

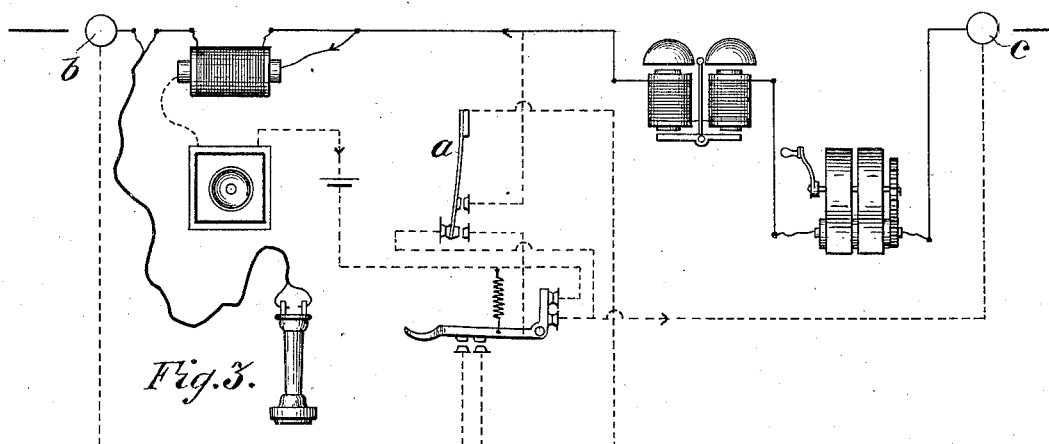
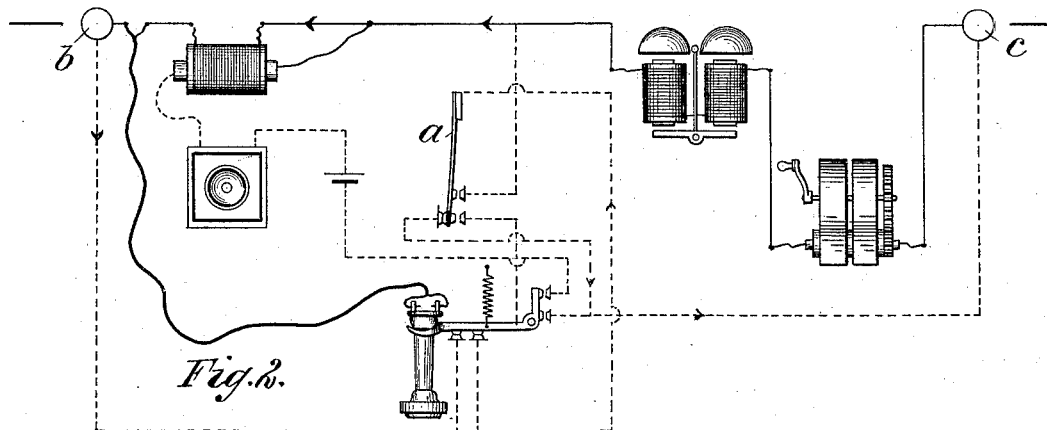
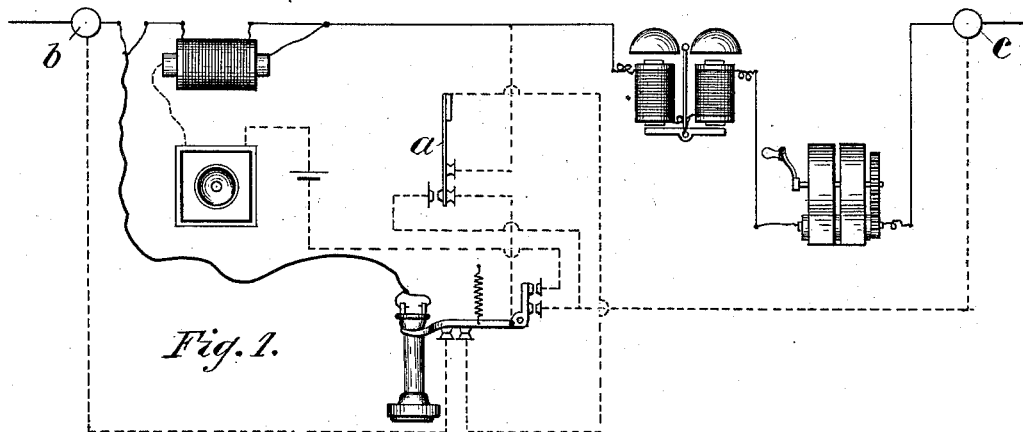
(No Model.)

