

(No Model.)

T. J. PERRIN.
INDUCTION COIL.

No. 329,772.

Patented Nov. 3, 1885.

Fig. 1.

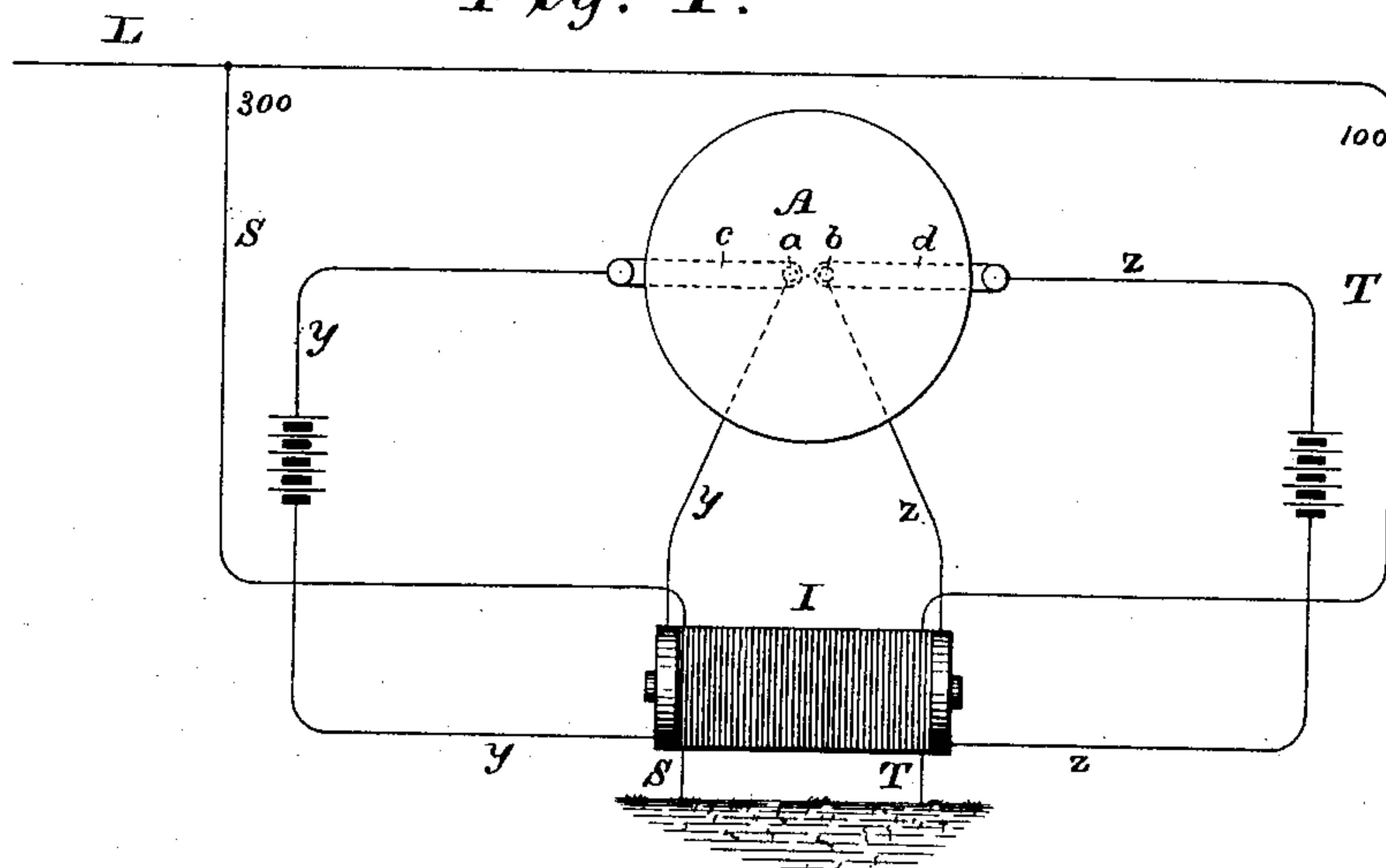


Fig. 2.

