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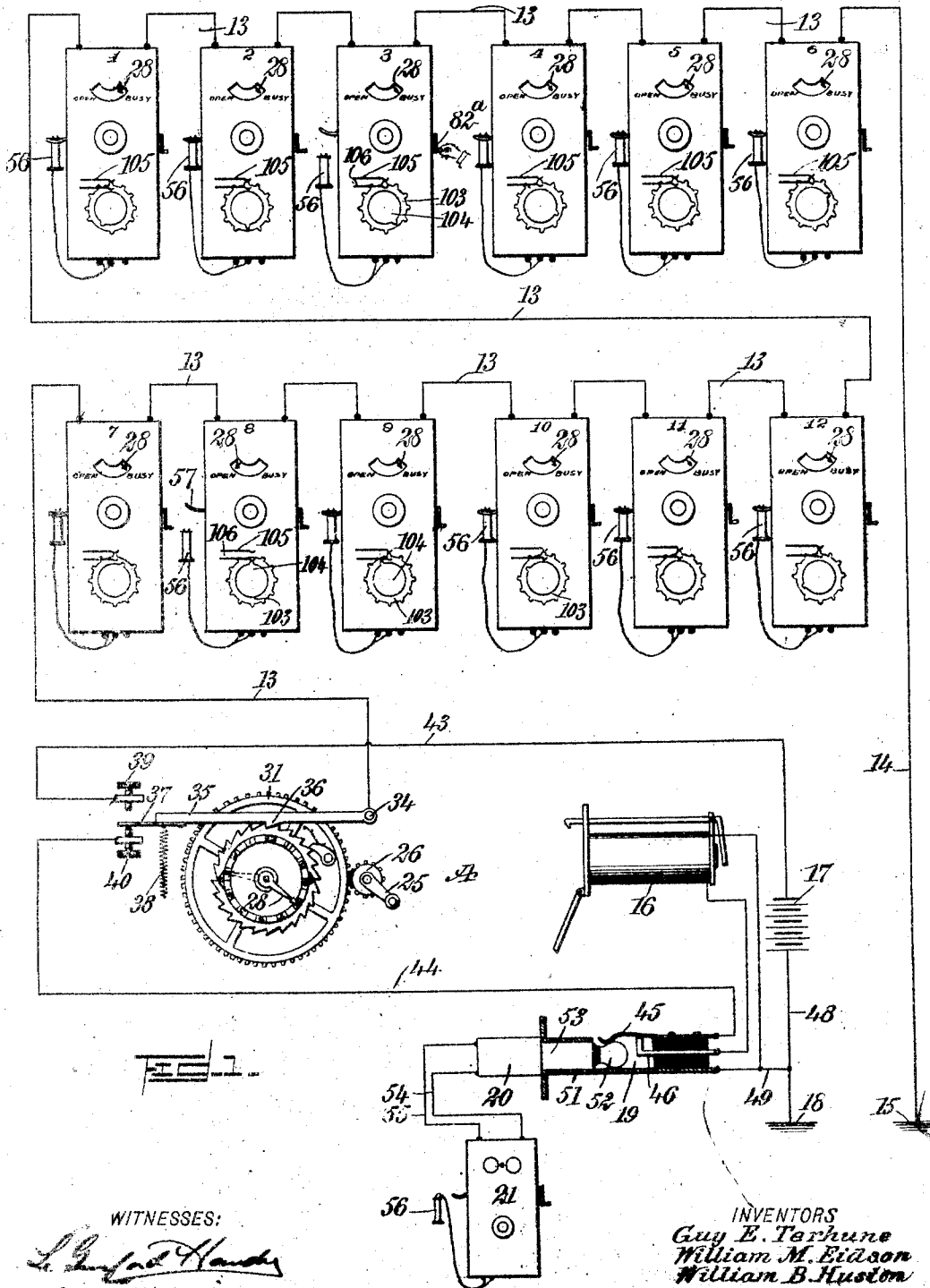
PATENTED MAY 21, 1907.

G. E. TERHUNE, W. M. EIDSON & W. B. HUSTON.

PARTY LINE TELEPHONE SYSTEM.

APPLICATION FILED NOV. 11, 1905.

4 SHEETS—SHEET 1.



WITNESSES:

