

I. KITSEE.
TELEPHONY.

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1,083,256.

Patented Dec. 30, 1913.

Fig. 1.

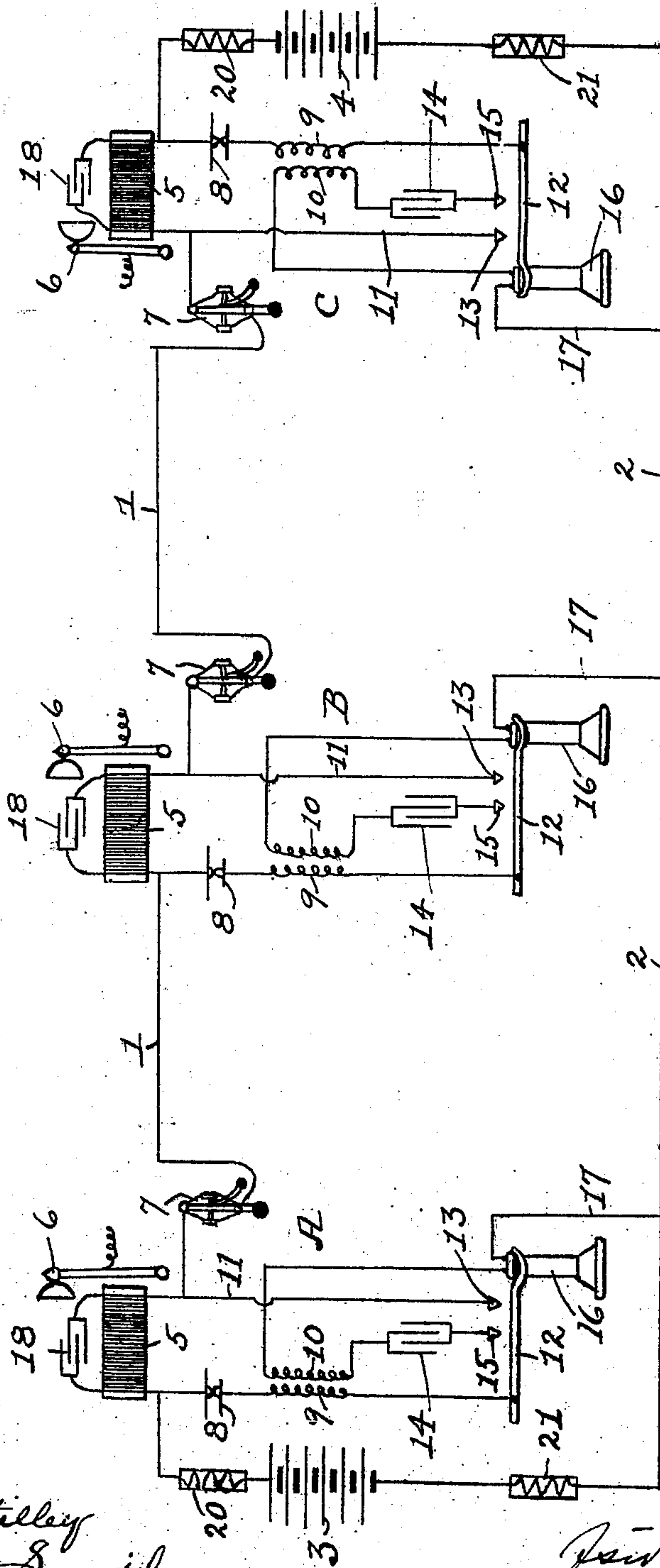
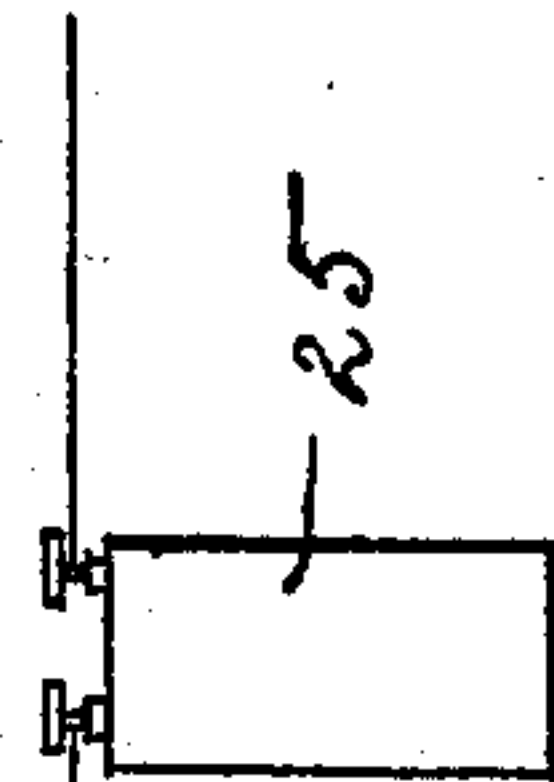


Fig. 2.



WITNESSES:

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ISIDOR KITSEE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO AMERICAN TELEPHONE AND TELEGRAPH COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

TELEPHONY.

1,083,256.

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To all whom it may concern:

Be it known that I, ISIDOR KITSEE, 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 Telephony, of which the following is a specification.

My invention relates to an improvement in telephony.

It is more specially intended for telephone circuits, wherein a large series of sub-stations are connected to one common line and it, therefore, lends itself readily to telephone work in railroading.

In the drawing, Figure 1 is a diagrammatic view of a telephonic circuit embodying my invention. Fig. 2 is a plan view of a voltaic resistance, such as an ordinary dry battery.

