(No Model.)

C. H. WILSON.

SIGNAL AND TEST CIRCUIT FOR TELEPHONE EXCHANGES.

No. 306,669. Patented Oct. 14, 1884.

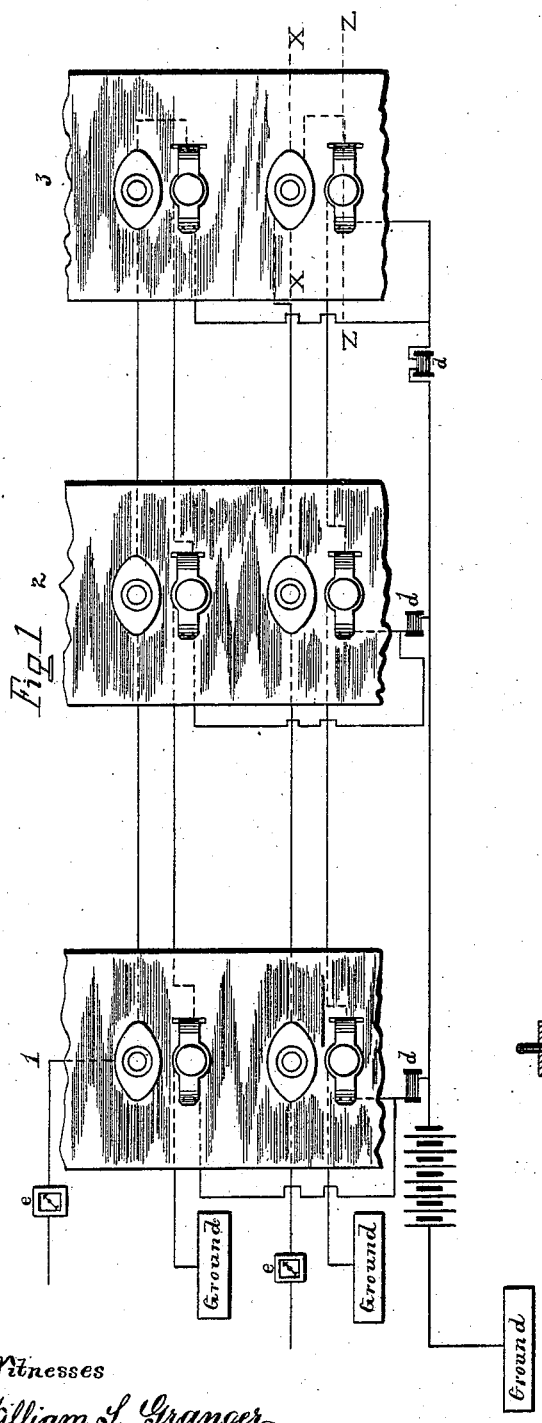

Fig 1

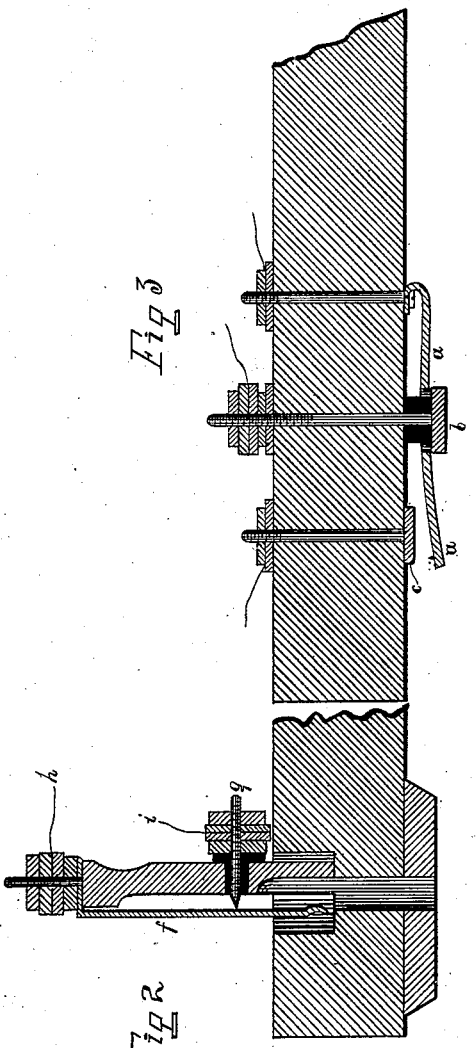

Fig 3

Fig 2

Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES H. WILSON, OF CHICAGO, ILLINOIS.

SIGNAL AND TEST CIRCUIT FOR TELEPHONE-EXCHANGES.

SPECIFICATION forming part of Letters Patent No. 306,669, dated October 14, 1884.

Application filed June 20, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. WILSON, of Chicago, Illinois, have discovered a certain new and useful Improvement in Multiple Switch-Board Signal and Test Circuits, of which the following is a full, clear, concise, and exact description.

My improvement consists in connecting the testing-battery with points placed near the test-keys, so that when the key is depressed and the battery thrown to line for the purpose of testing, to see if a line wanted is in use at another board, the act of testing will call up the subscriber, provided his line is not in use.

In the drawings, Figure 1 is a front elevation of portions of three multiple switch-boards 1, 2, and 3, showing two subscribers' lines connected with the switches and test-keys and to ground. Figs. 2 and 3 are sections of a full-sized switch and test-key, respectively, upon lines X X and Z Z of Fig. 1.

The switch is of the usual form. The test-key consists of the spring *a*, to which the line of a subscriber is connected, and two contact-points, *b* and *c*. The telephone-line is normally closed through contact-points *b* of the test-keys of a line on the different boards to ground, as indicated in Fig. 1. One pole of the local battery is connected with the contact-points *c* of all the test or signal keys, and signaling-instruments *d* are provided, as shown. The calls are sent in from the subscribers' stations in any well-known way. I have shown annunciator-needles *e* in the telephone-lines for receiving the calls of the subscribers. I find it preferable, however, to place the annunciators in the lines between the test-keys of the first board and the ground. Any two lines are connected by means of a conducting-cord provided with terminal plugs, which are inserted in the switches of the two lines upon one given board in the usual manner. By inserting a plug the lever or spring *f* is wedged away from contact with contact-point *g*, and thus the line-wire *h* is connected with the plug-point and cut off from the ground-wire *i* in the usual manner. In my system, when a call is sent in, the switchman at the board to which this call belongs at once presses against spring *a* of the test-key in the line of the subscriber called for. Contact is thus broken between the spring *a* and contact-point *b* and a new contact formed between said spring and the contact-point *c*. The battery is thus thrown to line, and the signaling-instrument *d* in the line between the contact-point *c* and the battery responds, provided the line is not in use, and by simply tapping upon the spring *a* the circuit of the line is closed and broken, thus calling up the subscriber.

I claim—

In a multiple switch-board system, the combination, with the calling-keys *a*, of the battery branching to contact-points *c* and the contact-points *b*, whereby any line may be disconnected from its normal ground and closed to said battery upon either of the boards, substantially as specified.

CHAS. H. WILSON.

Witnesses:

WM. S. GRANGER,

GEORGE P. BARTON.