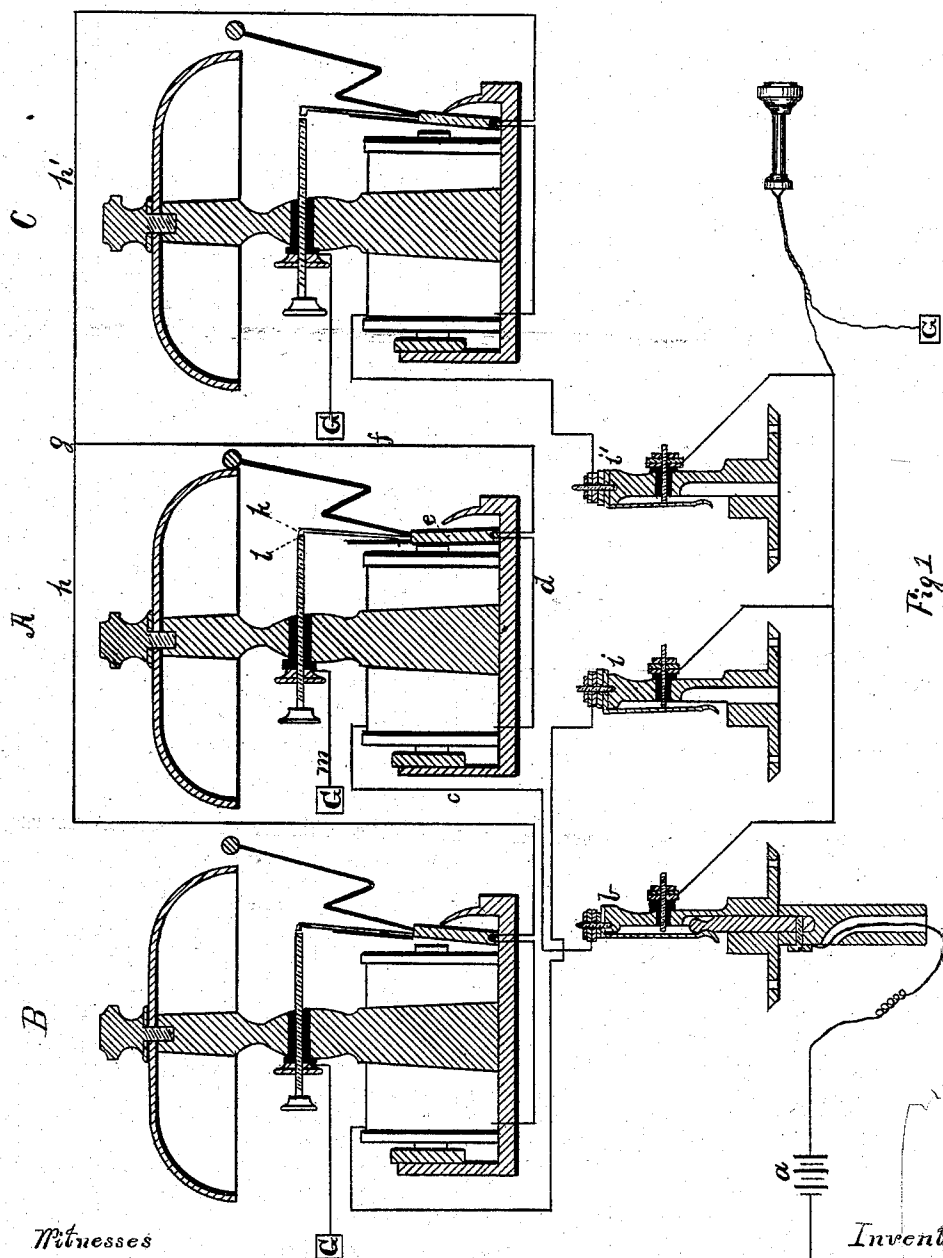


(No Model.)

C. E. SCRIBNER.
SELF SWITCHING SIGNAL BELL.

No. 252,266.

Patented Jan. 10, 1882.



Witnesses
William S. Granger
Calvin DeWolf

Inventor
Charles E. Scribner
By George P. Barton
Attorney

UNITED STATES PATENT OFFICE.

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

SELF-SWITCHING SIGNAL-BELL.

SPECIFICATION forming part of Letters Patent No. 252,266, dated January 10, 1882.

Application filed April 12, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. SCRIBNER, of Chicago, Illinois, have discovered certain new and useful Improvements in Self-Switching Signal-Bells, of which the following is the specification.

