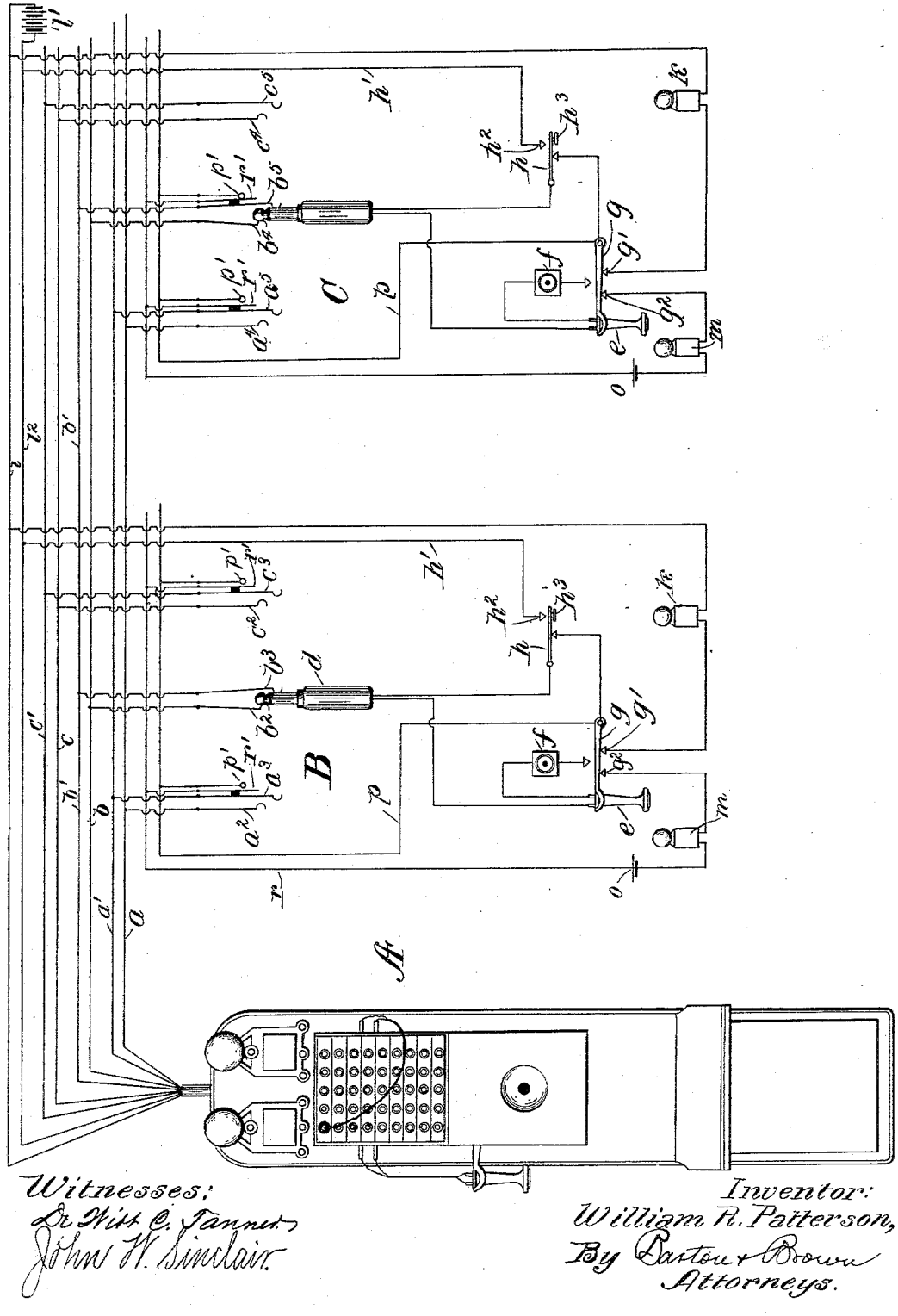
(No Model.)

W. R. PATTERSON.

TELEPHONE SYSTEM.

No. 563,877. Patented July 14, 1896.



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UNITED STATES PATENT OFFICE.

WILLIAM R. PATTERSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN ELECTRIC COMPANY, OF SAME PLACE.

TELEPHONE SYSTEM.

SPECIFICATION forming part of Letters Patent No. 563,877, dated July 14, 1896.

Application filed January 21, 1896. Serial No. 576,256. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. PATTERSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Village or House Telephone Systems, (Case No. 103,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to a village or house telephone system of that class in which a number of telephone-lines extend between the several substations of the system, a telephone-line being individual to each substation, the telephone-lines being provided at each substation with switch-sockets or spring-jacks into which a plug, connected with the substation telephone set, may be inserted to connect the telephone set at will with any one of the telephone-lines, and thus loop two substations together for conversation. In systems as thus constructed it often happens that a subscriber neglects to return the plug to its individual spring-jack after the completion of a conversation, and it is the object of my invention to provide means for sounding a signal when the subscriber hangs up his telephone and has neglected to return his plug to its individual spring-jack. A local circuit is provided in which is included a bell or other signal device, contacts being associated with the spring-jacks in such a manner that, if the plug rest in its individual spring-jack, circuit through the bell will not be closed upon hanging up the subscriber's telephone, while, if the plug rest in any other spring-jack, the circuit through the bell will be closed when the subscriber hangs up his telephone, thus sounding an alarm and calling his attention to the fact that he has neglected to return the plug to its individual spring-jack.

