

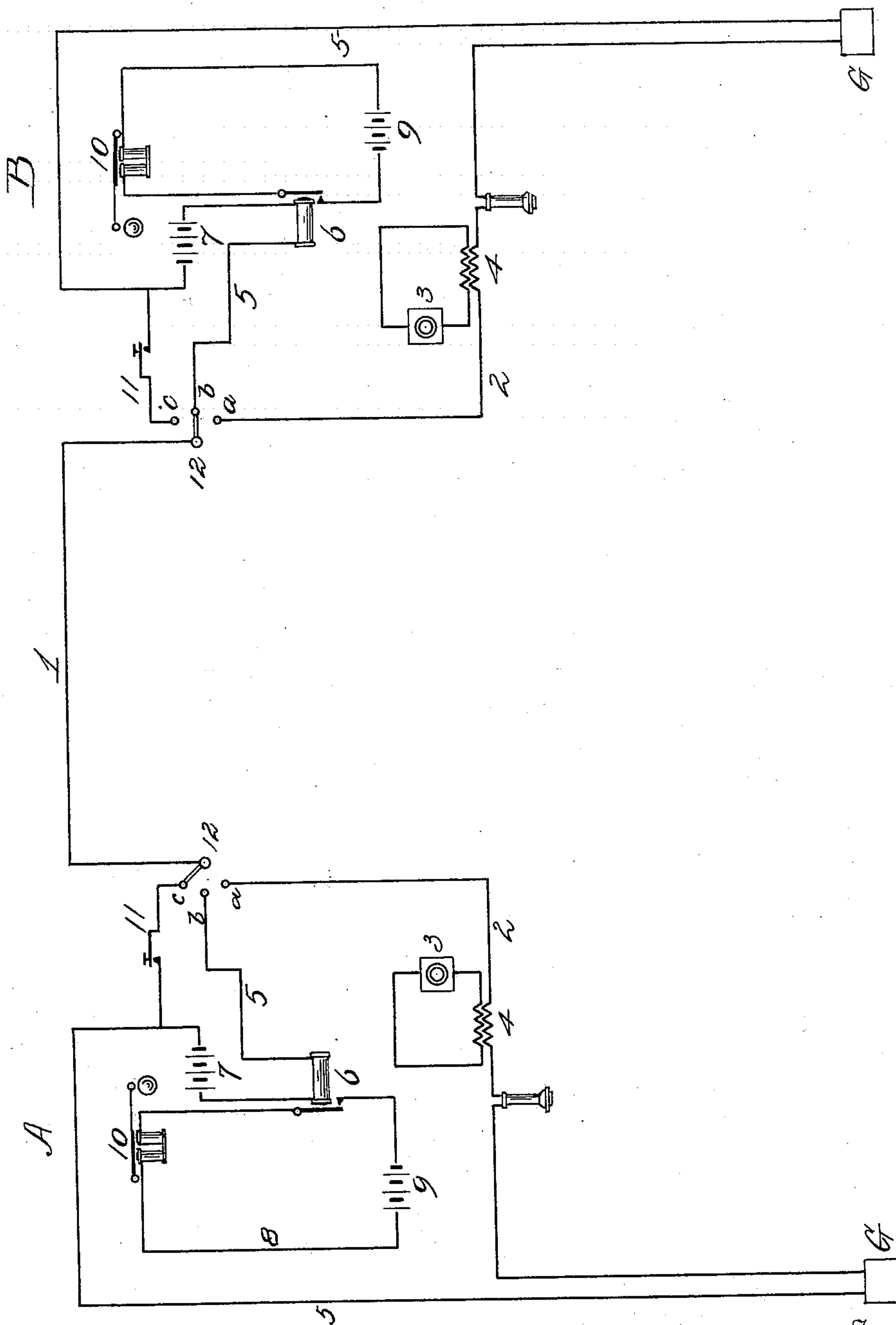
No. 610.393.

Patented Sept. 6, 1898.

S. S. FISHER.
TELEPHONE.

(Application filed Jan. 14, 1897.)

(No Model.)



Witnesses

Victor J. Evans.

Inventor
Sidney S. Fisher.

By *John Wedderburn.*

Attorney

UNITED STATES PATENT OFFICE.

SYDNEY SOLOMON FISHER, OF SAN FRANCISCO, CALIFORNIA.

TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 610,393, dated September 6, 1898.

Application filed January 14, 1897. Serial No. 619,147. (No model.)

To all whom it may concern:

Be it known that I, SYDNEY SOLOMON FISHER, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Telephones; and I do hereby 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.

My invention relates to telephones.

My object is to dispense with the ordinary form of magneto-generator and bell and to provide simple and inexpensive means for signaling and cutting in and out the bell and talking-circuits; and a further object is to provide signaling means of such improved construction that a call can be given over a circuit of indefinite length.

The invention consists of a novel arrangement of instruments and circuits, as will appear more fully hereinafter.

The accompanying drawing is a diagrammatic view of two telephone-stations and the circuit connections therefor.

The telephone-stations are shown at A and B, and the numeral 1 designates the line-wire connecting the same. The instrument-circuits are shown at 2, the same leading to ground G and embracing transmitters 3, induction-coils 4, and the ordinary receivers. Either a magnetic or variable-resistance transmitter may be used. Signaling-circuits are shown at 5, the same embracing relays 6, wound to a resistance adapted to the line-wire circuit and main battery 7. Said circuit has one end grounded. Local circuits are shown at 8, the same embracing the contact-points and armatures of the relays 6 and local batteries 9 and vibrating bells 10. The ringing-up circuits are shown at 11, the same being grounded and having calling-keys. Three point-switches 12 are employed for connecting the various circuits to the line-wire, the switch-arms being electrically connected to the line-wire and the wires of the instrument signaling and ringing-up circuits leading to

the switch-points, which are shown at *a*, *b*, and *c*.

The operation is as follows: The switch-arms normally rest on the switch-points *b*. When station A desires to call station B, the operator at A first moves the switch-arm to point *c* and presses the calling-up button 11. This throws the grounded ringing-up circuits of A's station into the grounded signaling-circuit of B's station and the relay of the latter station is actuated and the local circuit closed, ringing the bell. The operator at A then moves the switch-arm back to point *b*. Upon hearing the signaling the operator at B moves his switch-arm to point *c* and depresses his calling or ringing-up key, thereby sending a return signal through A's relay and causing an actuation of his bell. Both operators then turn the switch-arms to point *a*, whereupon the instrument-circuits are thrown together and conversation can be had.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a telephone system, two stations connected by a line-wire whose ends are in electric connection with switch-points, each station having a grounded instrument-circuit terminating in a contact-point, a grounded signaling-circuit terminating in a contact-point and embracing a main battery and a relay wound to a resistance adapted to the line-wire circuit, a local circuit embracing a contact-point, the armature of the relay, a local battery and a signal, and a normally open ringing-up circuit leading from the grounded signaling-circuit, terminating in a contact-point and containing a circuit-closer, the three contact-points of the instrument, signaling and ringing-up circuits lying within the path of movement of the switch-points.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

SYDNEY SOLOMON FISHER.

Witnesses:

EDW. FISHER,
H. R. TIMM.