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Walton Harrison

INVENTORS

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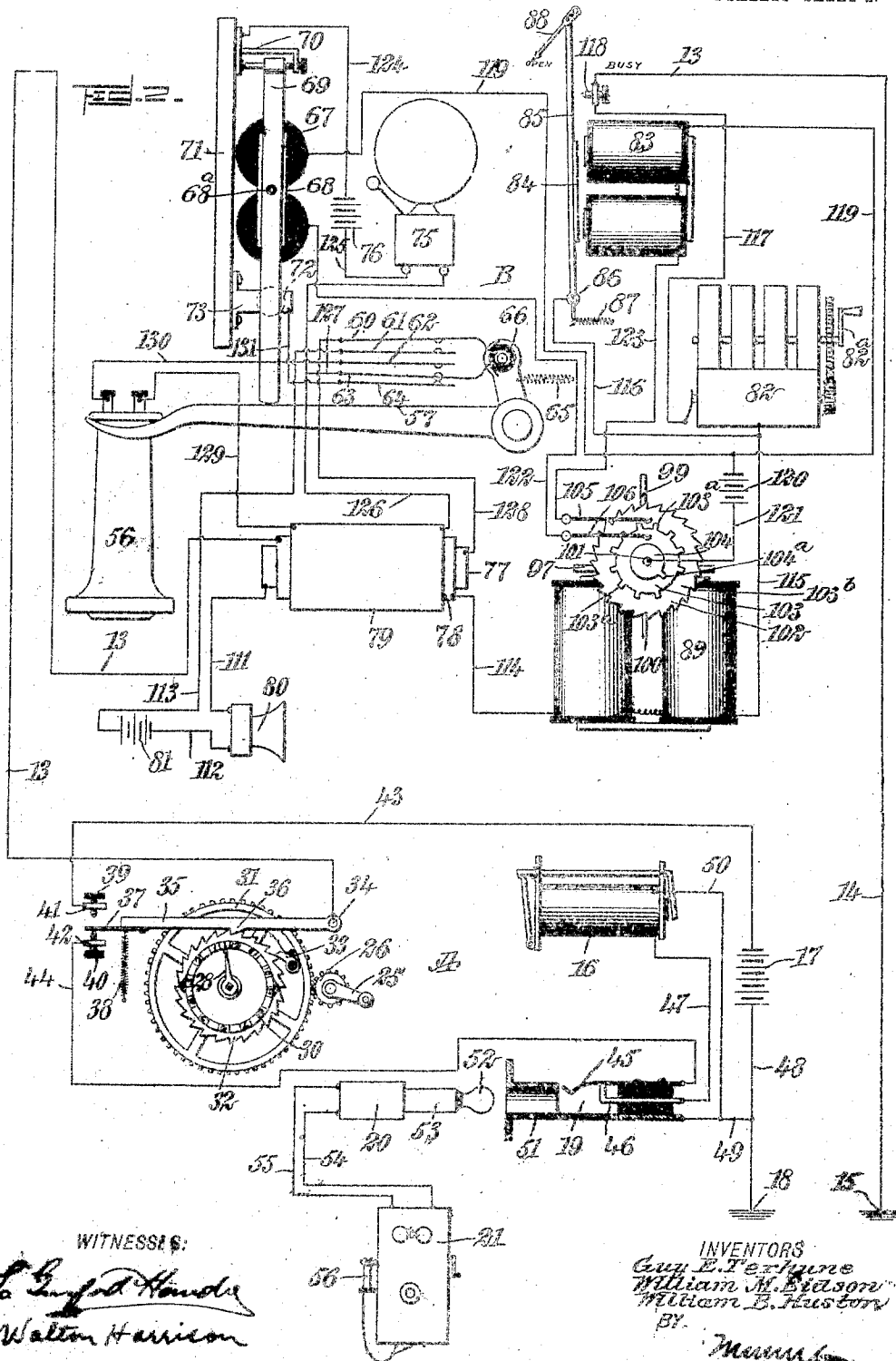
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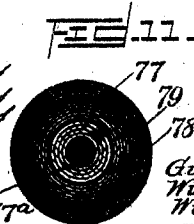
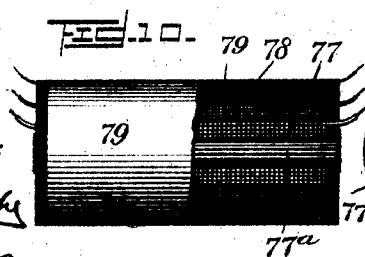
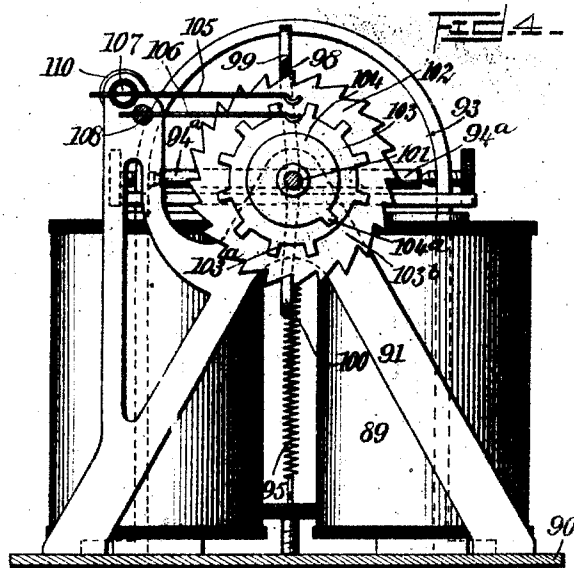
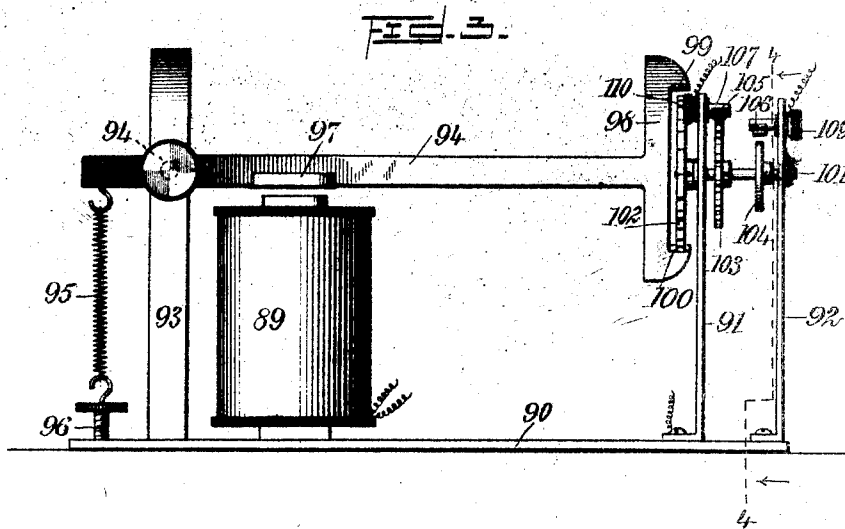
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4 SHEETS—SHEET 3.



