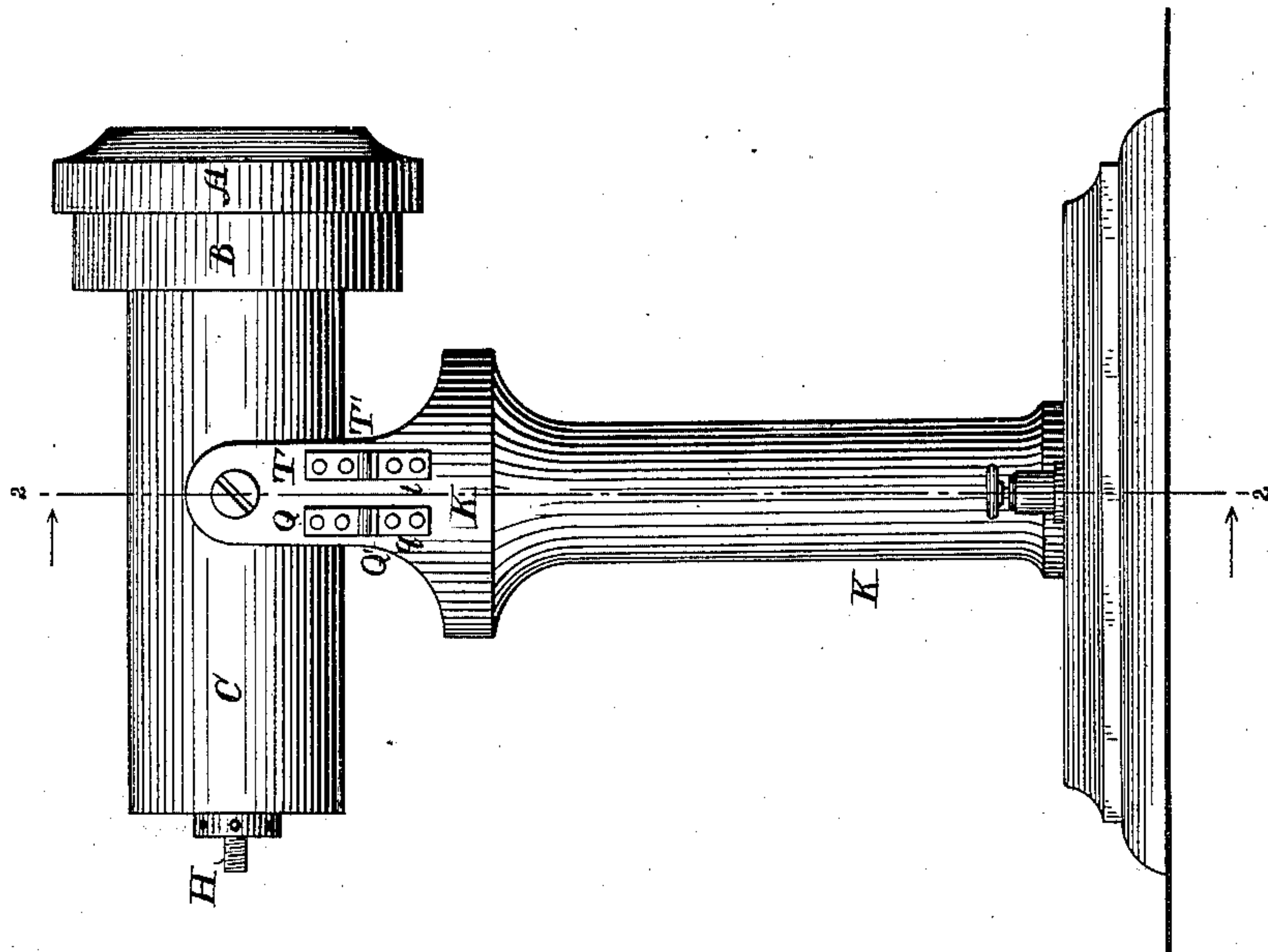
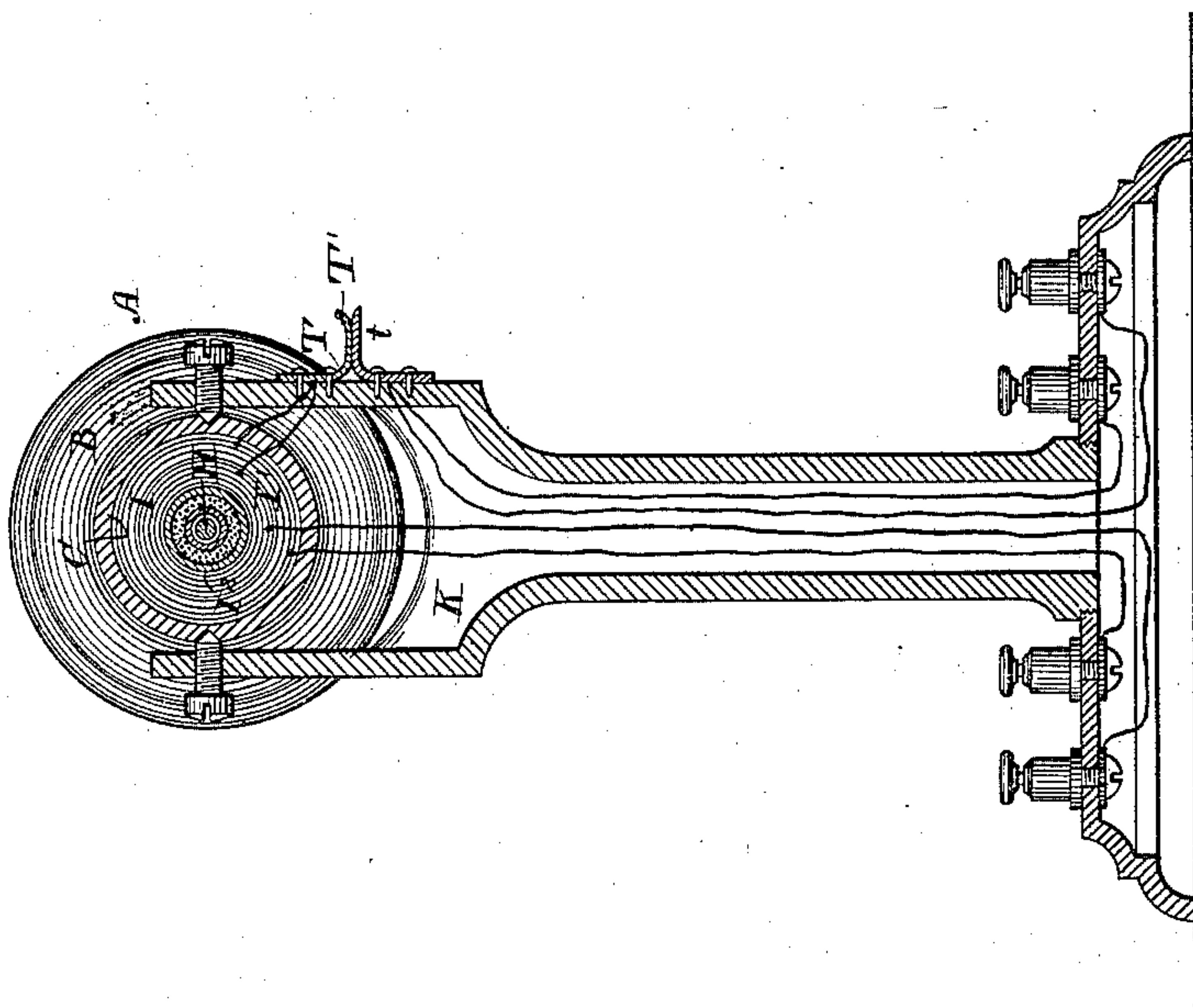


