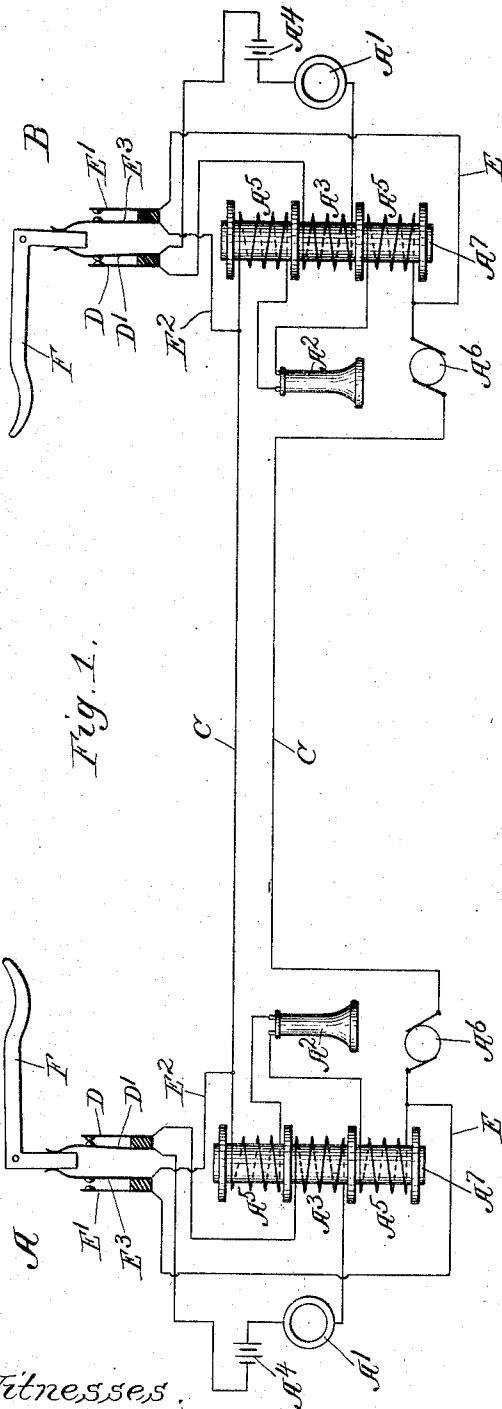


D. H. WILSON.
TELEPHONE APPARATUS.
APPLICATION FILED AUG. 7, 1903.

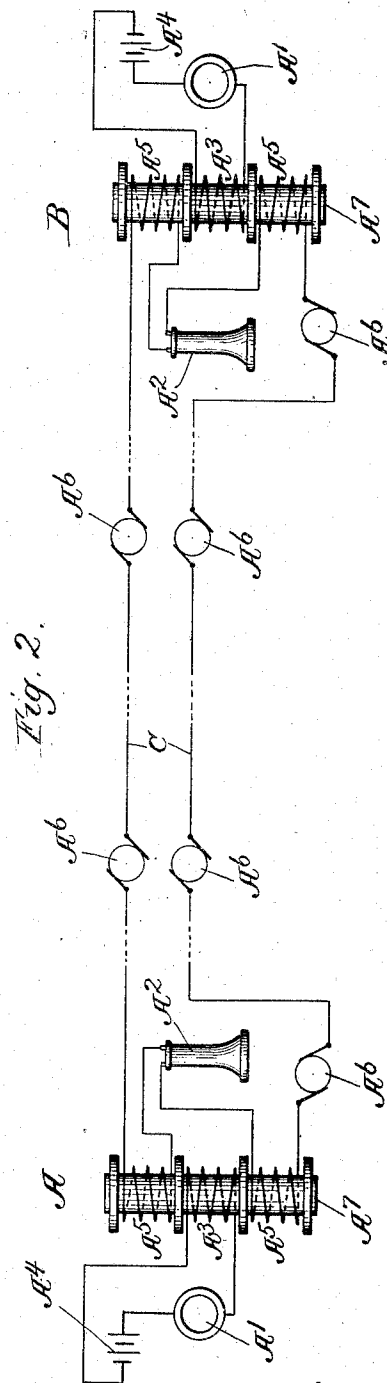
1,015,255.

Patented Jan. 16, 1912.



Witnesses.

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UNITED STATES PATENT OFFICE.

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TELEPHONE APPARATUS.

1,015,255.

Specification of Letters Patent.

Patented Jan. 16, 1912.

Application filed August 7, 1903. Serial No. 163,571.

To all whom it may concern:

Be it known that I, DAVID H. WILSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Telephone Apparatus, of which the following is a specification.

My invention relates to telephone devices and has for its object to provide a new and improved device of this description.

My invention is illustrated in the accompanying drawings, wherein,

Figure 1 is a diagrammatic view of a telephone system embodying my invention; Fig. 2 is a view showing a series of sources of electric supply in the main line.

Like letters refer to like parts throughout the several figures.

In the drawing I have illustrated diagrammatically a construction embodying my invention. In order to simplify the drawing I have omitted details as to the construction and arrangement of the signal circuit and the like, and it will be understood that any suitable arrangement of such circuits may be provided. I have also only illustrated a circuit containing two instruments and have thus avoided the confusion which would result from attempting to show a complete system.

