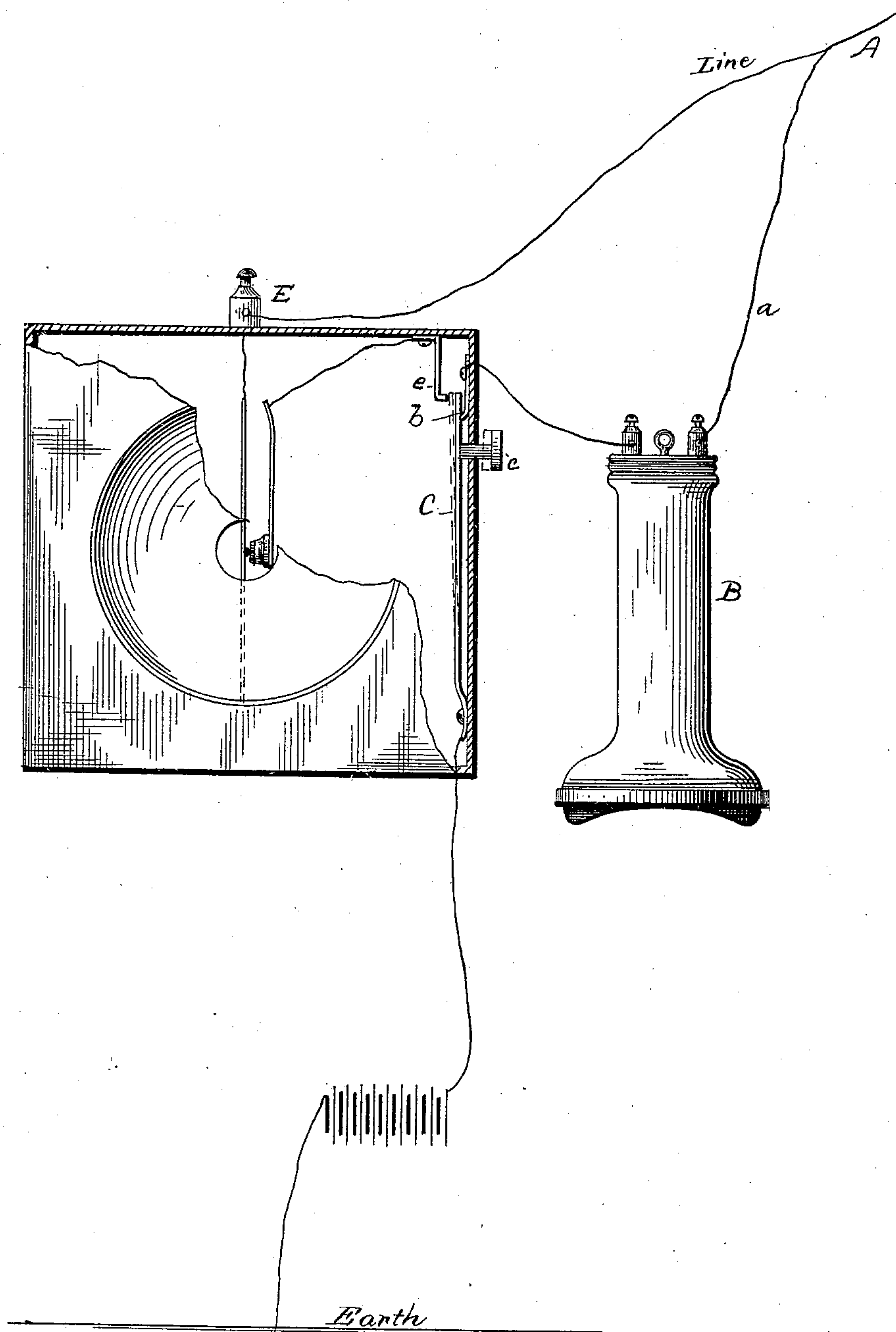


(No Model.)

F. C. WATKINS.
TELEPHONE SYSTEM.

No. 370,293.

Patented Sept. 20, 1887.



Witnesses
R. W. Bishop
J. McNamee

Inventor
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By his Attorney
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UNITED STATES PATENT OFFICE.

FRANK C. WATKINS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR, BY
MESNE ASSIGNMENTS, TO THE UNITED STATES KROTOPHONE COMPANY,
OF NEW YORK, N. Y.

TELEPHONE SYSTEM.

SPECIFICATION forming part of Letters Patent No. 370,293, dated September 20, 1887.

Application filed December 24, 1886. Serial No. 222,475. (No model.)

To all whom it may concern:

Be it known that I, FRANK C. WATKINS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Telephone Systems; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention has relation to telephone systems, and more particularly to that class wherein the transmitter and the receiver of each subscriber or station are in the same circuit or on the same wire, wherein the current has been shunted around the receiver when the transmitter was in use, and when the receiver was in use the transmitter has been cut out, or wherein the receiver and secondary coil of the transmitter are cut out and in, respectively; and the object of the invention is to cut out those instruments not actually in use, though belonging to the sets of the parties communicating; and to these ends the novelty consists in the system of switching the main line from the receiver to the transmitter, and vice versa, as will be hereinafter more fully described, and particularly pointed out in the claim.

The figure in the drawing is a diagram illustrating my invention.

A is the main line, one portion, *a*, of which runs through the receiver B to the contact-point *b*, thence through the spring-switch C, through the battery to the ground. This is the normal position of the parts when a message is being received, the operator standing in front of the transmitter, with the receiver to his ear and his hand on the button *c*. When

the message is finished and he desires to talk, he simply presses the button *c*, which throws the switch C against the contact-point *e*. The receiver is then cut out, and the circuit is from the ground-battery and through the transmitter to the screw-post E, and thence to the line. It will thus be seen that the resistance due to the receiver is cut out when the transmitter is being used, and when the receiver is in use the resistance of the transmitter is avoided; consequently, though two parties are using the line, only the transmitter of the sender and the receiver of the hearer are in circuit at the same time, and thus the battery is utilized to the best advantage.

This device is particularly intended for and specially adapted to that class of instruments known as "contact-telephones."

While I have shown the system as applied to a terminal station, it is clear that it is equally well adapted to an intermediate office, as, instead of running the wire from the switch C to the battery and ground, it is simply run to the main line and on to the next station.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

The combination, with the main line, of two branches, one of which contains a telephone-transmitter and the other a telephone-receiver, and intervening switch mechanism connected to an earth-circuit through a transmitting-battery adapted to connect either the transmitter or receiver to the earth through said battery, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK C. WATKINS.

Witnesses:

J. MCNAMEE,
H. J. ENNIS.