Fig. 2.



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UNITED STATES PATENT OFFICE.

THOMAS J. PERRIN, OF NEW YORK, N. Y., ASSIGNOR TO THE NATIONAL IMPROVED TELEPHONE COMPANY, OF NEW ORLEANS, LOUISIANA.

TELEPHONIC APPARATUS.

SPECIFICATION forming part of Letters Patent No. 309,357, dated December 16, 1884.

Application filed September 20, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. PERRIN, of the city, county, and State of New York, have invented certain new and useful Improvements in Telephonic Apparatus, of which the following is a specification.

My invention relates to the organization of the transmitter with a supporting frame or stand, and to the switches and circuits for throwing the receiving-telephone into and out of circuit.

In the accompanying drawings, Figure 1 is a transverse longitudinal section through a transmitting-telephone; Fig. 2, a transverse section through the transmitter and its supporting-stand on the line 2 2 of Fig. 3. Fig. 3 is a side elevation of the transmitting-instrument and its supporting-stand. Fig. 4 is a detailed view of the switch plate or plug carried in the end of a receiving-telephone, and Fig. 5 is a diagram view illustrating the circuit-connections.

The particular transmitter which I have illustrated and will now describe is one which I prefer to use, though my invention is not, of course, limited to the construction of the transmitter, *per se*.

In Fig. 1 the case of the instrument is shown as composed of four sections which are united by screw-joints. A is the mouth-piece; B, the enlarged end or head piece of the cylindrical portion of the case on which the mouth-piece A is screwed. C is the cylindrical body of the case, and D the cap or cover for the end of the part C. The diaphragm E is seated in a depression or annular socket, *e*, in the upper face of the section B of the casing. Over the diaphragm an elastic washer, *e'*, is laid and the mouth-piece screwed down upon it. One of the transmitting-electrodes, F, is carried centrally upon the diaphragm in the ordinary way, while the other electrode, G, is carried on the end of a spring-arm, *g*, which is shown as bolted on an annular ledge or shoulder, *g'*, formed in the section B below the diaphragm. The section B is secured upon the end of the cylindrical section C, as shown.

