

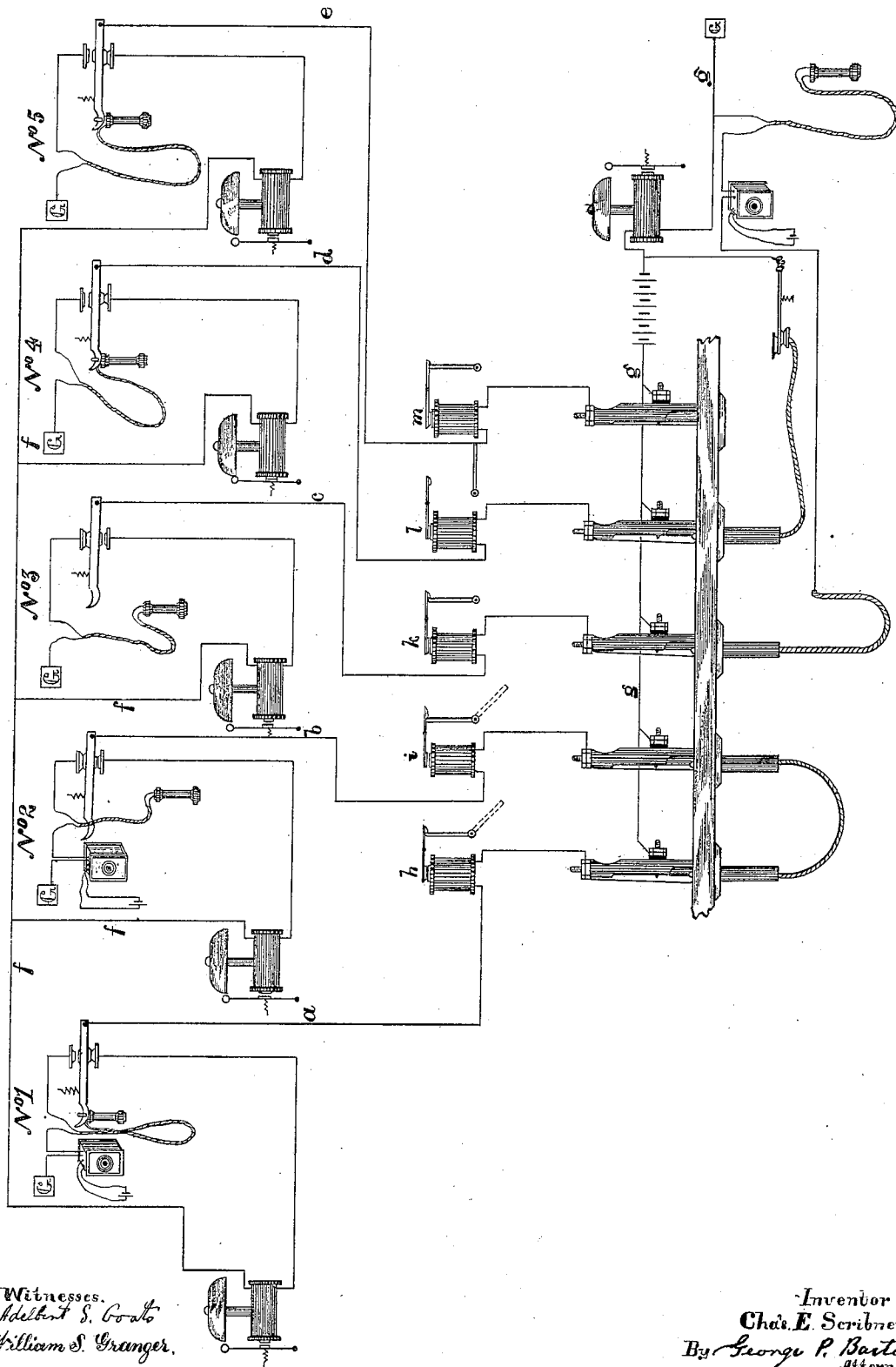
(No Model.)

C. E. SCRIBNER.

ANNUNCIATOR CIRCUIT FOR TELEPHONE EXCHANGES.

