

G. L. ANDERS.
Electric Call Apparatus for Telephone Lines.
No. 218,153. Patented Aug. 5, 1879.

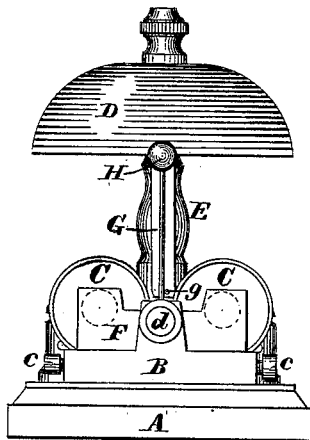


Fig. 2.

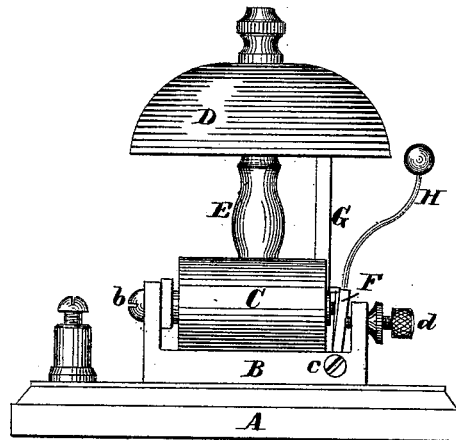


Fig. 1.

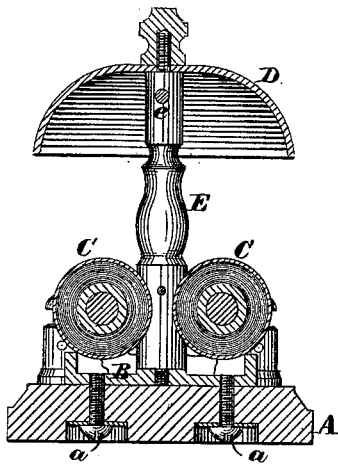


Fig. 3.

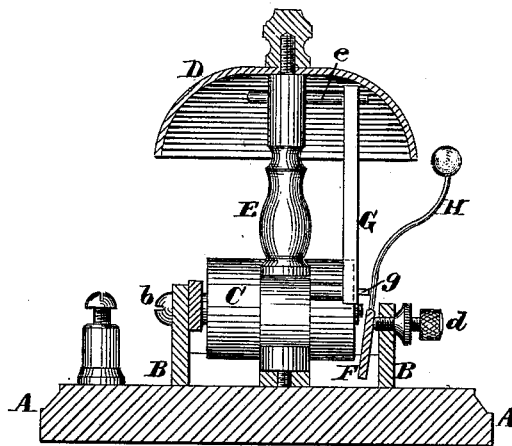


Fig. 4.

Witnesses:

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GEORGE L. ANDERS, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN ELECTRIC-CALL APPARATUS FOR TELEPHONE-LINES.

Specification forming part of Letters Patent No. **218,153**, dated August 5, 1879; application filed July 7, 1879.

To all whom it may concern:

Be it known that I, GEORGE LEE ANDERS, of Boston, in the State of Massachusetts, have invented a new and useful Improvement in Electric Signaling Apparatus, of which the following is a specification.

In an application for a patent now pending I have described mechanism under the control of an electro-magnet by which of a series of bells in a single electric circuit any one may be rung without ringing the others, at the will of the operator at the central station.

This present invention relates to a circuit consisting of two bells connected with the central station, the object being to ring one of the two bells without ringing the other.

The apparatus is much less complicated than the apparatus of the former invention; but in both the principal feature consists in the use of polarized armatures in a magnetic bell-circuit.

In the instrument, however, in use at each of the stations for carrying out the present invention, the bell-hammer is directly under the control of the polarized armature, and the bell rings, if at all, at the first pulsation of the current, while in the instrument described in my former application the polarized armature merely places the bell-hammer in a position from which, under certain circumstances, it can strike the bell by a further and independent pulsation.

In construction I have followed my said former apparatus in attaching the bell-hammer to a soft-iron armature; but while in the instrument described in my former application the bell-hammer partook of the vibrations of the polarized magnet, in this instrument it does not move with the polarized armature; but that armature permits the bell to ring or not by moving out of or into the path of the bell-hammer. Yet I might, without departing from my present invention, attach the bell-hammer at each station directly to a polarized armature, and cause blows to be given to the bell, accordingly as the current should move the armature in one direction or the other; and the polarization of the two armatures being in opposite directions, one of the two bells would be rung, the other remaining silent at the first pulsation of the current, according to its direction. I prefer, however, the double-armature construction as taking less

room in the instrument, and such construction I proceed to describe.

In the drawings, Figure 1 is a front elevation, and Fig. 2 a side elevation, of the instrument used at each of the bell-stations. Figs. 3 and 4 are sectional elevations of the same.

A is a wooden table or bracket. B is a metallic frame secured to the table by screws *a*, as shown. C is an electro-magnet, secured to the frame B by two screws, *b b*. D is the bell, mounted on the bell-post E, the latter rising between the two spools of the electro-magnet from a cross-bar of the frame B, into which it is screwed.

F is a soft-iron armature, swinging on two pins, *c c*, in the frame B, and carrying the bell-hammer H, as shown. A set-screw, *d*, limits the backward play of the soft-iron armature.

G is a polarized armature, swinging on a pin, *e*, which has its bearing in the bell-post. At the lower end of the polarized armature is a projection, *g*, which stands in the path of the arm of the bell-hammer, accordingly as the current is in one direction or the other.

The instruments at the two bell-stations are duplicates each of the other, except that the polarity of the armature of one instrument is the reverse of the polarity of the armature of the other instrument, and it follows that the operator at the central station, by using a double-keyed instrument to send a positive or negative current, at pleasure, may ring either bell without ringing the other.

I have not deemed it necessary to show connecting-wires, nor the instrument at the central station.

I claim—

1. In a magnetic bell-circuit consisting of a central and two bell stations, the combination at each bell-station of a polarized armature and bell-hammer, the polarization of the two armatures being in opposite directions, substantially as described, so as to ring either of the two bells without ringing the other, according to the direction of the current.

2. The bell D and hammer H, in combination with the soft-iron armatures F and G of the electro-magnet C, substantially as described, for the purpose specified.

GEORGE LEE ANDERS.

Witnesses:

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