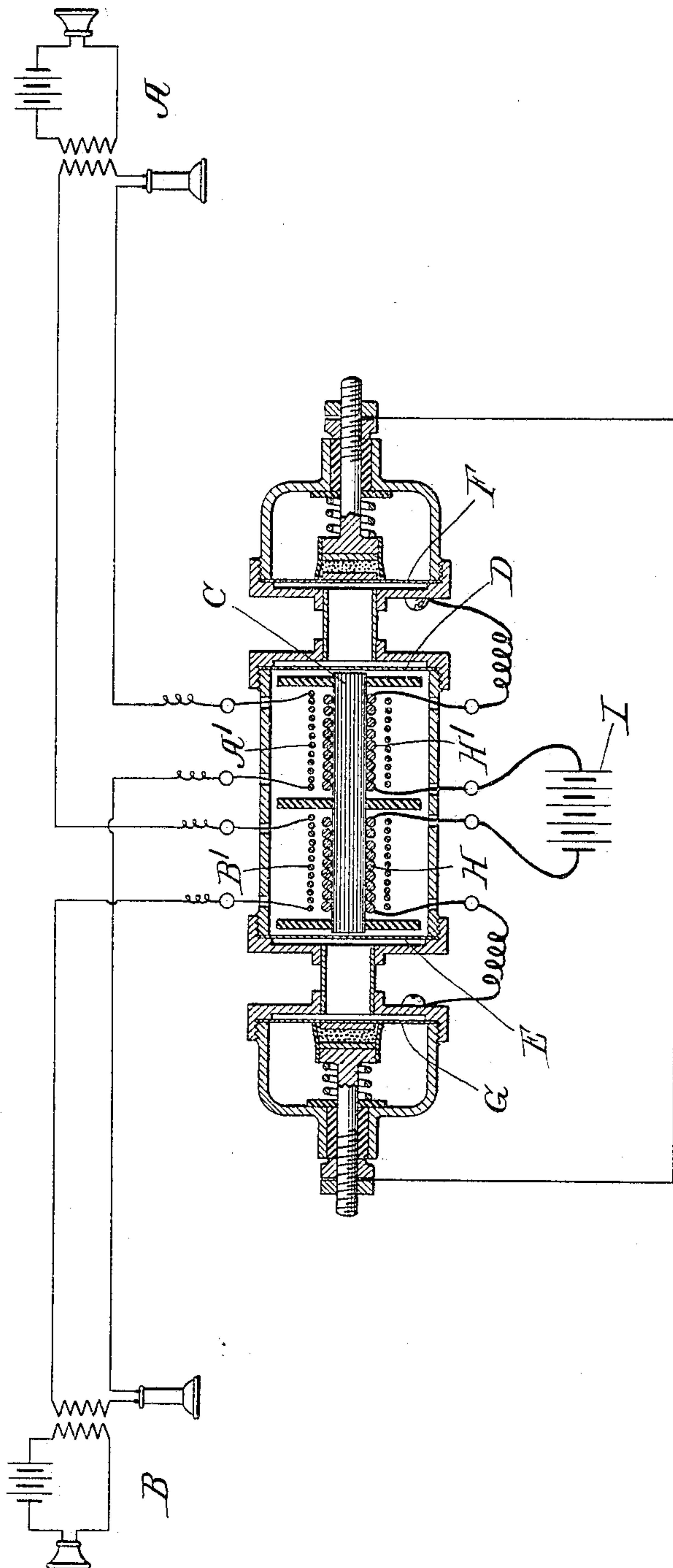


No. 766,155.

PATENTED JULY 26, 1904.

D. H. WILSON.  
TELEPHONE REPEATER.  
APPLICATION FILED AUG. 13, 1903.

NO MODEL.



Witnesses,  
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# UNITED STATES PATENT OFFICE.

DAVID H. WILSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO GEORGE W. KRETZINGER, OF CHICAGO, ILLINOIS.

## TELEPHONE-REPEATER.

SPECIFICATION forming part of Letters Patent No. 766,155, dated July 26, 1904.

Application filed August 13, 1903. Serial No. 169,330. (No model.)

*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-Repeaters, of which the following is a specification.

My invention relates to telephone-repeaters, and has for its object to provide a new and improved repeating device of this description.

My invention is illustrated in the accompanying drawing, wherein I have shown diagrammatically one form of my repeating device connected in circuit. In this drawing I have shown two sets of instruments A and B, which may consist of any of the ordinary transmitters and receivers. The repeater is located at some suitable point or points along the line.

In the device herein illustrated the repeater comprises a core C, upon which is wound a coil A' and a coil B', said coils being connected in the main line which connects the instruments A and B. As herein shown, the line is continuous from one set of instruments to the other, and one of the coils is in one branch of the line and the other coil in the other branch. The two telephone-receivers D and E are associated with the core C, one at each end thereof, said core in this instance forming the controlling-magnet for the receiver-diaphragms. Opposed to the receivers D and E are the transmitters F and G, so arranged as to receive the sound-waves provided by the receivers when a person talks into either of the instruments A or B. A primary coil is wound upon the core C and is connected in circuit with the transmitters F and G. This primary coil consists of two sections H and H', the battery or other source of electric supply being connected in circuit therewith, preferably between the two sections. This construction permits messages to be transmitted in both directions over the same line and without any additional wires or devices. When the instruments at station A, for example, are being used, a current is set up in the line which passes through coils A' and B', thus energizing the core C and causing the

receivers to be operated. The receivers then act upon the transmitters, thus varying the current which passes through the sections H and H' of the coil in circuit therewith. This current is a talking-current and induces a current in coils A' and B', which passes out to the receiver at the proper locality. The receivers D and E work simultaneously when both are used, as do the transmitters F and G, and we therefore have the action of both transmitters in connection with the primary coils. It is of course evident that one receiver and one transmitter may be used, although a much better effect is produced when both are used. It will be seen that by this construction the talking-current is reinforced, as it were, by means of the repeater, which takes it up and strengthens or magnifies it, thus permitting it to be carried farther than would be the case when an ordinary device is used. It is also evident that a series of repeaters may be connected in circuit, if desired, and that construction and arrangement of the parts may vary in many particulars without departing from the spirit of my invention. I therefore do not limit myself to the particular construction shown.

I claim—

1. The combination with a continuous circuit connecting two telephone-stations of two separated coils in said circuit between said stations and wound upon a common core, a receiver having its diaphragm actuated by said core, a transmitter associated with said receiver, a coil on said core in circuit with said transmitter and a source of electric supply in the transmitter-circuit.

2. The combination with two sets of telephone instruments of a coil in the circuit connecting said instruments, a core for said coil, a receiver having its diaphragm associated with said core, a transmitter opposed to said receiver, a coil on said core in circuit with said transmitter and a source of electric supply in the transmitter-circuit.

3. A telephone-repeater comprising a core having a coil thereon, adapted to be connected with the instruments at each end of the line, a receiver associated with said core, a



transmitter associated with said receiver, a coil on said core in circuit with said transmitter and a source of electric supply in the said transmitter-circuit.

- 5 4. The combination with a circuit connecting two telephone-stations of two separated coils, one in each branch of said circuit and wound upon the same core, two receivers, one associated with each end of said core, a trans-

mitter associated with each receiver, a coil 10 on said core in circuit with said transmitter and a source of electric supply in the transmitter-circuit.

DAVID H. WILSON.

Witnesses:

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