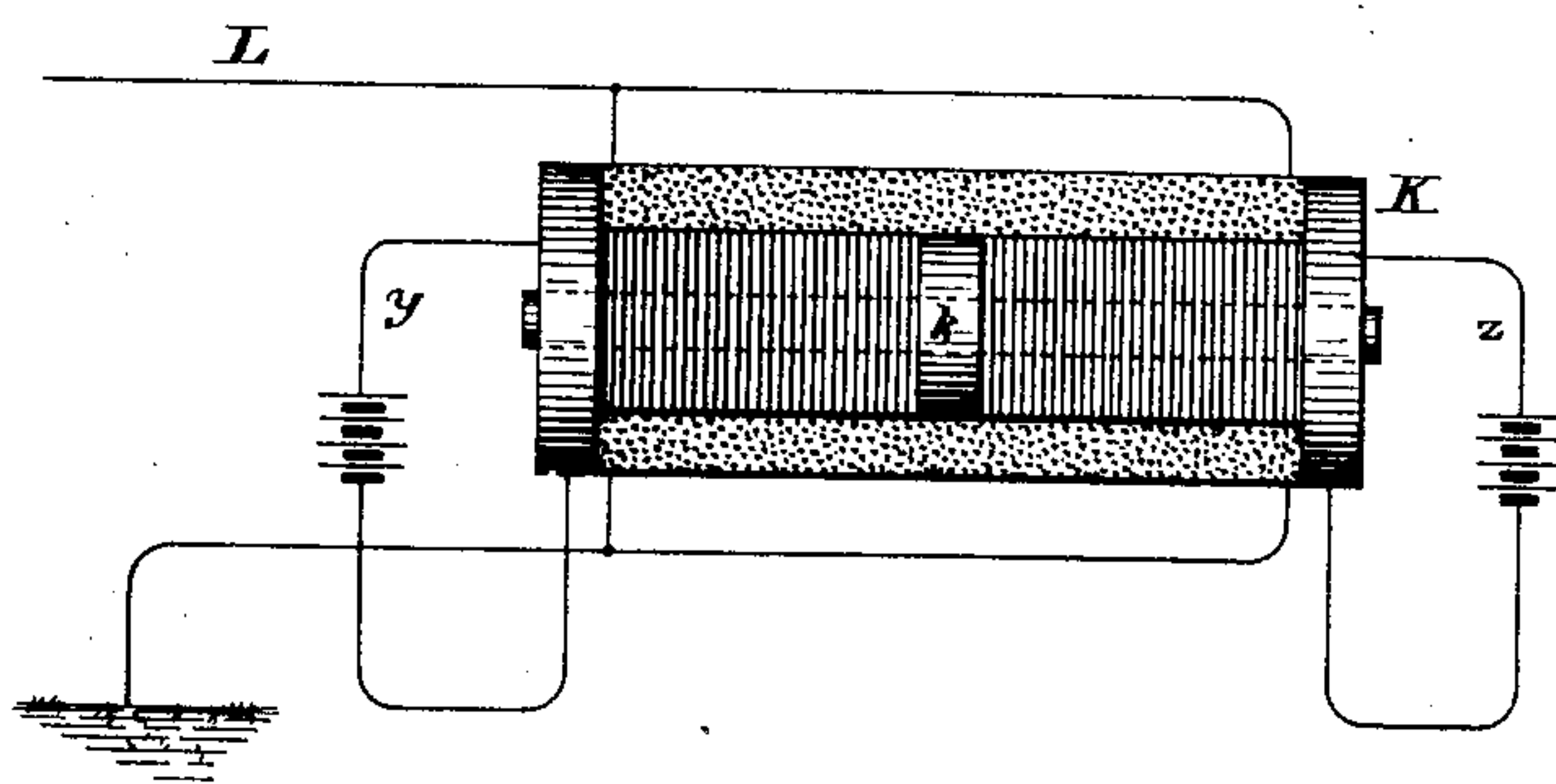


Fig. 3.