The electrodes F G are maintained in proper contact, and are adjusted by means of the following apparatus: A rod, H, projects through

the end piece, D, of the casing, its projecting end being screw-threaded and provided with an adjusting-nut. The inner end of this rod carries an enlarged head, H', which screws into an enlarged block, H², formed with a socket or recess in its upper face. An elastic device, H³, is stretched or secured across the depression or socket in the top of the piece H², as illustrated. The head or block H² is normally pressed forward toward the electrode G by a coil-spring, H⁴, which encircles the rod H, as clearly shown. By adjusting the nut on the threaded extension of the rod H, the yielding device H³ may be adjusted against the electrode G, which is supported upon the spring-arm *g*, so as to bring the electrodes F G in suitable contact. The induction-coil I of the transmitter is mounted in the end of the section C of the casing, as illustrated in Fig. 1. The core I' of the induction-coil is made tubular and envelops the adjusting-rod H, while the coils of the induction-coil are wound in the ordinary way on a spool or bobbin, I², which is provided with strong end pieces or heads which fit tightly within the casing C. The coil-spring H⁴, which actuates the head H², which serves to maintain the contact of the electrodes, bears at one end against the core of the induction-coil.

In order that the position of the mouth-piece may be changed to suit the different heights of the persons using the instruments, I pivot it in bearings in an upright supporting-frame, K, as clearly illustrated in the drawings. The supporting-frame is made hollow, and can be constructed of hard rubber, vulcanized fiber, or any other suitable material.

In order that the receiving-telephone may be carried on the same support as the transmitter, so that all the parts will be compactly organized for convenience of use on desks or in other places without securing them against a wall or support, as is usually the case, I employ the following switch devices and circuits, which are represented quite fully in Figs. 2, 4, and 5. The primary circuit of the induction-coil is connected through the transmitting-electrodes by a wire, *p*, with the ordinary local battery, L B, thence by wire *p'* to the under plate, *q*, which normally and elastically rests

in contact with the upper plate or jaw, Q, of the spring-jack Q'. From the jaw Q a wire, p^2 , connects with the other end of the induction primary of the coil. The transmitting-contacts are shown in outline separate from the induction-coil in the diagram view, Fig. 5, merely for convenience of illustration, and because the particular form of transmitter is immaterial, so far as the switch devices are concerned. The secondary coil is connected on one side with the earth by a wire, s, in which the receiving-telephone V is placed, and on the other side, by a wire, s', with the upper plate, T, of a spring-jack, T'. The lower plate or jaw, t, of this spring-jack is normally in yielding contact with the plate T, and is connected directly to the main line. With this condition of circuits and the apparatus as illustrated in Fig. 5, the primary circuit will be closed, and sounds uttered in the mouth-piece of the transmitter will be electrically transmitted through the secondary circuit to line in the ordinary way.

The telephone V is furnished with a hooked plate or plug, U, in its end, of a width sufficient to plug to both switches Q T simultaneously, these switches being arranged side by side for that purpose. The upper surface of this plate, u, is covered with insulating material, while its under side is a conductor. If the plug U be thrust between the jaws Q q and T t of the spring-switches Q' T', the primary transmitting-circuit will be interrupted by the insulating-face u, and the main line will be connected through the under face of the plug, jaw q, and line p' , through the call-bell C B, and then to earth by the line x. In this condition the station illustrated in the drawings may be called. The switches Q' T' are shown in Fig. 3 as secured upon the upper part of the supporting-frame K, and the circuit-connections are made within the hollow frame, as fully illustrated in Fig. 2.

The receiving-telephone, when not in use, is suspended by the switches Q' T', into which

the hook or plug U is thrust. When the plug is thrust into the switch T' only, the station is cut out of circuit altogether.

No claim is made in this application to the construction of the transmitter, *per se*, as that constitutes the subject-matter of the original application, filed March 3, 1884, No. 122,823, of which this case is a division.

I claim as my invention—

1. The combination, substantially as set forth, of the transmitter, a supporting-frame in which said transmitter is pivoted, a receiving-telephone provided with a switch plug or plate, the switch devices Q' T' on the supporting-frame, and the circuit-connections.

2. The combination, substantially as set forth, of a transmitting-telephone, the induction-coil carried in the case of the telephone, a supporting-frame in which the transmitter is pivotally mounted, the switch devices Q' T', the receiving-telephone, its plug by which it may be suspended in the switch devices, and the circuit-connections.

3. The combination, substantially as set forth, of the spring-jack Q', the receiving-telephone, the circuit-connections, and the plug or hook U, carried by the telephone, and having one face covered with insulating material.

4. The combination, substantially as set forth, of the transmitting-telephone, the induction-coil carried in the case of the telephone, the hollow supporting-frame in which the transmitter is pivoted, the circuit-wires connected and arranged within the hollow frame, the receiving-telephone, the switch devices Q' T', from which the telephone may be suspended, and the primary and secondary circuits and connections.

In testimony whereof I have hereunto subscribed my name.

THOMAS J. PERRIN.

Witnesses:

JNO. R. JUDEN,
JOHN JUDEN.