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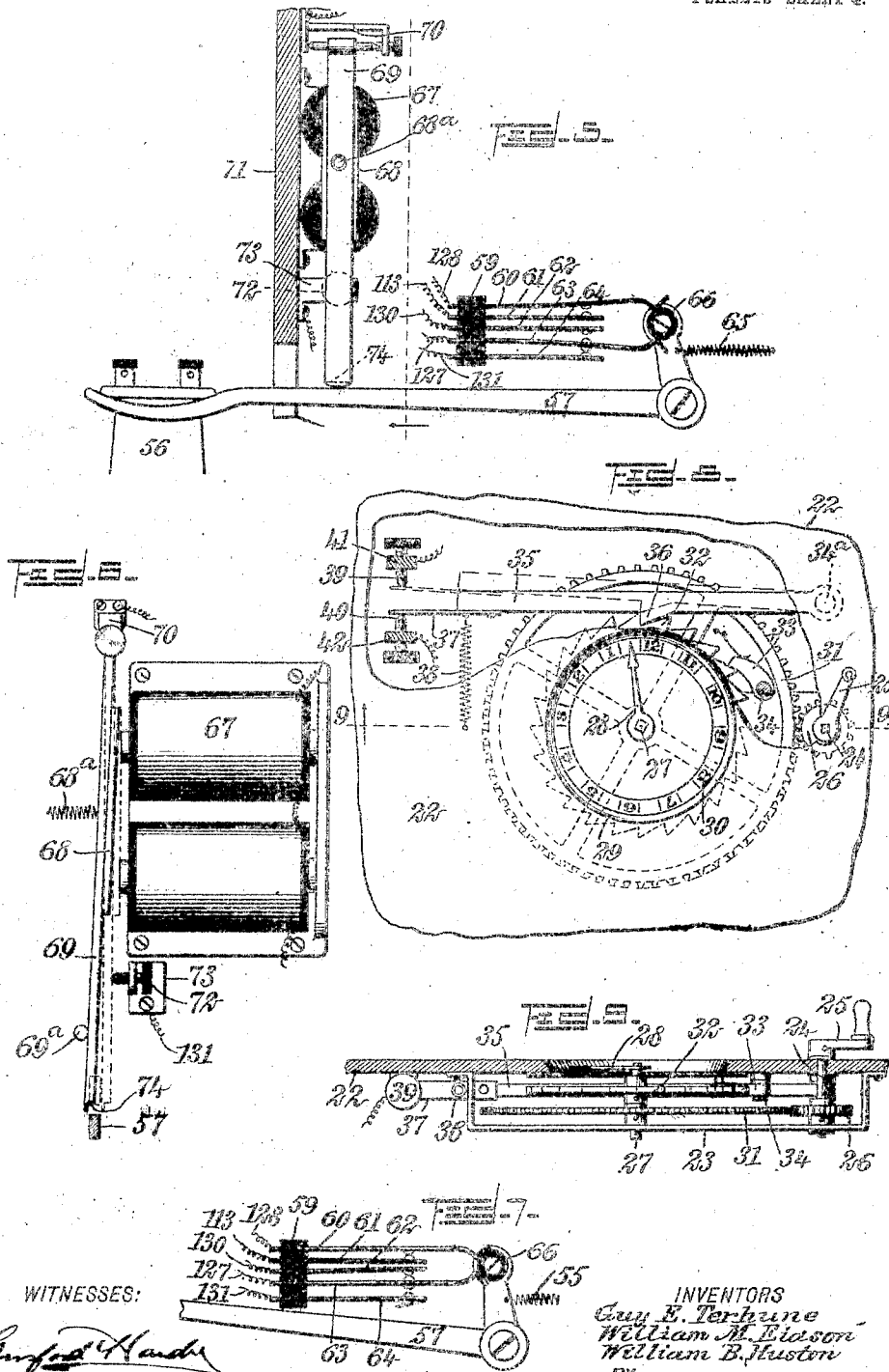
PATENTED MAY 21, 1907.

