

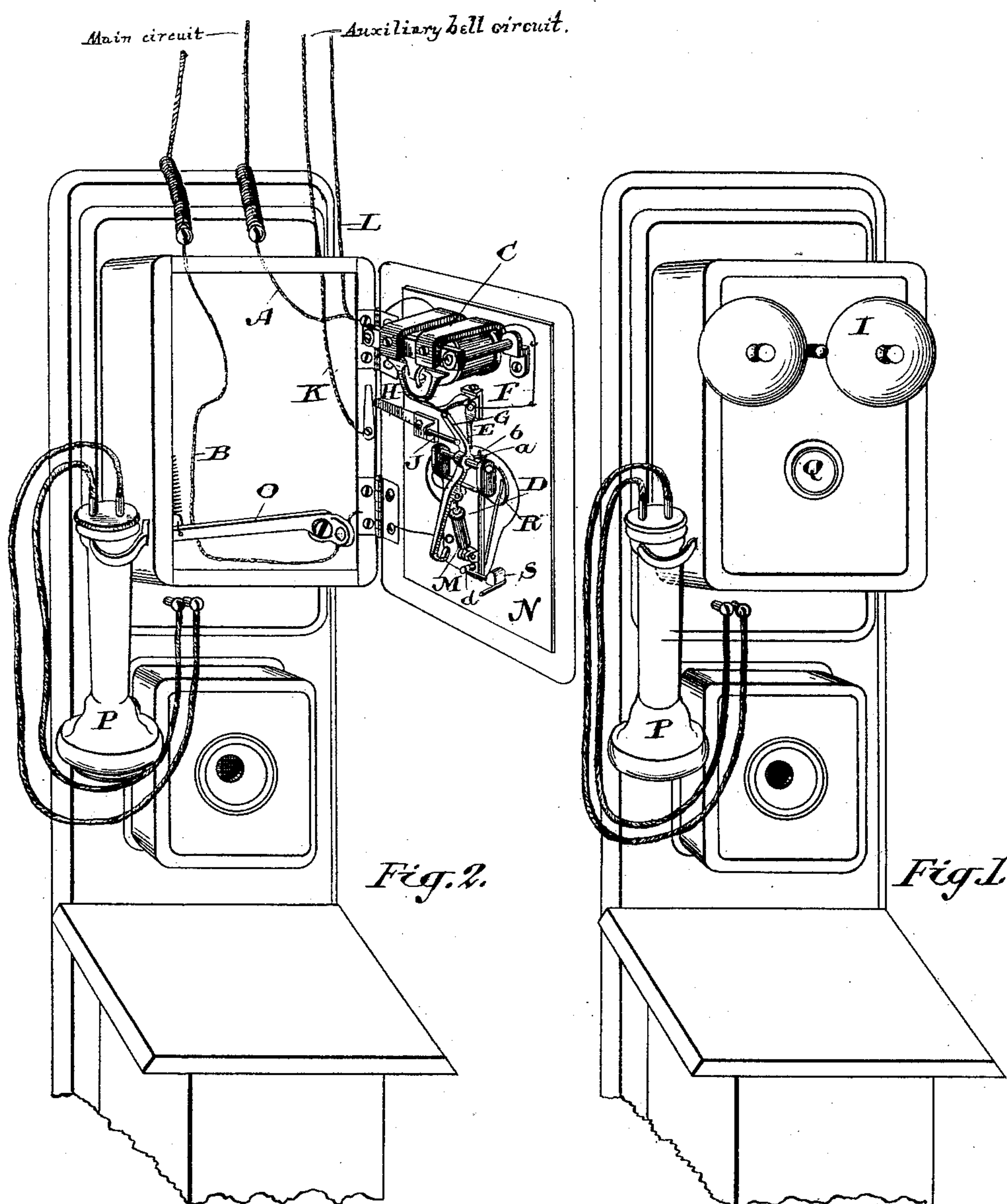
(No Model.)

F. W. A. SCHNEIDER.

ELECTRIC MECHANISM FOR OPERATING TELEPHONE CALL BELLS.

No. 414,085.

Patented Oct. 29, 1889.



Witnesses.

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# UNITED STATES PATENT OFFICE.

FREDERICK W. A. SCHNEIDER, OF TORONTO, ONTARIO, CANADA.

ELECTRIC MECHANISM FOR OPERATING TELEPHONE CALL-BELLS.

SPECIFICATION forming part of Letters Patent No. 414,085, dated October 29, 1889.

Application filed March 11, 1889. Serial No. 302,763. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK WILLIAM AUGUST SCHNEIDER, machinist, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented a certain new and useful Improvement in Electric Mechanism for Operating Telephone Call-Bells, of which the following is a specification.

The object of the invention is to design simple mechanism for operating an auxiliary telephone call-bell and annunciator; and it consists, essentially, of a telephone call-bell and annunciator so connected to the telephonic circuit that upon being signaled its action breaks the circuit leading to the magnets of the call-bell and switches it onto a line leading to the magnets of an auxiliary call-bell situated at a point remote from the telephone.

Figure 1 is an outside view of a telephone, showing the door closed to expose the annunciator. Fig. 2 is a view of the telephone with its door open to expose the signaling mechanism.

