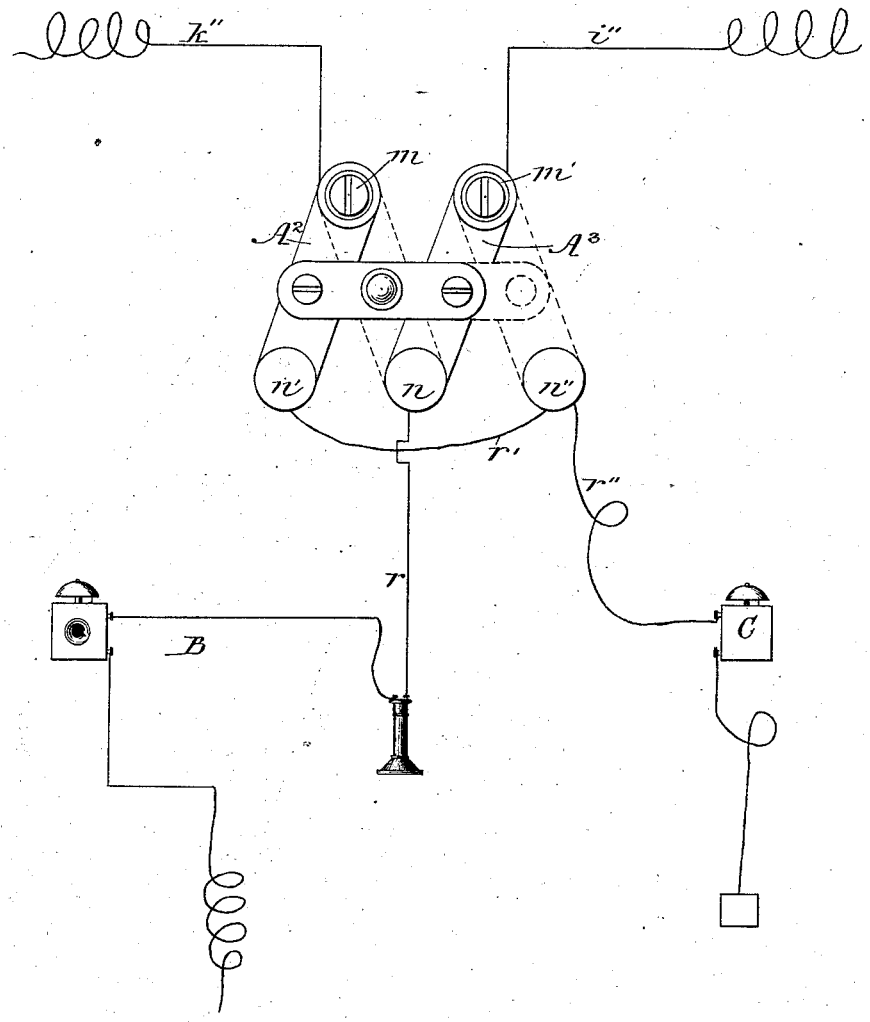
(No Model.)

J. W. BRENNAN.

ELECTRIC CIRCUIT FOR TELEPHONE SYSTEMS.

No. 267,058. Patented Nov. 7, 1882.



Witnesses:
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UNITED STATES PATENT OFFICE.

JAMES W. BRENNAN, OF CHICAGO, ILLINOIS.

ELECTRIC CIRCUIT FOR TELEPHONE SYSTEMS.

SPECIFICATION forming part of Letters Patent No. 267,058, dated November 7, 1882.

Original application filed April 4, 1882; divided and this division filed September 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. BRENNAN, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Electric Circuits for Telephone Systems, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which shows a plan view of the several parts as the same are connected up in practice of the invention.

The invention relates to electric circuits for telephone or telegraph systems; and it consists of certain improvements in the combination of a two-arm switch with a single set of receiving and transmitting instruments, and with an extra audible signal, whereby two distinct loops may be maintained in permanently-closed circuit, the one circuit being made to include the instruments and the other the extra signal, or reversely, as desired.

The invention was fully described and claimed in an application for Letters Patent filed by me on or about the 4th day of the month of April, 1882, and is now made the subject of a division of said application, in compliance with the requirements of the Patent Office. As set forth in said original application, the invention is of special value in connection with telephone-stations having a single set of receiving and transmitting instruments, which may be economically and efficiently used to communicate with the central office, and through it with other stations, and as well may be used to communicate over a private wire or loop to some other station therein.

To a common base-piece, of wood, gutta-percha, or like insulating material, the pivoted arms A^2 A^3 are attached, the pivots m m' of said arms being furnished with screw-cups to secure the line-wires k'' i''. Three contact-buttons, n' n n'', are fastened to the base-piece, said buttons n' n'' being joined by the short wire r', while the buttons n n'' are electrically connected with the wires r r'', respectively. The switch-arms A^2 A^3 are formed of metal, and move in unison upon the main pivots m m', a bridge-piece of gutta-percha or like insulating material, with convenient thumb-post, to which said bridge the arms A^2 A^3 are pivoted, affording convenient means to shift the arms from contact with buttons n' n to n n'', or reversely, as desired. If, now, it be assumed that the station is terminal with respect to the private line or loop, the switch as described will be connected up as follows: The wire k'' of the private line will be secured to screw-cup of pivot m and the wire i'' from the central-exchange station or general loop to screw-cup of pivot m'. The wire r, attached to button n, will run to the set of telephone-instruments B, and thence to the next station of the loop, while wire r'' will pass from button n'' to the extra signal C, and thence to the ground. If the switch be in position shown by full lines, Fig. 1, a message over the general loop i'' will pass, by screw-cup m', arm A^3, button n, wire r, to telephones, and thence again to line, while at same time a call to the station over the private line will pass in circuit, by wire k'', screw-cup m, arm A^2, button n', wire r', button n'', wire r'', to the extra signal, and thence to ground. Responding to such call, the operator merely shifts his switch to positions shown in dotted lines, whereupon the circuit from private-line wire k'' will be, through screw-cup m, arm A^2, central button, n, and wire r, to telephone-instruments, and thence again to line, while the circuit of the general loop will be directed into the extra signal, as follows: from wire i'' to screw-cup m', arm A^3, button n'', wire r'', and signal. Hence it is that in either position of the switch both lines or loops are in permanent circuit, and the station never without warning if "call" be directed to it over either loop. The switch may be used with equal success in a station which is terminal as to both loops, in that event no change in parts occurring, but the line-wires from the telephone-instrument being grounded merely at the station. In like manner the switch may be connected up with an ordinary set of telegraph-instruments having an extra signal in the second loop or line-wire, the circuit being maintained permanently closed, as above set forth, through the instruments and extra signal, respectively.

What I claim as new, and desire to secure by Letters Patent, is—

In electric telephone or telegraph systems, the combination, at one station, with two separate loops or main lines, and with a single set

of receiving and transmitting instruments having the usual audible signal, of an extra audible signal and a shifting switch, which said switch consists of two pivoted arms insulated from each other and adapted to move in unison upon a set of contact-buttons, whereof two are electrically joined, the entire combination of parts being such that the two separate loops or main-line circuits coming into the station may be maintained permanently closed, the one through the instruments and the other through the extra signal, or reversely, substantially as described.

In testimony whereof, witness my hand this 11th day of September, A. D. 1882.

JAMES W. BRENNAN.

Witnesses:
JAMES H. PEIRCE,
FREDERICK S. BAKER.