G. E. TERHUNE, W. M. EDISON & W. B. HUSTON.

PARTY LINE TELEPHONE SYSTEM.

APPLICATION FILED NOV. 11, 1905.

4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

GUY E. TERHUNE, WILLIAM M. EIDSON, AND WILLIAM B. HUSTON, OF
WILLOW HILL, ILLINOIS.

PARTY-LINE TELEPHONE SYSTEM.

No. 854,543

Specification of Letters Patent.

Patented May 21, 1907.

Application filed November 11, 1905. Serial No. 286,855.

To all whom it may concern:

Be it known that we, GUY E. TERHUNE, WILLIAM M. EIDSON, and WILLIAM B. HUSTON, citizens of the United States, and residents of Willow Hill, in the county of Jasper and State of Illinois, have invented a new and Improved Party-Line Telephone System, of which the following is a full, clear, and exact description.

Our invention relates to telephony, and more particularly to a system for accomplishing the following purposes, to wit: 1. To provide an efficient and simple lockout for preventing eavesdropping and interruption in conversation; 2. To conceal the identity of such stations as may be busy, thereby preventing operators at other stations from ascertaining or inferring what persons are talking; 3. To bring all business of the line under direct surveillance of the operator at the central station, thereby facilitating the ascertainment of tolls; 4. To provide a selective call which disturbs no station except those desired; 5. To provide certain constructional details looking toward simplicity, positiveness of action, and general efficiency of the party line.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a diagram of the wiring connecting together the several subscribers' stations and the central station; Fig. 2 is a diagram of the wiring peculiar to a subscriber's station and showing the connections of this wiring with the central station A; Fig. 3 is a side elevation of the contact mechanism used at each subscriber's station, and of the means for actuating the same step by step; Fig. 4 is a vertical section upon the line 4-4 of Fig. 3, looking in the direction of the arrows, and showing the details of the contact mechanism and of the step by step movement for actuating the same; Fig. 5 is a fragmentary elevation, partly in section, of the switch hook, the contact mechanism therefor, and the lockout for preventing the switch hook from rising; Fig. 6 is a front elevation of the magnetically operated lockout mechanism; Fig. 7 is a fragmentary detail, showing the normal and abnormal contacts operated by movements of the switch hook; Fig. 8 is a fragmentary elevation of the

calling mechanism used by the central station, this calling mechanism including an indicating dial; Fig. 9 is a horizontal section upon the line 9-9 of Fig. 8, looking in the direction of the arrow and showing the details whereby the calling mechanism is enabled to throw successive electrical impulses into the line; Fig. 10 is an elevation, partly in section, of the induction coil used in our system; and Fig. 11 is a vertical transverse section through the induction coil.

The several telephones numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12, located at the several subscribers' stations, are shown in the upper portion of Fig. 1. These telephones are connected in series with each other and with the central station A shown in the lower part of this figure by means of line wires 13. The last station of the series is connected with the ground 15 by means of a ground wire 14. At the central station A is located a drop 16, a main battery 17 grounded at 18, a jack 19, a jack plug 20 and an operator's telephone 21. Mounted upon a board 22 (see Figs. 8 and 9) is a frame 23, and journaled within the frame and board is a revoluble shaft 24 provided with a hand crank 25. Mounted rigidly upon the shaft 24 is a pinion 26. Another revoluble shaft 27 is provided with a needle 28 which moves around over a dial 29 provided with ordinals respectively representing the several subscribers' stations. Mounted rigidly upon this shaft 27 is a gear 31 which meshes with the pinion 26. A toothed wheel 32 is also mounted rigidly upon the shaft 27 and is engaged by a spring-pressed pawl 33 as will be understood from Fig. 8, this pawl being supported upon a pin 34. A contact lever 35 is journaled at 34 and is provided with a detent 36 which is caused to oscillate when the toothed wheel 32 is rotated as will be understood from Fig. 8. A spring contact tongue 37 is mounted upon the outer or free end of the lever 35. A spiral spring 38 tensions the contact lever 35, normally maintaining it in its lowermost position. Contact screws 39, 40 are respectively disposed above and below the contact tongue 37 and are mounted upon metallic lugs 41, 42. When the crank 25 is rotated by hand the spring tongue 37 is caused to engage and disengage the contact screws 39, 40 as indicated by dotted and full lines in Fig. 8. The lug 41 is connected by a

