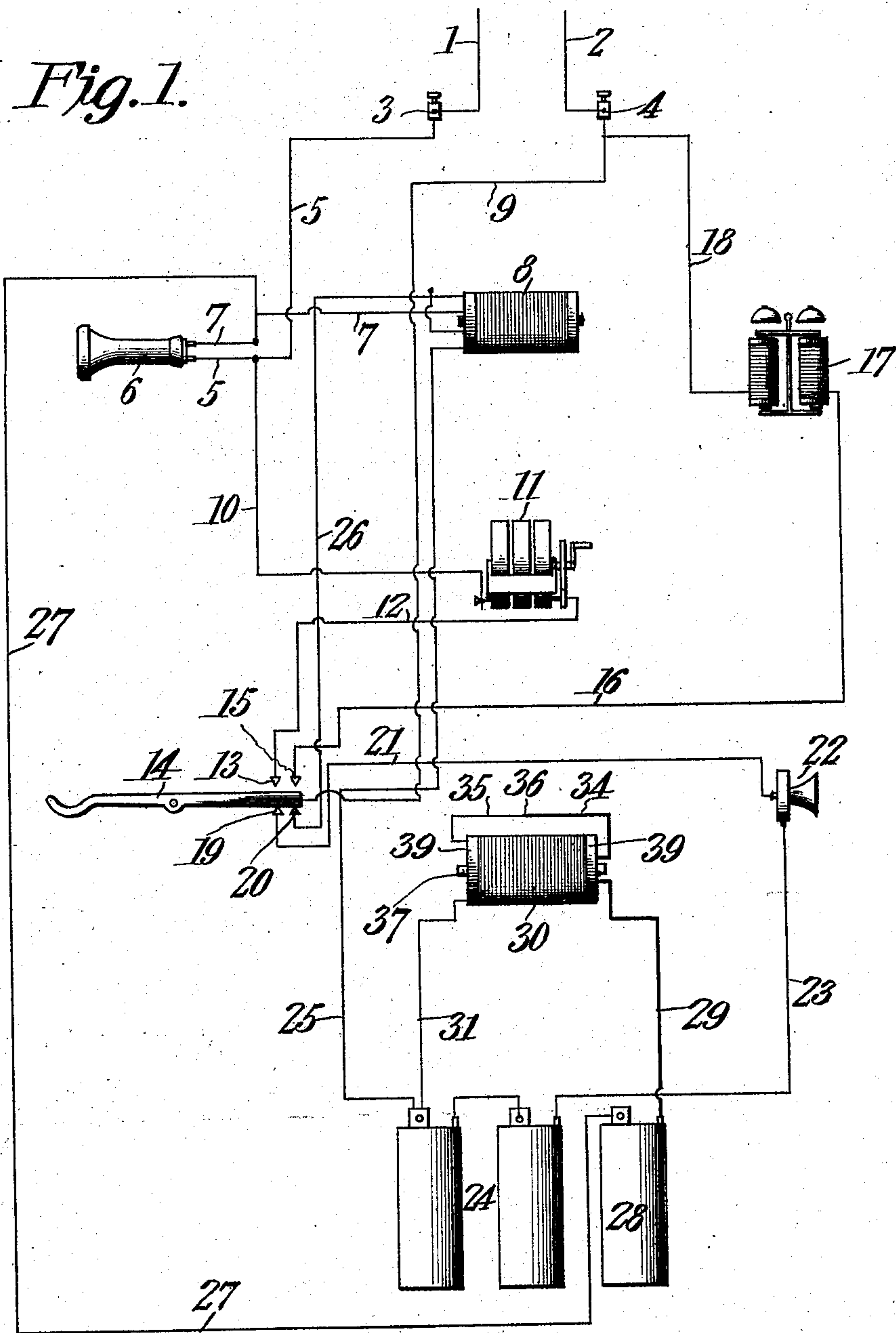


O. FRAZIER.
TELEPHONE.
APPLICATION FILED MAR. 2, 1907.

911,714.