C. E. SCRIBNER.

TEST CIRCUIT FOR TELEPHONE CALL BOXES.

No. 383,017.

Patented May 15, 1888.



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES E. SCRIBNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN ELECTRIC COMPANY, OF SAME PLACE.

TEST-CIRCUIT FOR TELEPHONE CALL-BOXES.

SPECIFICATION forming part of Letters Patent No. 383,017, dated May 15, 1888.

Application filed April 5, 1886. Serial No. 197,840. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. SCRIBNER, 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 Test-Circuits for Telephone Call-Boxes, (Case 105,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to testing magneto-bells or telephone call-boxes; and it consists in certain modifications of the circuits and switching devices whereby the generator and call-bell of the box may be used for making the tests required.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 shows the ordinary shunt circuit of a magneto-telephone call-box connected up in a telephone-line with my improvements applied thereto. Fig. 2 shows the same disconnected from the line with the telephone on the telephone-switch and the switching device in position for testing one portion of the connections of the box. Fig. 3 shows the same as in Fig. 2, except that the telephone is removed and the telephone-switch brought in position for testing the remaining portion of the connections.

Like parts are indicated by similar letters of reference throughout the different figures.

The main telephone-line circuit is shown in Fig. 1 connected directly through the generator, the bell, the secondary coil of the induction-coil, the telephone-cord, and the telephone. When the telephone is on the hook, the telephone and primary of induction-coil are shunted, as shown. On removing the telephone the position of the telephone-switch is changed and the generator and bell are shunted, while the telephone and primary of induction-call are brought into circuit. This shunt-circuit is described and claimed, broadly, in Patent No. 284,102, granted Ernest P. Warner, assignor, dated August 28, 1883. To this well-known circuit I have added the key or switch *a* and connections, whereby the generator and bell may be used for making all ordinary tests. This switch *a* normally rests in the position

shown in Fig. 1, so that the connections of the box may be in position for the ordinary telephone-calls. On changing the position of this switch *a* and disconnecting the line from the binding-posts, as shown in Figs. 2 and 3, the circuits of the box are changed and test-circuits are formed, by means of which all parts of the box may be tested.

As shown in Fig. 2, on operating the generator current will be sent through the bell, secondary of induction-coil, the telephone cord and telephone, the binding-post *b*, both lower contacts of the telephone-switch, thence to the test switch or lever *a*, and thence to binding-post *c* and the generator.

When the telephone is in the position shown in Fig. 3, on operating the generator current will be sent through the bell, the primary of the induction-coil, the transmitter, the local battery, the upper contacts of the telephone-switch, and thence to binding-post *c* and the generator. The bell should ring during each of these tests. Its failure to ring indicates trouble. The particular trouble may be readily located by short-circuiting the various parts liable to fault with a piece of wire. As soon as the imperfect part is short-circuited by the wire, the bell will ring, thus locating the trouble and enabling the repairer to get rid of the defect, whether it be in the secondary coil, the battery, an imperfect contact, or other part of the box.

I have spoken of the lower and upper contacts of the telephone-switch. By the "lower" I mean those that are connected when the telephone is hung up, and by the "upper" I mean those that are connected when the telephone is removed.

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

1. In a telephone call-bell apparatus, a test key or switch normally connected in circuit between the telephone-switch and the telephone-line, a contact-point opposed to said test key or switch, with which the test-key may be connected, while at the same time the branch between the telephone switch and line is broken, and circuits connected with the generator and bell, whereby different parts of the box may be tested on disconnecting the line

from the binding-post, substantially as and for the purpose specified.

2. In a telephone-call apparatus, the combination, with the telephone-switch and shunt-circuits, as described, of a circuit-changing device normally included in a branch circuit between the line and telephone-switch, and a contact-point against which said circuit-changing device may be closed to form a test-circuit and
10 open the said branch circuit, thereby changing the circuits of the apparatus for testing, substantially as and for the purpose specified.

3. In a telephone call and signal apparatus,

the combination, with the binding-posts *b c*, each disconnected from the lines leading out of 15 the bell, the telephone-switch, the circuit-changing device *a*, and the generator and circuits, whereby the different parts of the apparatus may be tested, substantially as described.

In witness whereof I hereunto subscribe my 20 name this 27th day of March, A. D. 1886.

CHARLES E. SCRIBNER.

Witnesses:

GEORGE P. BARTON,
F. H. McCULLOCH.