wire 43 with the main battery, and the lug 42 is connected by a wire 44 with the contact spring 45 of the jack 19. The contact plate 46 of this jack is connected by a wire 47 with the drop 16, a wire 48 connects the main battery 17 with the ground 18, a wire 49 connects the sleeve 51 of the jack 19 with the ground wire 48, and a wire 50 connects the wire 49 with the drop 16. The plug 20 is provided with a tip 52 and with a cylindrical contact 53. This plug is connected by wires 54, 55 with the operator's telephone 21. The receivers are shown at 56 and are mounted respectively upon switch hooks 57. A bracket 59 immediately above each switch hook 57 is provided with spring contact members 60, 61, 62, 63 and 64. The spring contact members 63 and 64 constitute the so-called normal contact, the other spring contact members together constituting two abnormal contacts which are closed when the receiver 56 is removed from the hook. Each switch hook is provided with a spring 65 whereby it is retracted, and is also provided with a pressure roller 66 of insulating material for increasing and decreasing the distance between the spring contact members 60 and 63, as will be understood from Figs. 5 and 7. A magnet 67 is provided with an armature 68, the latter being retracted by means of a spring 68^a and normally occupying the position indicated in Fig. 6. The armature 68 is mounted upon the lockout lever 69, the latter being journaled upon a bracket 70 and adapted to swing slightly. The bracket 70 is mounted upon a board 71. The lockout lever 69, when in its normal position, engages a stop pin 69^a, and while in this position prevents the switch hook 57 from rising. A contact screw 72 is threaded through a bracket 73 and disposed adjacent to the magnet 67. In order to enable the lockout lever 69 to be more effective in holding down the switch hook 57 it is provided with a notch 74 as indicated in Fig. 6. The subscriber's bell is shown at 75 and a local battery at 76. The purpose of the notch 74 is to catch the switch hook 57 and prevent the same from rising should the receiver be removed by a subscriber while the mechanism is working. That is, if a subscriber should seek to "catch in" as his unlocking position is passed over. The three windings 77, 78 and 79 are mounted upon a core 77^a, and together constitute an induction coil, the details of which are shown more particularly in Figs. 10 and 11. The transmitter is shown at 80 and the transmitter battery at 81. The magneto-generator is shown at 82 and may be provided with a handle 82^a and otherwise of ordinary construction. At 83 is shown a magnet provided with an armature 84, the latter being mounted upon an arm 85 which is journaled at 86 and is tensioned by means of a

spring 87. An indicating needle 88 is connected with the arm 85 and is adapted to swing when the magnet 83 is energized. Because of the tension of the spring 87 the arm 85 and the needle 88 normally occupy the position indicated in Fig. 2. The needle 88 when in its normal position, that is, when swung to the left according to the view shown in Fig. 2, indicates to the subscriber at that station that the line is open for business, but when swung in the opposite direction, or to the right of the position indicated in Fig. 2, the needle indicates that the line is busy. Appropriate legends "open" and "busy" are, therefore, employed as indicated in Fig. 2, for apprising the subscriber of the condition of the line. The step by step contact mechanism located at each subscriber's station is shown in Fig. 3. A magnet 89 is mounted upon a base 90, and upon this base are two vertical plates 91, 92. A bracket 93 is likewise mounted upon the base 90. Journaled within this bracket and supported thereby is a lever 94, supported upon a trunnion 94^a, provided with a spring 95 which engages an adjustable screw 96 by means of which the tension of the spring may be regulated at will. Mounted upon the lever 94 is an armature 97 for the magnet 89. The lever 94 terminates in a head 98 provided with bevels 99, 100. A revoluble shaft 101 is journaled upon the vertical plates 91 and 92. A toothed wheel 102 is rigidly mounted upon this revoluble shaft and is so located as to be engaged alternately by the bevels 99 and 100 in such manner as to rotate step by step when the lever 94 moves up and down within a vertical plane. A contact wheel 103 is provided with a number of contact points 103^a disposed equidistant. The number of contact points 103^a is one less than the number of subscribers' stations. At 103^b is a blank space as if one of the contact points 103^a had been broken away or omitted. A contact wheel 104 is likewise mounted rigidly upon the revoluble shaft 101 and is provided with a single contact point 104^a.

As may be seen by referring to the upper portion of Fig. 1, the several contact wheels 103 at the different subscribers' stations are so positioned relatively to each other that the blank spaces 103^b are disposed at different angles. For convenience, these spaces may be arranged as shown, each successive station having its contact wheel 103 so positioned that the several spaces or blanks 103^b of one subscriber's station is one-twelfth of a revolution removed from that of the next succeeding subscriber's station. This may be seen by comparing the relative positions of the several contact wheels 103 as shown at the stations numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 in the upper portion of Fig. 1. Somewhat similarly the contact wheels 104 at these stations are so arranged that the sin-

