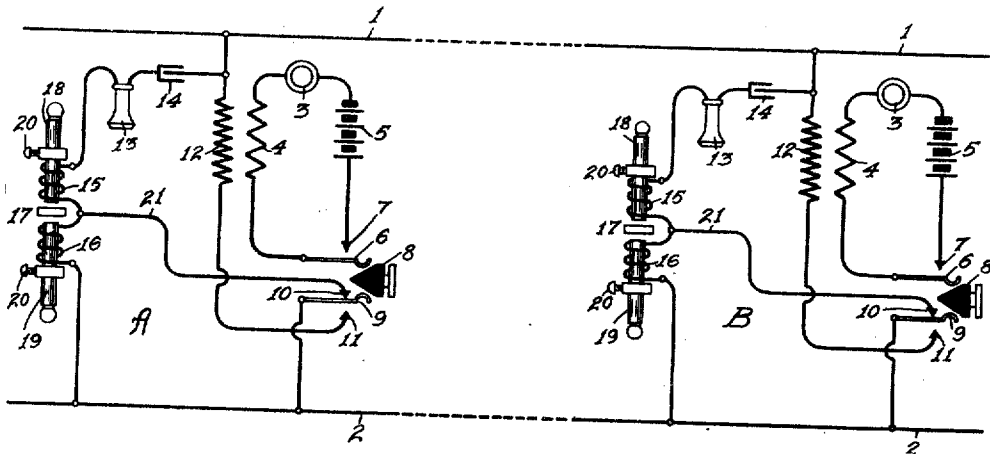


W. REID.
RAILWAY TRAIN DESPATCHING CIRCUIT.
APPLICATION FILED SEPT. 8, 1914.

1,266,158.

Patented May 14, 1918.



Witnesses:
George E. Mueller
Wm. Dargatzis

Inventor:
William Reid.
By Curtis Beamp.
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM REID, OF CHICAGO, ILLINOIS, ASSIGNOR TO KELLOGG SWITCHBOARD & SUPPLY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

RAILWAY. IN-DESPATCHING CIRCUIT.

1,266,158.

Specification of Letters Patent.

Patented May 14, 1918.

Application filed September 8, 1914. Serial No. 860,600.

To all whom it may concern:

Be it known that I, WILLIAM REID, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway-Train-Despatching Circuits, of which the following is a specification.

My invention relates to telephone transmission systems and more particularly to that class of transmission systems of use in connection with railway train despatching circuits. My invention is particularly designed to provide a balanced receiving circuit so that a standard type of telephone receiver may be employed.

My invention also contemplates providing as much impedance as possible for the receiver circuit so that the operator when listening may readily break in for outgoing transmission should he so desire.

The circuit is also so arranged that the receiver circuit bridge is never interrupted even when changing the circuit from incoming to outgoing. I further arrange the secondary of the induction coil in a separate and independent bridge.

I will explain one form which my invention may take more in detail by referring to the accompanying drawing illustrating diagrammatically a line circuit with two substation circuits in place.

In the drawing I show two line conductors 1 and 2 which are adapted to extend along the railroad right of way in case the circuit is used for train despatching. There are of course as many substation circuits as needed, only two being here set out as being sufficient for illustrative purposes. The substation talking sets are desirably all identical. I have as stated shown two substations A and B, each provided with a transmitter 3 arranged in a local circuit including the primary winding 4 of the induction coil, the battery 5, and the contact springs 6 and 7 adapted to be periodically connected together through the agency of the button 8. The button 8 also actuates an additional contact spring 9 associated respectively with contact springs 10 and 11 for purposes which will presently appear. The secondary winding 12 of the induction coil is adapted for connection in an independent bridge across the line conductors 1 and 2

and is so connected for outgoing transmission whenever the button 8 is actuated to change the springs 6 and 9 to their alternative position. For incoming transmission the circuit through the secondary winding 12 is open at the spring 11 as readily apparent. The receiver 13 is also included in an independent bridge across the line conductors 1 and 2 having included serially therewith a condenser 14 and two windings 15 and 16 respectively of an impedance device 17. The windings 15 and 16 are provided respectively with adjustable cores 18 and 19 held in position by the set screws 20.

The impedance of the circuit can thus be arranged in such a way as to accommodate for the conditions existing at that particular station and the receiver circuit can thus be well balanced. A conductor 21 extends from a connection preferably centrally between the windings 15 and 16 to the contact spring 10. For incoming voice current; therefore, or incoming transmission, the receiver 13 is in series only with the condenser 14 and the coil 15, these three serially included devices being in an independent bridge across the line conductors 1 and 2.

Now when the operator at the station A for instance wishes to break in, meaning thereby to arrange this circuit for outgoing transmission, he actuates the button 8 to move the springs 6 and 9 to their alternative position, whereupon the additional impedance winding 16 is serially included in the receiver bridge between the conductors 1 and 2 and the local transmitter circuit is closed. For outgoing transmission therefore the local receiver circuit has its impedance increased without having this receiver circuit interrupted. To return to the incoming transmission arrangement the button 8 is returned to the position shown, whereupon the local transmitter circuit is opened, the circuit of the secondary winding 12 is opened, and the receiver circuit has its impedance decreased.

From what has been described the nature of my invention will be readily apparent to those skilled in the art, and having thus described one form which my invention may take, what I claim as new and desire to secure by Letters Patent is:

1. A telephone transmission system comprising a plurality of stations united by a

2

common line circuit, each station having a local transmitter circuit including a battery and a primary winding of an induction coil, a secondary winding for said coil included in a normally open bridge across said line circuit, an independent permanent bridge across said line circuit normally including a receiver and an adjustable impedance coil, and a second impedance coil, a shunt about said second impedance coil, a movable contact for increasing the impedance of the receiver bridge by removing said shunt from around said second impedance coil and for closing said normally open bridge across said line circuit.

2. A telephone transmission system comprising a plurality of stations united by a common line circuit, each station having a local transmitting circuit including the primary winding of an induction coil, a secondary winding for said coil included in an open bridge across said line circuit, an independent bridge across said line circuit including a pair of impedance coils and a receiver, a normally closed shunt circuit around one of said impedance coils, and a movable switch contact for opening said shunt circuit thereby increasing the impedance

of the receiver bridge and for closing said normally open bridge in shunt of said receiver bridge.

3. A telephone system including a telephone line, a substation connected to said line, a secondary winding included in a normally open bridge across said line circuit, a receiver included in an independent normally closed bridge across said line circuit, a pair of adjustable impedance coils in said last bridge, a movable switch contact included in a normally closed circuit about one of said impedance coils and adapted to be included in the circuit of said secondary coil, and means for operating said switch contact to increase the impedance of the receiver bridge by placing said impedance coils in series, said switch contact also operable to close said normally open circuit including the secondary coil.

Signed by me at Chicago, county of Cook and State of Illinois, in the presence of two witnesses.

WILLIAM REID.

Witnesses:

GEORGE E. MUELLER,
B. O'BRIEN.