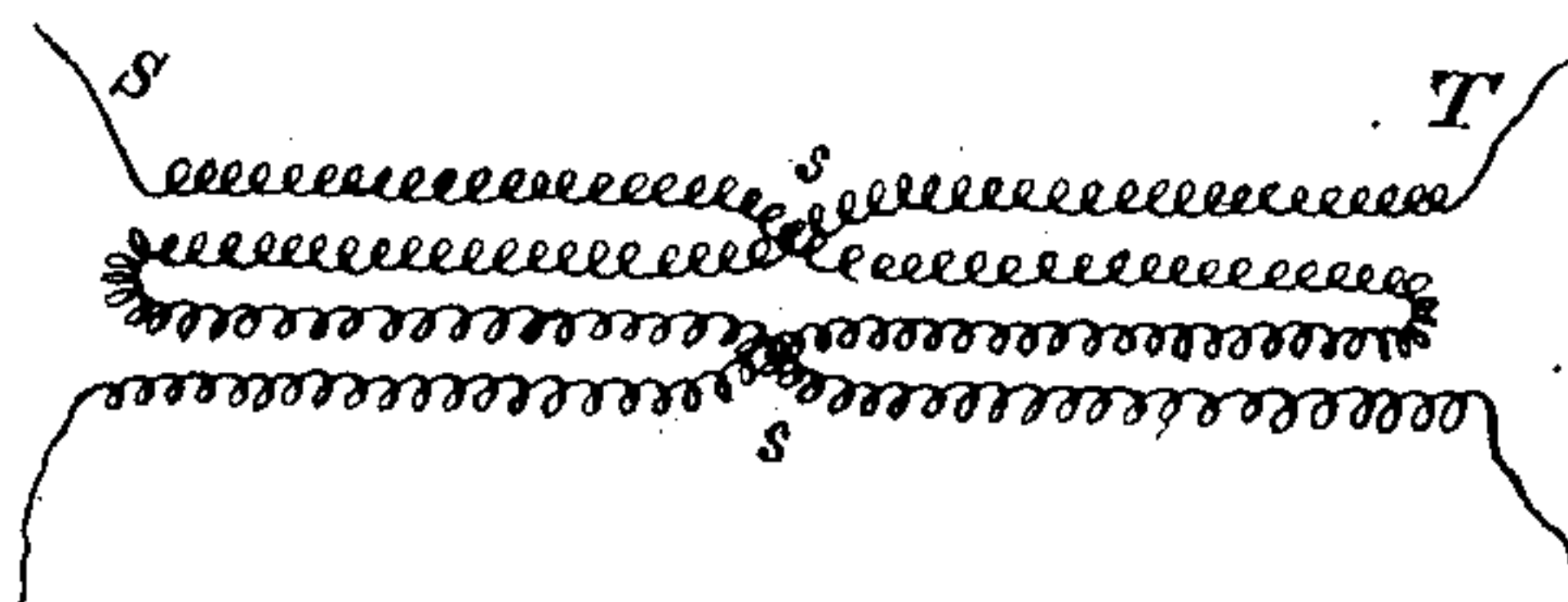
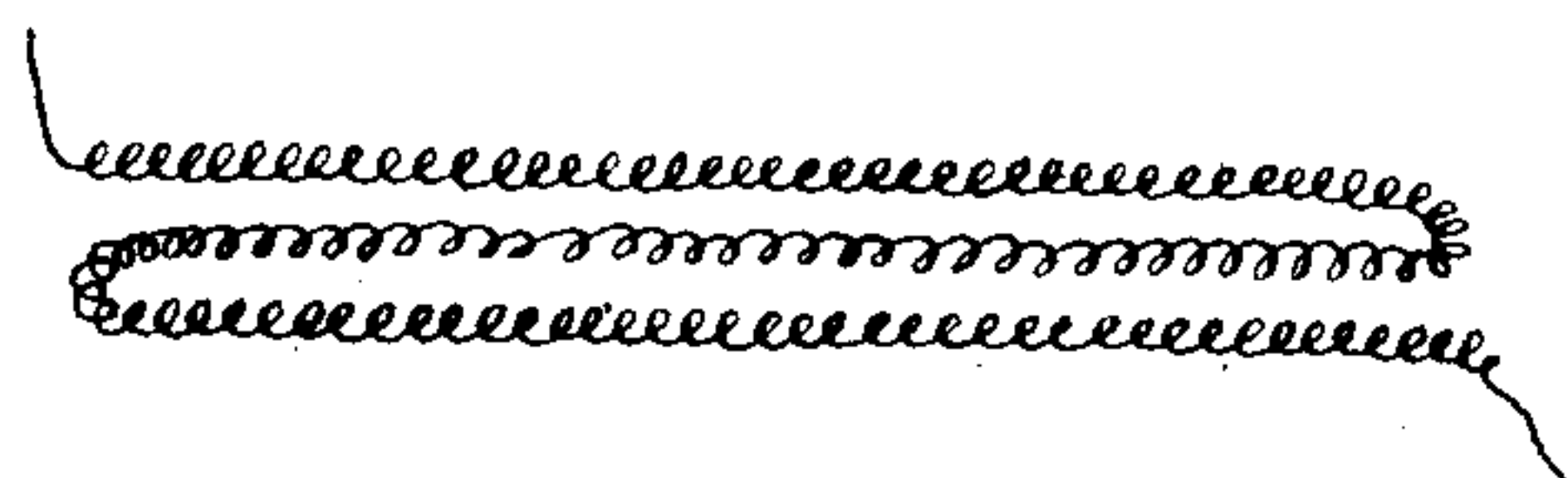


Fig. 4.