gle contact points 104* at the respective stations are displaced to some extent as between two consecutive stations, the idea being that at one subscriber's station the contact point 104* may be directed downward, whereas at the next succeeding subscriber's station the contact point is moved angularly a little to the right, and at the next subscriber's station the single contact point is moved still farther to the right, and so on throughout the series. Mounted above the contact wheel 103 is a contact spring 105, and above the contact wheel 104 is another contact spring 106, these springs being supported upon posts 107, 108 which are provided, respectively, with binding posts 109, 110 (see Fig. 3). The transmitter 80 is connected by a wire 111 with the winding 77, and by a wire 112 with the battery 81. This battery is connected by a wire 113 with the contact spring 61. The winding 78 is connected by a wire 114 with the magnet 89. From the magnet 89 a wire 115 leads to the generator 82. Connected with the wire 115 is a wire 116 which leads up to the rocking arm 85. From the generator 82 a wire 117 leads to a contact 118. Connected with the magnet 83 is a wire 119 and a battery 120. Through a wire 121 the battery 120 is in communication with the shaft 101, and consequently with the contact wheels 103, 104. The contact spring 106 is connected by a wire 122 with the magnet 67. The contact spring 105 is connected by a wire 123 with the magnet 83. The bracket 70 supporting the lockout arm 69 is connected by a wire 124 with the battery 76. This battery is in communication with the bell 75 by means of the wire 125. From this bell a wire 126 leads to the contact spring 63. This contact spring is also in communication with the outer winding 79 by means of the wire 126. The spring tongue contact 60 is connected by a wire 128 with the inner winding 77. The receiver is connected by a wire 129 with the outer winding 79. The receiver is also connected by means of a wire 130 with the contact spring 62. The lug 73 holding the contact screw 72 is connected by a wire 131 with the contact spring 64.

The operation of our system is as follows: Suppose that subscriber No. 3 desires to communicate with subscriber No. 8. He is unable to do this directly, for the reason that while he can remove his receiver 56 his switch hook 57 is unable to rise to its abnormal position, owing to the action of the lockout arm 71. (See Figs. 5 and 6). His generator 82 is free, however, and by grasping the handle 82* and actuating the generator a number of times corresponding to the number of his station, he is able to apprise the central operator as to the number of the calling station. In the instance under consideration he rings three times. The first impulse made by the

generator of the calling subscriber throws the drop 16 and attracts the attention of the operator at the central station, the two succeeding impulses merely causing the drop 16 to click twice, or serving in any other appropriate manner to inform the central operator as to the total number of impulses.

The generator circuit is as follows:—ground 18 at the central station, wires 49, 50, drop 16, wire 47, contact members 46, 45 of jack 51, wire 44, contact members 40, 37, arm 35, and line 13 to subscribers' stations in series.

The circuit through each subscriber's station is as follows: winding 78, wire 114, magnet 89, wire 115, generator 82, wire 117 to line 13, and ultimately through ground wire 14 to ground 15. The operator at the central station being thus apprised that subscriber No. 3 desires to communicate with some person inserts the plug 20 into the jack 19, thereby throwing into circuit the operator's telephone 21, and removing the receiver 56 turns the handle 25 a sufficient distance to bring the needle 28 over No. 3, designating the calling station. In doing this, the rotation of the pinion 26 and of the gear 31 causes the toothed wheel 32 to raise and lower the contact lever 35 several times, thereby sending the number of successive impulses over the line. The circuit of these impulses is as follows:—ground 18, wire 48, main battery 17, wire 43, contact members 39, 37, contact lever 35, line wire 13, and thence in series through the several subscribers' stations; the circuit continuing as follows: winding 78, wire 114, magnet 89 wire 115, generator 82, wire 117, line wire 13, and thence ultimately to ground 15. Each impulse thus sent over the line by the central operator energizes the magnet 89 at each subscriber's station, and each impulse causes this magnet to pull the rocking lever 94 downward and then allow it to resume its normal position. The result is that the bevel edges 99, 100 turn the toothed wheel 102 step by step, the amount of rotation of this wheel corresponding to that of the wheel 32 at the central station. At the instant when the needle 28 at the central station rests upon the ordinal 3, the revolvable shaft 101 at station No. 3 is in such position that the contact wheel 103 presents the blank or space 103^b to the contact spring 105, and at the same instant the contact wheel 104 presents the contact tooth 104* to the contact spring 106. It is evident that this relative arrangement of the contact wheels 103, 104, and the contact springs 105, 106 cannot occur at more than one subscriber's station at a time. In other words, when the contact tooth 104* engages the spring 106 and the contact spring 105 rests within the blank space 103^b at station No. 3, it is clear that at no other subscriber's station can the contact tooth 104* engage the contact spring 106, nor can the contact spring 105 be out of

electrical communication with the contact wheel 103. Hence, the condition of the local circuits controlled by the contact wheels 103, 104 is different at the subscriber's station just answered by the central operator than at the other subscribers' stations.

The last impulse passing over the line from the central station, and leaving the contact wheels 103 and 104 at station No. 3 in the condition above described, completes a local circuit at station No. 3 as follows: battery 120, wire 121, shaft 101, contact wheel 104, contact tooth 104^a, contact spring 106, wire 122, magnet 67, wire 119, back to battery 120. This energizes the magnet 67 and causes it to attract its armature 68, thereby drawing the lockout arm 69 so as to remove it from the path of the switch hook 57. The movement of the contact arm 69 against the contact screw 72 (see dotted lines in Fig. 6) completes another local circuit, as follows: battery 76, wire 124, bracket 70, lockout arm 69, contact screw 72, wire 131, contact spring 64, contact spring 63, wire 127, bell 75, wire 125 back to battery 76. This rings the bell 75 continuously, for the reason that the circuit last described remains closed. The subscriber at station No. 3 hearing the continuous alarm given by his bell 75 now lifts his receiver 56 off the switch hook 57 in the usual manner.