Patented Feb. 9, 1909.
2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

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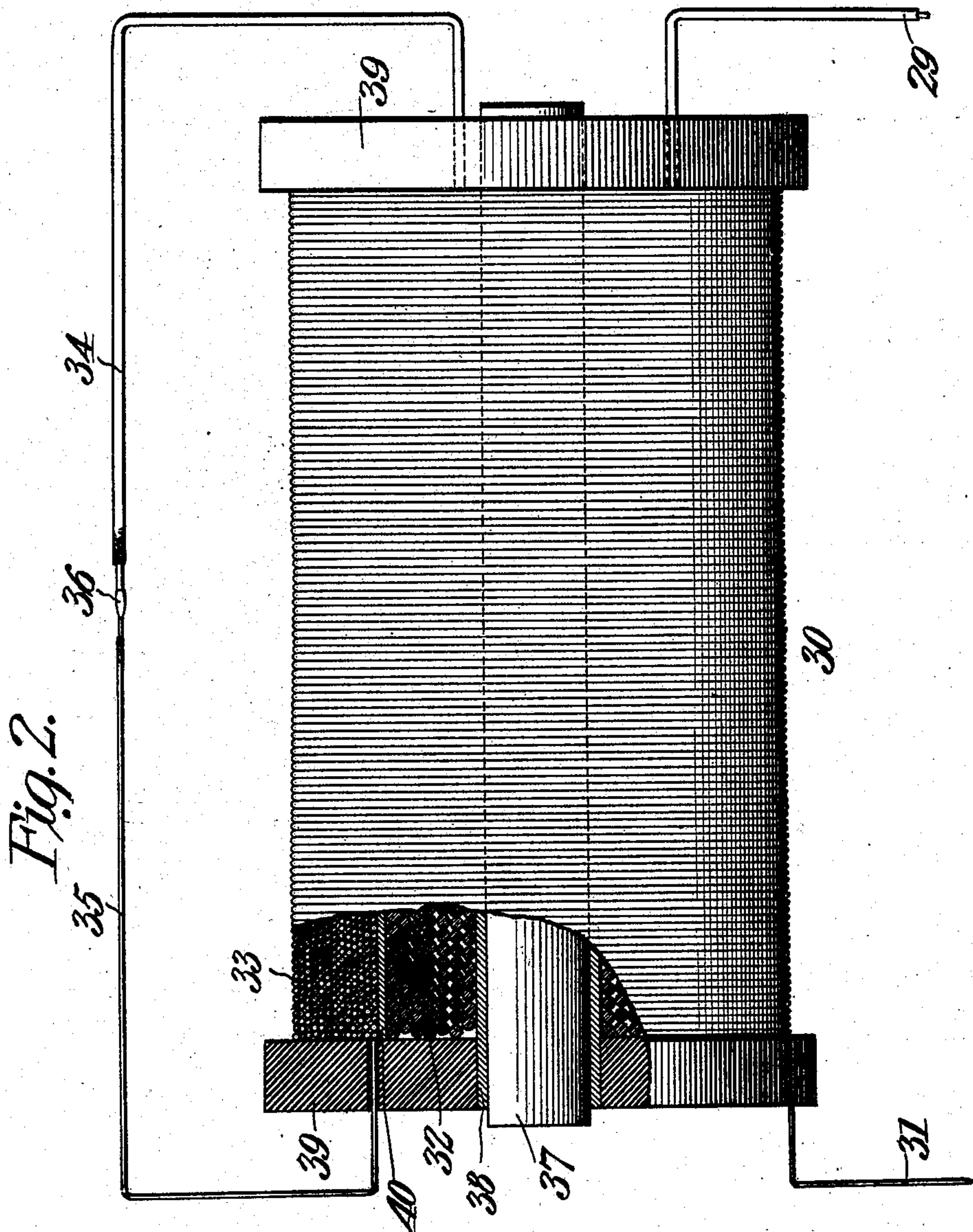
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UNITED STATES PATENT OFFICE.

ORLA FRAZIER, OF BRAZIL, INDIANA, ASSIGNOR OF ONE-HALF TO WILLIAM FRAZIER, OF BRAZIL, INDIANA.

TELEPHONE.

No. 911,714.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed March 2, 1907. Serial No. 360,177.

To all whom it may concern:

Be it known that I, ORLA FRAZIER, a citizen of the United States, residing at Brazil, in the county of Clay and State of Indiana, have invented a new and useful Telephone, of which the following is a specification.

This invention has reference to improvements in telephones, and its object is to amplify or increase the effect of the speech currents upon the receiver diaphragm, so that a larger or more amplified sound results than would result from the currents as ordinarily transmitted over the line to the receiver.

By the present invention the ordinary receiving and transmitting circuits are in no wise interfered with, but an additional circuit is bridged between one side of the receiver and one side of the transmitter and a coil of special construction is included in this circuit together with a source of electrical energy such as a battery. This coil and battery are under the control of the receiver hook and are only included in the circuit when the receiver is taken off the hook and are cut out when the receiver is placed on the hook.