No. 245,404.

Patented Aug. 9, 1881.



UNITED STATES PATENT OFFICE.

CHARLES E. SCRIBNER, OF CHICAGO, ILLINOIS, ASSIGNOR TO WESTERN
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ANNUNCIATOR-CIRCUIT FOR TELEPHONE-EXCHANGES.

SPECIFICATION forming part of Letters Patent No. 245,404, dated August 9, 1881.

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

To all whom it may concern:

Be it known that I, CHARLES E. SCRIBNER, of Chicago, Illinois, have discovered a certain new and useful Improvement in Annunciator-Circuits for Telephone-Exchanges, of which the following is a full, clear, concise, and exact description.

My improvement consists in so connecting the individual telephone-lines with annunciators that any subscriber may automatically send a current from the battery at the central office through the annunciator in his line, and so that when any two connected subscribers are through speaking the one who first hangs up his telephone will by that act automatically close said battery to a circuit including the annunciators in their connected lines.

In the drawing I have shown five terminal stations, with the subscribers' individual lines connected at their outer ends to a common line in the usual manner. Each of these lines passes through its annunciator and switch at the central office and to a common line, in which is placed a battery, as shown. When the telephone is taken from the switch at either station the telephone-line of that station is cut off from the common outer line and connected to ground. The circuit of the battery at the central office is thus completed through the telephone-line that is thus grounded, and the annunciator of said line is thrown down. The work of connecting the calling subscriber with listening operator and with the subscriber wanted is then done in any well-known way. The signal to disconnect two subscribers' lines is sent in automatically by the one or the other who first hangs up his telephone. By hanging up the telephone at one of the stations the ground is removed and the line connected with the common line. The circuit of the battery is thus completed from the central office through such other lines of the group as at this moment may be connected with the common line, and thence through the lines of the two connected subscribers to ground. The annunciators of the two lines will thus be thrown down.

The telephone-lines *a b c d e* are connected normally with the outer common line, *f*, and

extend to their respective spring-jacks and to common ground-line *g* at the central office.

Annunciators *h i k l m* are provided, as shown, one in each line, at the central office.

Line *e* of station No. 5 is shown connected with the common outer line, *f*, and with the common line *g* at the central office. If the telephone were now removed from the switch, line *e* would be cut off from line *f* and connected to ground. (See circuits at station No. 3.) The circuit would thus be closed to battery through annunciator *m*, and the shutter of annunciator *m* would be thrown down. The central office is thus notified of the call, and by inserting a plug in the spring-jack of the calling subscriber cuts off his line from the line *g* and connects said line with the listening operator's outfit. The order is then received, and the subscriber wanted is called up, and the two are connected in the usual manner. The spring-jacks of lines *a* and *h* are shown thus connected. The subscriber who first hangs up his telephone completes a circuit through the annunciators in the two connected lines and sends in the clearing-out signal, dropping the shutters, as indicated by dotted line at annunciators *i k*. The circuit thus formed may be traced as follows: From the ground at the central office through the battery in line *g*, and by line *e* and such other lines as may be connected at the same time to line *f*, and thence to line *a* and through annunciator *i*, the spring-jack, and conducting plugs and cord to line *b*, and through annunciator *k* in said line to ground at station No. 2, as shown.

I claim—

1. A group of subscribers' lines normally connected at their outer ends with a common line, and at the central office with a common ground-line, in which is placed a battery, in combination with annunciators at the central office, one in each line of the group, and switching apparatus at each station, whereby the circuit of said battery may be closed to ground at any station, substantially as and for the purpose specified.

2. A series of telephone-lines radiating from a common battery-wire through switches and

annunciators at the central office, (one switch and one annunciator in each line,) and through their several terminal stations to a common outer wire, in combination with switching apparatus at each station, and means for connecting any two switches at the central office, whereby the circuit of said battery-wire may be completed through certain lines of the group to the common outer line, and thence through the circuit of two connected individual lines by means of the switching apparatus at either station of the two individual lines. 10

CHARLES E. SCRIBNER.

Witnesses:

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