WITNESSES

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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, LA.

INDUCTION-COIL.

SPECIFICATION forming part of Letters Patent No. 329,772, dated November 3, 1885.

Application filed September 19, 1884. Serial No. 143,489. (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 Induction-Coils, of which the following is a specification.

The object of my invention is to produce an induction-coil in which the combined action of two or more primaries is thrown upon a main line; and so far as part of my invention is concerned I may employ a secondary wire for each primary, or I may employ a single secondary to be acted upon by the several primaries, and when more than one secondary wire is used they may be of equal resistance, but of different sizes or electrical capacity, so that currents of different tensions may be thrown upon the line, if desired.

This invention is designed specially for use in connection with telephonic transmission of articulate speech, but is not limited to such an application. It is shown so organized in application for Letters Patent filed by me on the 25th July, 1884, No. 138,774, in which secondary coils of different electrical capacity and of equal resistance, as above mentioned, are employed in connection with a peculiar form of receiver specially adapted for the purpose.

In the accompanying drawings, Figure 1 is a diagram view illustrating a telephonic diaphragm, the induction-coil, and its circuits. Fig. 2 is a view illustrating the construction of the induction-coil. Fig. 3 is a diagram view showing the way of winding the secondary wires where two or more are used, and Fig. 4 is a similar view illustrating the winding when a single secondary is used.

Referring first to Fig. 1, A represents a transmitting-diaphragm; *a b*, contacts or electrodes on the diaphragm; *c d*, spring-arms carrying the corresponding contacts or electrodes for the contacts *a b*, as is well understood. The spring-arm *c* and the electrode *a* on the diaphragm are included in a primary battery-circuit (marked *y*,) which is wound on the induction-coil I, as is presently described. The arm *d* and the contact *b* are included in another primary battery-circuit, *z*,

wound in the same manner upon the induction-coil. The winding is illustrated in Fig. 3, where it will be seen that the spool K of the induction-coil is divided into two sections by a central flange, *k*. The primary circuit *y* is wound on the left-hand section of the spool and the primary circuit *z* on the right-hand section of the spool. As is well understood, the vibrations of the diaphragm will produce changes of contact, which will cause corresponding variations in the primary circuits *y z*, which will act upon the induction coil or coils. The secondary wires S and T are wound over the primaries *y z*, and are both connected with a common main line, L. The winding of the secondary coils is indicated in Fig. 2, but is shown diagrammatically and clearly in Fig. 3, from which it will be seen that the winding of the wire S is commenced at the left end of the coil and that of the wire T at the right end of the coil, and that the two wires cross each other midway at the point *s* and continue to cross each other as they are alternately wound in opposite directions. I prefer this method of winding, as in my opinion it gives the best results. The secondary wires S and T may be of different electrical capacity or size, but of equal resistance, so that different inductive effects may be produced. For instance, the winding of circuit S may be of No. 36 wire and that of T, No. 42. Different inductive effects therefore take place, resulting in currents of different tension, which may be thrown upon a common main line, as before mentioned. In the application above mentioned such currents are employed to act upon a telephonic receiver. Of course the secondary wires may have the same capacity, if desired, for any purpose.

The numbers 100 and 300 on the drawings may be taken as arbitrary signs indicating the different characters of the currents generated in the secondary wires. Where a single secondary wire is employed it will be wound back and forth over the primaries in the ordinary way, as clearly indicated in Fig. 4.

With my improved arrangement of primaries, in connection with one or more second-

ary wires, I obtain a current to be sent to the line of high tension, and the arrangement is therefore desirable for many purposes.

I claim as my invention—

- 5 1. The combination of the core, the independent primary wires wound on spools placed side by side upon the core, and the secondary wire or wires wound from end to end of the core over the primary coils.
- 10 2. The combination of a core, two sections of primary wire wound in spools side by side upon the core, and a secondary wire wound in continuous layers one upon the other, each layer being wound continuously
- 15 over both spools of primary wire, substantially as set forth.
3. The combination of the core, the primary

wires wound on spools placed side by side upon the core, and the secondary wires wound from end to end of the core over said primary 20 coils alternately in opposite directions so as to cross each other at or about the middle of the spool.

4. In an induction-coil, the combination of several primary circuits with several second- 25 ary coils of equal resistance and different electrical capacity, substantially as set forth.

In testimony whereof I have hereunto subscribed my name.

THOMAS J. PERRIN.

Witnesses:

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JOHN JUDEN.