In Fig. 1, 1 and 2 are the lines of transmission. These lines are connected together at their terminals by the batteries 3 and 4. In the drawing, the line is illustrated as to be provided with the three stations A, B and C. The devices and their arrangements are similar at each station and similar parts are similarly designated therein. In series with the circuit, for each station, is the coil 5 of an annunciating device illustrated here as the one-stroke bell 6. In series with the line is also a transmitting key 7, here illustrated as to represent the well known Morse telegraph key. The transmitting arrangement comprises the micro-phone transmitter 8, primary 9 of an inductorium; but instead of providing for each of the transmitting arrangements a separate source of current, I make use of the coil 5 inserted in series as to the line, as the source to provide the necessary energy, so as to generate impulses in the secondary 10 of the inductorium. The arrangement for such purpose is as follows: One terminal of the micro-phonic transmitter 8 is connected to one terminal of the coil 5 and the other terminal of said coil is connected with the shunt wire 11. The micro-phonic transmitter is, with the interposition of the primary 9, connected permanently with the lever 12 and the wire 11 is connected to the contact point 13 in juxtaposition to said lever. Said lever is adapted to connect, when released from its receiver, with the point 13 and thereby make a circuit shunting the coil 5 and this shunt includes

the micro-phone 8 and the primary 9. It is obvious that the shunt should be of lower resistance than the coil 5. The secondary 10 is connected with one terminal, with the interposition of the condenser 14, to the point 15, also in juxtaposition to the lever 12 and adapted to connect with this lever when the receiver is removed. The other terminal of the secondary 10 is connected with one terminal of this receiver 16 and the second terminal of receiver 16 is connected through wire 17 with the line wire 2.

I will first describe the working of the calling-up device: The line is, as was clearly stated, normally closed through the batteries 3 and 4. It is true that one of the batteries 3 or 4 may be omitted, but it was found in practice that it is best to provide each terminal of the line with a battery, for the reason that when a break occurs in the middle of the line, the ringing-up device of that part, minus the battery, would be entirely useless, whereas now both halves, even if they are severed from each other, may be worked independently of each other. The batteries 3 and 4 are in series, so as to augment each other. The coil 5 of each station is, therefore, normally energized and the armature of the bell arrangement 6 is also drawn toward the core of this coil and is, therefore, as illustrated in the drawing, in contact with the bell proper. If now an operator desires to call up a station, he first opens his key. Through the opening of his key, the continuity of the line is broken and the electro-magnet 5 is deenergized. The operator then presses and releases the key as often as he desires to strike the bell of the station called. It is supposed that the operator at A desires to call up the station B and that the signal for said station is three strokes. He opens his key and presses the lever, so as to close the circuit and releases the same then, so as to open the circuit, which manipulation will result in one stroke. He repeats this operation, two calls therefore giving three strokes or rings and at the last stroke, he closes the key entirely. The operator at B will thereby be notified that he is wanted. As to the transmitting arrangement, it is clearly shown by the drawing, that the shunt comprising the micro-phone 8 and primary 9 is normally open, thus for the reason that the coils 5 should

receive all the current as long as they may be needed for the calling-up. When, now, the operator at B has answered that he is ready, both the operators, at station A as well as station B, remove the receiver 16 from the hook 12. This operation results in the contacting of the hook 12 with the point 13, thereby closing the shunt including the transmitting device. Both operators then use the phone in the usual manner.

It must be stated here, that normally, that is, when the line is out of use, the secondary 10 and therefore the receiver 16 is not connected to the line, for the reason that where there are a multitude of stations, the connection of the receiver and secondary either in series to the line or in multiple arc thereto, is a great drawback and is the cause of the speech being less distinct. In my arrangement, no matter how many stations are connected to the line, the line is normally minus all the receivers and secondaries, and when the line is in use, only the two stations conversing have the secondary and phone connected to the line in multiple arc. No other path, therefore, is present. When the operator has removed his receiver from the hook, the connection of the hook with the contact 15 is established and the impulses generated in 10, say at station A, will flow from 10, through condenser 14, point 15, lever 12, wire 11, line wire 1, and will return through the receiver at the other station and through line wire 2 to wire 17 and receiver of the home instrument, and as the condensers 18 are better paths than the coils 5, the telephonic impulses will be able to flow,—without interruption and without impedance,—from one station to a second station. It may be said that the impulses generated at 10 may take the short path from station A through the battery 3 and will not flow over the line. It is, therefore, necessary to provide the terminals of the circuit with impedances, opaque to the flow of the telephonic impulses and I have provided

for each battery such impedances and designated the same by the numerals 20 and 21.

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

1. A telephonic circuit, a series of sub-stations in multiple arc therefor, each of said sub-stations provided with a single-stroke bell, the coil thereof connected permanently in series to the line and a key to open and close said circuit, in combination with batteries normally connected to terminals of said circuit and means to prevent the flow of the current in its entirety through the terminals of the line, during the time that one or the other of said sub-stations is in use.

2. In a telephonic circuit, a series of stations, each station comprising transmitting and receiving devices and also comprising an annunciating device, the circuits for both the transmitting and receiving devices normally open and adapted to be closed through the movement of a switch, the annunciating device normally in series with the line, the circuit of the transmitting device shunting the coil of the annunciating device, in combination with telegraphic keys inserted in the line in series and adapted, through their movement, to operate the annunciating devices of the different stations.

3. A telephonic circuit, a battery for each terminal thereof, a single-stroke-bell in series thereto, a telegraphic key in combination with said bell, a telephonic transmitter and a primary of an inductorium in shunt to the coil of said bell, the secondary of the inductorium and telephonic receiver in multiple arc as to said circuit.

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

ISIDOR KITSEE.

Witnesses:

MARY C. SMITH,
EDITH R. SHELLEY.