As above described, the lockout arm 69 is no longer within the path of the switch hook 57, and the switch hook therefore rises so as to open the normal contact and to close the abnormal contacts as will be understood by contrasting Figs. 5 and 7. The talking circuit between the subscriber at station No. 3 and the operator at the central station is now established, as follows: ground 18, wire 49, sleeve 51, wire 54, telephone 21, wire 55, tip 52, contact member 45, wire 44, contact members 40 and 37, lever 35, line wire 13 to subscriber's station No. 3, winding 78, wire 114, magnet 89, wire 115, generator 82, wire 117, thence through line wire 13 and ultimately through ground wire 14 to ground 15. The winding 78, acting inductively upon the winding 79, induces talking currents through the following circuit. Receiver 56, wire 130, contact spring 62 (see Fig. 7) contact spring 63, wire 127, wire 126, winding 79, wire 129 back to receiver 56. The circuit through the receiver 56 is therefore local.

The transmitter circuit at station No. 3, is as follows: transmitter 80, wire 112, battery 81, wire 113, contact spring 61 (see Fig. 7), contact spring 60, wire 128, winding 77, wire 111 back to transmitter 80. The transmitter circuit is therefore also local. At station No. 3 the circuit through magnet 83 is necessarily open, owing to the fact that, at this station only, the spring 105 makes engagement for the time being with the contact wheel 103. This is because of the space 103^b. Hence, at

station No. 3 the magnet 83 is unable to draw the arm 85, and as a consequence the indicating needle 88 occupies the position indicated in the upper portion of Fig. 2, resting upon the legend "Open." At each of the other subscribers' stations, however, the condition of the contact wheels 103, 104 is such that the condition of the circuits controlled by these contact wheels is reversed as compared with the condition of those circuits at station No. 3. That is to say, at all stations except station No. 3 the local circuit controlled by contact spring 106 is now open, whereas the local circuit controlled by the contact spring 105 is now closed. This is necessarily so, for the reason that at all stations except No. 3 the contact spring 105 rests upon some one of the contact points 103^a. (See upper portion of Fig. 1.) At each station other than No. 3, the circuit is now completed as follows:—battery 120, wire 121, shaft 101, contact wheel 103, contact spring 105, wire 123, magnet 83, wire 119, back to battery 120. This energizes the magnet 83 and causes the arm 85 to throw the indicating needle 88 to the right, according to the view shown in Fig. 2, so that the needle 88 will rest upon the legend "Busy." Hence, at each subscriber's station, except station No. 3, the "busy" signal is displayed for the time being, whereas at the station No. 3 the indication is given as "open." Subscriber No. 3 now tells the central operator that he desires to communicate with some other subscriber, say at station No. 8. The operator at the central station thereupon rotates the crank 25 until the needle 28 rests upon the number of the station desired. In the present instance, the needle rests upon the ordinal 8. (See position of the needle 28 in full lines, Fig. 1.) In doing this, the operator at the central station now sends a number of impulses over the line, energizing and deenergizing the several magnets 89 at the respective stations as above described. In doing this, the contact wheels 103, 104 at all of the subscribers' stations are turned, and consequently at station No. 3 the contact is broken between the contact spring 106 and the contact tooth 104^a, so that the magnet 67 at that station no longer restrains the lockout arm 69. The latter thereupon tends to return to its normal position, but as the subscriber has already removed his receiver 56, and consequently his hook 57 is in its uppermost position, the tendency of the lockout arm 69 to return to its normal position does not disturb the connection of the subscriber at this station.

As the contact wheels 103 and 104 at each station turn step by step, the several lockout arms 69 at the subscribers' stations are successively moved toward the magnets 67, which movement is only momentary and does not afford time for any subscriber to re-