The wires A and B represent the line of the telephonic circuit, the wire A connecting directly with the magnets C of the telephone call-bell, while the wire B connects with the said magnets through the following mechanism—that is to say, it first connects with the plate D, which is properly insulated. The spring E, which is connected to the wire F, leading to the magnets C, presses against the pivoted lever G when the said lever is set in the position indicated in Fig. 2, and thus so long as this lever G is in the position indicated the connection of the line A B through the magnets C is complete. To hold this lever G in the position shown, a notch is made in the armature H. When the signal is given from the central station of the telephonic circuit, the magnets C are magnetized and the call-bell I is actuated in the ordinary manner. The magnetizing of the magnets C draws the armature H away from the end of the lever G, which lever, being weighted at its other end, moves back on its pivot, so as to leave the spring E clear when the said lever moves clear of the spring E, and thus breaks the circuit to the magnets C. As the lever G is electrically connected with the

plate D, a circuit is formed when the said lever comes in contact with the pin J, which is properly insulated and electrically connected with the wire K, which leads to an auxiliary call-bell situated at a point remote from the telephone. The wire L, leading from the magnet C, connects with the auxiliary call-bell, and thus the circuit which previously operated the call-bell I is connected so as to operate the call-bell when the signal is next given.

In order to prevent the instantaneous breaking of the circuit through the spring E, I provide a small cylinder M, in which a piston connected to the lever G is fitted, so as to form an air or oil cushion and prevent the lever falling away from the spring E too quickly.

I should mention that when the door N is closed the lower end of the lever G projects over the lever O.

From this description it will be seen that the first signal from the telephonic circuit is announced through the call-bell I, and by the time that this first signal is given the circuit for operating the call-bell I is broken and a fresh circuit formed through the auxiliary call-bell, which call-bell would then announce the next signal given from the other end of the telephonic circuit.

When the lever G falls, as before described, it rests upon the top of the lever O, when the said lever is held down by the weight of the receiver P. When the receiver P is taken off the lever O, the said lever springs up in the usual manner, and, acting against the lever G, tilts it upon its pivot so as to bring its end into the notch made in the armature H, and thus hold it in the position indicated in Fig. 2, the lever G resuming contact with the spring E; consequently the removal of the receiver P from off its hook re-forms the circuit, so that the next signal will act upon the call-bell I. As a signal cannot be given twice in succession on the call-bell I without the removal of the receiver P, so as to permit the lever G to reset the mechanism, as described, it is necessary to provide means for indicating the condition of the mechanism for operating the call-bell. With that view I make a hole Q through the door N, and behind this hole I pivot an indicating-plate R.



This indicating-plate has two colors painted on it, one color—say blue—to indicate that the mechanism is set to operate the call-bell I, while the other color—say white—is intended to indicate that the mechanism is set to operate the auxiliary call-bell.

As shown in Fig. 2, the plate R is set to indicate the blue signal, and is held in position by the pin *a*, which is fixed to the lever G, and projects behind the pin *b*, fixed to the indicating-plate R. *d* is the pivot-point of the plate R, from which pivot a weighted arm S, fixed to the annunciator-plate R, projects. The arm S is shaped so that it will project over the top of lever O when the door N is closed. When the first signal is sounded and the lever G is caused to rock on its pivot, as before described, the pin *a* is carried away from the pin *b*, and the weighted arm S causes the indicating-plate R to rock on its pivot and bring the white signal in front of the hole Q, thus indicating that the mechanism is set for operating the auxiliary bell instead of the bell I. When the receiver P is removed and the lever O is lifted, the said lever comes in contact with the arm S, forcing it upwardly, so as to bring the indicating-plate R back into its initial position, the pin *a* being simultaneously brought in front of the pin *b*, and thus the whole mechanism described is reset by the action of the said lever O.

What I claim as my invention is—

1. A telephone call-bell, a main circuit passing through the coil of the magnet thereof, an auxiliary call-bell at a point remote from the telephone-bell, and a branch circuit leading from the telephone to the auxiliary call-bell, in combination with an automatic switch for directing the current from the main call-bell to the auxiliary call-bell, and a switch operated by the weight of the receiver for returning the current to its original course, substantially as described.

2. A telephone call-bell, a main circuit passing through the coil of the magnet thereof, and a branch circuit to an auxiliary call-bell, in combination with a switch for automatically directing the current from the main call-bell to the auxiliary call-bell, and means, as the levers O G, for automatically changing the current back to its original course, substantially as described.

3. The wire A and wire L, connected to the magnet C, and the wire B, connected to the plate D, the spring E, arranged to form an electrical connection with the lever G and wire F, and the magnet C, in combination with the armature H, lever G, pin J, and wire K, arranged substantially as and for the purpose specified.

4. The wire A and wire L, connected to the magnet C, and the wire B, connected to the plate D, and the spring E, arranged to form an electrical connection between the plate D and the magnet C, in combination with an armature H, lever G, pin J, wire K, and air or oil cushion formed by the cylinder M, arranged substantially as and for the purpose specified.

5. The pivoted lever O and the pivoted lever G, arranged to engage with a notch in the armature H and to project over the pivoted lever O, in combination with the circuit making and breaking spring E, arranged substantially as and for the purpose specified.

6. The pivoted indicating-plate R, having a weighted arm S fixed to it and designed to extend over the pivoted lever O, in combination with the pins *a* and *b*, arranged substantially as and for the purpose specified.

Toronto, February 26, 1889.

FREDERICK W. A. SCHNEIDER.

In presence of—

CHARLES C. BALDWIN,  
W. G. McMILLAN.