The invention will be fully understood from the following detailed description taken in connection with the accompanying drawings forming part of this specification, in which,—

Figure 1 is a diagrammatic representation of the ordinary circuits of a receiving telephone station with my invention included; and Fig. 2 is an elevation, partly in section, on an enlarged scale, of the sound-augmenting coil.

Referring to the drawings, and more especially to Fig. 1, the mains or leads coming from the central station are indicated at 1—2 and their terminals are indicated by the binding posts 3—4. Leading from the binding post 3 there is a conductor 5 connected to one terminal of the receiver 6, the other terminal of which is connected by a conductor 7 to the fine winding of the ordinary induction coil 8, and the other side of this fine winding is connected by a conductor 9 to the binding post 4 and thence returns by the main 2 to the exchange. Branched off from the conductor 5 there is another conductor 10 leading to the magneto generator 11, and from this generator a conductor 12 leads to a terminal 13 in the path of the

receiver hook 14, while another terminal 15 in the path of this hook 14 leads by a conductor 16 to the ordinary polarized bell mechanism 17, and from this latter a conductor 18 leads to the conductor 9 and from thence to the terminal 4 and main 2. In the path of the receiver hook 14 are two other contacts 19—20. The contact 19 leads by conductor 21 to one terminal of the microphonic transmitter 22 of ordinary or improved construction, and the other terminal of this microphone leads by a conductor 23 to one pole of a battery set 24, in the present instance shown as consisting of two cells, and from the other pole of this battery there leads a conductor 25 to one terminal of the coarse wire winding of the coil 8, the other terminal of which is connected to the conductor 9 and also leads by a conductor 26 to the terminal 20 before referred to. This is the ordinary system of conductors and other parts found at the subscriber's station, and in itself forms no part of the present invention.

Branched off from one side of the receiver, say, from the conductor 7, there is another conductor 27 leading to one terminal of a battery 28, in the present instance shown as consisting of one cell, and the other terminal of this battery 28 leads by a conductor 29 to a coil 30 to be hereinafter described, and from this coil 30 a conductor 31 leads to the pole of the battery 24 to which the conductor 25 is connected, or this conductor 31 may connect directly to the conductor 25. The coil 30 is best shown in Fig. 2, to which reference will now be had. This coil 30 consists of a coarse winding 32 and a fine winding 33, the conductor 29 connecting to one terminal of the coarse winding and the conductor 31 connecting to one terminal of the fine winding. The other terminal 34 of the coarse winding and the other terminal 35 of the fine winding are coupled together, as indicated at 36, so that the coarse and fine windings of this coil are connected up in series. In constructing the coil 30 I make the core 37 of a bar magnet around which there is a paper or other insulating wrapping 38 and insulating heads 39—39 are applied in the usual manner to form an abutment for the winding. The coarse wire 32 is wound upon the insulated core until the spool is about half filled. On this coarse wire winding there may be placed another insulating layer

and the fine wire 33 is then wound upon the insulation 40 until the spool is filled. It will be understood, of course, that both the coarse and fine wire windings are made of appropriately insulated wire.

In the practical embodiment of my invention I have found that the introduction of the coil 30 and battery 28 in the circuit as described greatly augments the loudness of the sound coming from the receiver, while its quality and other characteristics are not injuriously affected. The sound coming from the receiver is nearly, if not quite, double that produced without the addition of the coil 30 and battery 28 in the circuit.

I claim:—

1. In a telephone system comprising receiver and transmitter circuits, another circuit bridged across the receiver and transmitter circuits and including a source of electrical energy and a coil consisting of two windings of different resistance connected in series and in the circuit.

2. In a telephone system comprising receiver and transmitter circuits, another circuit including the receiver, a source of current, a coil having its coarse and fine wire windings connected in series, the coarse wire winding of the transmitter induction coil,

and from thence returning to the main line circuit.

3. In a telephone system comprising transmitter and receiver circuits, another circuit coming from the main circuit and including the receiver, a source of electrical energy, a coil having a magnetic core and coarse and fine wire windings connected in series in the circuit, a coarse wire winding of the transmitter induction coil, and from thence connecting to the return side of the main circuit.

4. A coil designed to be included in a telephone circuit for augmenting the action of the receiver comprising a core consisting of a magnet, a coarse wire coil wound thereon and a fine wire coil wound on the coarse wire coil with one terminal of the fine wire coil connected to one terminal of the coarse wire coil, and the other terminals of the fine and coarse wire coils constituting the free terminals of the coil.

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

ORLA FRAZIER.

Witnesses:

T. W. HUTCHISON,
HOWARD HUGHES.