Referring now to the drawing, instruments A and B are connected by the lines C and may be any desired distance apart. Referring to the instrument A it will be noted that there is provided a transmitter A¹ and a receiver A² located in separate circuits. Located in the transmitter circuit is a coil A³ and a battery or source of electric supply A⁴. In the receiver or line circuit is a divided coil A⁵ between which is located the receiver and there is also a source of electric supply A⁶ which in this instance is illustrated as a dynamo electric machine. The coils A³ and A⁵ are located on the core A⁷. I prefer to arrange the two circuits so that when the device is not in use the transmitter circuit will be broken and the coils A⁵ and A³ will be short circuited. This may be done by the receiver hook in the ordinary way. It will be noted that in this construction there are two circuits, one containing the receiver and the other the transmitter and that, each of these circuits has a separate source of electric supply. I have found

that by this arrangement a long distance telephone is produced by means of which I am able to get results not possible with any of the devices now on the market.

When the device is in operation there is a current in the receiver circuit, that is, the line circuit. When a person talks into the transmitter the current in the transmitter circuit is varied and the effect of this variation is transmitted to the coil A⁵ and, as it were, impresses itself upon the already existing current in said coil, and the said current then takes on the character, as it were, of a talking current. The great advantage of this system for long distance talking will thus be readily appreciated for it will be seen that the talking current and the distance it may be transmitted is not dependent upon the secondary current developed by the variations in the transmitter circuit but depends upon an independent source of electricity in the said main line circuit or receiver circuit and this main line current can thus be transmitted long distances by using the proper means or by providing a number of sources of electric supply located at intervals along the line. In other words, the transmitting capacity of this device depends upon a source of electric supply in the line circuit and the variations in the transmitter circuit are required only to impress upon this previously produced current the characteristics of a talking current and this is then reproduced into speech at the other end of the line by means of the receiver there located.

In Fig. 2 I have illustrated a line, containing a series of sources of electric supply A⁶. It is of course evident that the coils and various parts may be arranged in any suitable manner, it only being necessary that the arrangement of the coils be such that the characteristics of the varying current in the transmitter circuit be communicated to the independently produced current in the receiver or line circuit.

By means of my present invention, the evil effects of induction are practically obviated and the voice is transmitted from one instrument to the other over long distances and is reproduced so as to be plain and clear and free from the distracting effects due to induction, so prevalent in connection with the present apparatus.

I have illustrated in Fig. 1 a simple construction for cutting out the coils and opening the transmitter circuit when the device is not in operation. In this construction the transmitter circuit is provided with two contacts D and D¹ which, when together complete the circuit and when separated open the circuit. Associated with the receiver or main circuit is a conductor E connected to a contact E¹ and a conductor E² connected to a contact E³. The receiver hook F is provided with a projection which extends between the contacts D¹ and E³, and when the receiver is on the hook the contacts E¹ and E³ are together, thus completing a short circuit around the coils. In this condition the contacts D and D¹ are separated. When the receiver is removed from the hook, the associated spring moves the parts so that the contacts D and D¹ are brought together and the contacts E¹ and E³ are separated.

I have illustrated in the drawings a simple arrangement for carrying out my invention but it is of course evident that various arrangements may be utilized, the essential thing being that a current in the line over which speech is being transmitted is affected or modified, as it were, by another current which has the characteristics of a talking current and which impresses itself upon the first mentioned current.

It is of course evident that this invention may be utilized in various ways other than that herein shown and by instrumentalities different from those I have illustrated, it being only necessary that the current shall be such as to be capable of taking on, or being reinforced by, the talking current in the circuit associated therewith so that the composite current, as it were, may be converted into speech at the receiving end or station.

I claim:

1. A telephone apparatus, comprising a transmitter circuit and a receiver circuit, a coil in one of said circuits wrapped about a suitable core, a divided coil in the other cir-

cuit having a part located on each side of the first mentioned coil a receiver in circuit with the divided coil and a source of electric supply in both of said circuits.

2. A telephone apparatus, comprising a transmitter circuit and a receiver circuit separate from each other, a coil in the transmitter circuit, a divided coil in the receiver circuit the two parts of which are located at one end of said circuit, a receiver connected between the sections of said divided coil and in circuit therewith and a source of electric supply in both of said circuits and means for short-circuiting the two parts of said divided coil.

3. A telephone apparatus comprising a main line containing a source of electric supply, a receiver connected in said main line at each end thereof, a local circuit at each end of said main line comprising a source of electric supply and a transmitter, a part of each local circuit being wound around the middle portion of the core at the end of the main line with which it is associated, a portion of the main line being wound around said core on both sides of the winding of the local circuit, the receiver being connected in the main line circuit between the two sections of said windings.

4. A telephone apparatus comprising two circuits one containing a transmitter and the other a receiver, the circuit containing the receiver being the main line circuit, a coil located in each of said circuits and in proximity to each other, the coil in the main line circuit divided into two sections, one located on each side the coil in the other circuit, an independent source of electric supply connected with each of said circuits, and means for short-circuiting the coil in the main line circuit and opening the circuit containing the transmitter under predetermined conditions.

DAVID H. WILSON.

Witnesses:

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