move his receiver. The result is that to all intents and purposes the receiver hooks at all of the stations continue locked. The requisite number of impulses having been given as above described, the contact wheels 103 and 104 at station No. 8 are brought into the position indicated in Fig. 1. The contact wheel 104 being now in communication with the contact spring 106, and communication being broken between the contact spring 105 and the contact wheel 103 at the station called, the result is that the magnet 83 at that station being under the control of the contact spring 105, and consequently not being energized, leaves the arm 85 and the indicating needle 88 in the position indicated in Figs. 1 and 2. "In this position the needle 88 indicates "open." At the other subscribers' stations, including station No. 3; the needle 88 indicates "busy" as above described. At station No. 8 the engagement of the contact tooth 104^a with the contact spring 106 energizes the magnet 67 as above described with reference to station No. 3. In energizing the magnet 67 the switch hook 57 of that station is unlocked, so that the operator may remove the receiver 56. The engagement of the lockout arm 69 at the called station (No. 8) with the contact screw 72, completes the circuit of the battery 76 through the bell 75 as above explained, thereby ringing this bell continuously so long as the receiver 56 at that station remains on the hook. When, however, the receiver in question is removed, the action of the bell 75 is stopped by disengaging the normal contact members 63 and 64, thus opening the bell circuit. Conversation may now take place between the subscriber at station No. 3 and the subscriber at station No. 8. The conversation being finished, the subscriber at station No. 3 merely hangs up his receiver, thus restoring the normal connection. The subscriber at station No. 8 now grasps the handle 82^a of his generator 82, as indicated in Fig. 1, and rings off. If he fails to do this and hangs up his receiver 56, he merely closes the bell circuit which, it will be remembered, he opened by removing his receiver. If, therefore, he merely hangs up his receiver and starts to leave the telephone, his bell reminds him that he has failed to ring off. In order to ring off he merely sends an impulse from his generator 82 over the line, and this actuates the drop 16 or other appropriate mechanism at the central station. The central operator in order to ring off merely turns the handle 25 a distance sufficient to remove the indicating needle 28 from the ordinal 8 upon which it rests to a point intermediate of any two successive ordinals. A comparatively small degree of rotation will suffice for this purpose. All that is necessary is to turn the toothed wheel 32 a sufficient distance to break engagement be-

tween the tooth 104^a and the contact spring 106 at station No. 8.

It will be noted that whenever two subscribers' stations are connected for conversation so that the "busy" signal is displayed all along the line except at one station, the arm 85 at each station except one engages the contact screw 118. This is a necessary incident to the display of the "busy" signal. (See Figs. 1 and 2.) The engagement of the arm 85 with the contact screw 118 closes the line in front of the generator and thereby incapacitates the generator from affecting the line when the line is busy. Hence, when two subscribers are conversing no other subscriber can so actuate his generator as to cause annoyance. That is to say, the circuit through the subscriber's station at which the "busy" signal is displayed, is as follows:—line 13, winding 78, wire 114, magnet 89, wire 115, wire 116, arm 85, contact screw 118 to line 13. This circuit is practically the same as the circuit above described, the only difference being that instead of the current passing from the wire 115 through the generator 82 to the wire 107 it passes from the wire 115 to the wire 116, and thence through the contact arm 85 to the line 13. The release of the line after the ring off by the subscriber at station No. 8 leaves all of the magnets 83 deenergized so that at each station the indication "Open" is displayed. The several magnets 67 are also left deenergized, and therefore the lockout arms 69 are in such position as to prevent removal of any receiver upon the line. The system is now in condition for another subscriber to call.

It will be noted from the above description, therefore, that no subscriber can call any other subscriber upon the same line without apprising the central operator in order that the tolls may be properly charged. Also that the central operator is necessarily informed as to any overtime use of the line in order that a charge may be made as compensation for this overtime. Eavesdropping is completely prevented, for the reason that no subscriber can even ascertain what two stations are engaged in conversation.

Attention is called to the construction and action of the induction coil shown more particularly in Figs. 10 and 11. In this the middle winding 78 is secondary to the primary winding 77 but is primary to the outer winding 79. By using this coil the articulation is rendered much more distinct, and both the transmitter circuit and the receiver circuit are rendered local.

The main purpose in building the induction coil and in connecting the wires as shown is to both diminish and equalize the resistance otherwise offered by the receivers. That is to say, if several receivers are connected upon the main line in the usual man-

ner, and it happens that several receivers are off at the same instant, the ohmic resistance of the line is greatly increased and the service impaired thereby. By using an induction coil and arranging the wiring as shown, the ohmic resistance of the line is comparatively small, and is always practically the same. Any number of receivers may be removed. The reason is obvious—
 10 the receivers are not included directly in the main line, and are acted upon indirectly, through inductive action.

The system is interchangeable and may be employed in a variety of ways. A line of the kind above described may be connected with
 15 other lines of different types or of the same type.

While some parts of the telephone shown are of the Stromberg-Carlson type, we do not limit ourselves to the same, as we may use telephones of other kinds.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:—

25 1. In a party line telephone system, the

combination of a line, a generator for energizing the same so as to signal a distant station, electrically-operated mechanism for indicating that the line is busy, and means controllable by said electrically-operated
 30 mechanism for shortcircuiting said generator when said line is busy.

2. In a party line telephone system, the combination of a busy signal, a lockout, a revoluble member movable step by step,
 35 separate contacts to be opened and closed by movements of said revoluble member, and electric connections from said separate contacts to said busy signal and said lockout for the purpose of controlling the same.

In testimony whereof we have signed our names to this specification in the presence of
 40 two subscribing witnesses.

GUY E. TERHUNE.
 WILLIAM M. EIDSON.
 WILLIAM B. HUSTON.

Witnesses:

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 B. D. NEAL.