In a telephone-exchange system where the outer ends of the individual telephone-lines are grouped together by a common line, and the return-circuit of the signal-battery composed of the lines of the group which happen to be connected with the common line at the time the signal is sent through a given subscriber's bell from the central office, it has been proposed to polarize the bells to respond only to currents of a given polarity of battery, so that when this polarity is directed to the bell of any individual line the opposite polarity will be directed to the bells of the lines of the return-circuit, so that the former only will ring. There will be ordinarily so many lines in the return-circuit that the portion of the return-current passing through the bell of one of the lines will not be strong enough to cause it to ring.

My invention relates to the signal-bells used in this system of telephone-exchange, but may be usefully employed for all analogous purposes.

My invention consists in a switching device so combined with the bells that the signal-current is grounded just before the hammer reaches the bell in the line of the outgoing current. The circuit is then for a moment diverted from the common line directly to ground. I thus prevent ringing the bells in the lines of the return-circuit.

In the drawing Figure 1, A, B, and C are subscribers' stations, which may be provided with any of the well-known outfits. I have shown detail sections of the signal-bells and the individual circuits connected at their outer ends. The individual lines extend to the central office, and there pass through their respective switches to the common line of the listening operator's telephone to ground in the usual manner. Suppose subscriber at station A has been called for, the switchman, by connecting battery *a* with bolt *b*, sends a current

to the line of the subscriber wanted. The current may be traced in the first place, as indicated by line *c*, through the coil of the electromagnet and by line *d* to the armature *e*, and thence by line *f* to the common line or point *g*, and thence by the circuit of lines *h* and *h'* back to the bolts *i* and *i'* and to ground, as shown. This is the first circuit; but the instant the armature moves sufficiently to bring point *k* into contact with the point *l* the circuit is changed and the current diverted from line *e* to ground-line *m* at station A. It is evident that the bell at station A, when in the position shown, would shunt the circuit of battery *a* from the line *f h'* and from the bell at station C. The current thus shunted would go to ground by ground-contact *l*. Thus, if the bell at station B were cut out entirely, the two remaining bells would be operative. In this way I am enabled to ground the circuit of a given line at the common line before the bells in the lines of the return-circuit can ring. The initial current may be sufficient to move the armatures of the bells or annunciators of the return-circuit very slightly, but no trouble can arise from this cause.

I claim—

1. The circuit of a battery through three or more electric bells, in combination with said bells and a ground-contact near the armature of the first bell, the succeeding two or more bells being placed one in each of the branches of the derived circuit, which extends from the armature of the first bell through the said two or more bells to a common line, whereby the current is directed automatically to ground, and thus momentarily cut off from the branches of the derived circuit, substantially as and for the purpose specified.

2. The combination of a battery, with three or more electric bells placed in the circuit of said battery, said circuit being connected with the armature of the first bell by line *d*, and extending thence in derived circuit through the two or more succeeding bells, one bell being in each branch of the derived circuit, the branches uniting in a common ground-line in which is placed the operator's telephone, and contact-points *k l*, whereby the current from the bat-

tery is momentarily diverted from the said branches and directed to ground at the first bell, substantially as and for the purpose specified.

5 3. The circuit of battery *a* through switches *b* and *i'* to ground, in combination with two electric bells in circuit between said switches, a branch circuit from the armature of the first bell to ground, and means, as described, where-
10 by the current is directed automatically to ground through said branch at each stroke of the first bell, thus preventing the second bell from ringing, as and for the purpose set forth.

15 4. The combination of three or more electric bells, with their armatures severally placed in distinct branch lines, an outer common line, a common ground-line at the central office, the coils of the electro-magnets of the bells respectively in the circuit of the branch lines
20 which connect with said armatures, switching apparatus in each line or branch, and a ground-contact, and an automatic shunting device

near the armature of each bell, whereby any given line may be separated from said common ground-line and closed to battery, and the current shunted to ground through the ground-
25 contact of the armature of the bell in the line thus closed to battery, substantially as and for the purpose specified.

5. The combination of three or more electric
30 bells, each placed in a different branch of a group of telephone-lines, with switching apparatus in each branch, between the ground and bells, and automatic switching devices, one device for each bell, whereby any line may be
35 connected to battery, and the current thus directed through said given line may be shunted from the bells of the other lines of said group, substantially as and for the purpose specified.

CHARLES E. SCRIBNER.

Witnesses:

WILLIAM L. GRANGER,
MILO G. KELLOGG.