In the particular form of my invention illustrated herein, contacts are provided in connection with each spring-jack except the individual spring-jack, the contacts being closed together when the plug is inserted therein to close the local circuit containing the bell, the circuit being open during conversation at the subscriber's telephone-hook. When the subscriber hangs up his telephone, the continuity of the local circuit is completed, and the bell rings until the subscriber withdraws the plug from the socket and thus separates the contacts to open the local circuit.

I have illustrated my invention in the accompanying drawing, in which is illustrated a telephone system uniting three substations in accordance with my invention.

The telephone-line $a\,a'$ extends to the different substations and is connected with the contact-springs $a^2\,a^3$ at substation B and with the springs $a^4\,a^5$ at substation C. Likewise the telephone-line $b\,b'$ extends to springs $b^2\,b^3$ at substation B and to springs $b^4\,b^5$ at substation C, while the telephone-line $c\,c'$ extends to springs $c^2\,c^3$ at substation B and to springs $c^4\,c^5$ at substation C. The apparatus at substations B and C are indicated diagrammatically while a telephone set as actually employed is illustrated at substation A. At substation B is shown a plug d inserted between the springs $b^2\,b^3$, the contact-terminals of the plug being connected together through the telephone-receiver e, transmitter f, telephone-hook g, and switch h when the receiver e is removed from its hook, the circuit being normally maintained open so long as the telephone-receiver is hung up. The calling-bell k is connected between a contact g', against which the hook g is adapted to rest, and the conductor l, which is connected to one pole of a calling-battery l', the other pole of the battery being connected with a conductor l^2, from which extends a conductor h', terminating in a contact-anvil h^2, into contact with which the lever h may be brought upon the depression of the key h^3. Similar apparatus is provided at each of the other substations, and the apparatus at substation C has been lettered to correspond with that at substation B. The plug of substation B is shown as inserted in its individual socket, the telephone being thus in circuit with the individual telephone-line $b\,b'$ of substation B.

Supposing subscriber C is desirous of conversing with subscriber B. He inserts the plug into the spring-jack connected with the

line $b\,b'$, that is between the springs b^4 and b^5. Subscriber C then depresses the key h^3 and completes the circuit from the calling-battery l' over the line l, through bell k at substation B, contact g', hook g, lever h, sleeve of plug d, contact-spring b^3, limb b' of the telephone-line, line-spring b^5, sleeve of plug d at substation C, lever h, conductor h', back to the opposite side of battery l'. The bell at substation B is thus rung to call the attention of the subscriber, who removes his telephone from its hook and the two subscribers are in conversation over the telephone-line $b\,b'$.

At each substation is provided a signal-bell m, included in a local circuit with a source of electricity, as the battery o, the circuit being traced from the battery o through bell m to contact g^2, switch-hook g, conductor p to the contacts $p'\,p'$, provided upon each of the spring-jacks except the spring-jack individual to the substation. The opposite side of battery o is connected with a conductor r, which extends to the contacts $r'\,r'$, provided opposite contacts $p'\,p'$. When a plug is inserted in one of the spring-jacks, the contacts $p'\,r'$ are closed together, thus completing the local circuit through the spring-jacks, so that should the subscriber hang up his telephone e before returning the plug to its individual spring-jack, the circuit of battery o through bell m will be completed and the bell will ring. Thus should subscriber C hang up his telephone and not remove the plug from between the springs $b^4\,b^5$ the circuit of battery o would be completed through the bell m, contact g^2, switch-hook g, conductor p, contact p', contact r', conductor r, back to the battery. When the plug is removed from between the springs $b^4\,b^5$, the contacts $p'\,r'$ are separated and the local circuit is opened.

In the particular form of my invention which I have illustrated and specifically described I have shown the local circuit controlled by contacts provided at such spring-jacks as are not individual to the line of the particular substation, but it is evident that other arrangement of the contacts may be devised, and I do not limit myself in this particular.

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

1. In a village or house telephone system, the combination with telephone-lines extending to each of a plurality of substations, each telephone-line being provided at each substation with a switch-socket, of a plug at each substation connected with the telephone set and adapted to be inserted into any switch-socket at will to connect the telephone set in circuit with any one of said telephone-lines, a signal device, and a device operated by the return of the telephone to its position of rest for actuating the signal device when the plug is not inserted in its individual socket, substantially as described.

2. In a village or house telephone system, the combination with telephone-lines extending to each of a number of substations, each of said telephone-lines being provided at each substation with a switch-socket, of a plug at each substation connected with the telephone set and adapted to be inserted into the switch-socket of any line to connect the telephone set in circuit therewith, a local circuit containing a signal device, contacts provided in connection with each of the switch-sockets except the individual socket for completing the continuity of said local circuit through the switch-socket, and means operated by the return of the telephone to its position of rest for actuating the signal device when the plug is not inserted in its individual socket, whereby upon the return of the telephone to its position of rest said local circuit will be closed to sound an alarm unless the plug be returned to its individual socket; substantially as described.

In witness whereof I hereunto subscribe my name this 28th day of August, A. D. 1995.

WILLIAM R. PATTERSON.

Witnesses:

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