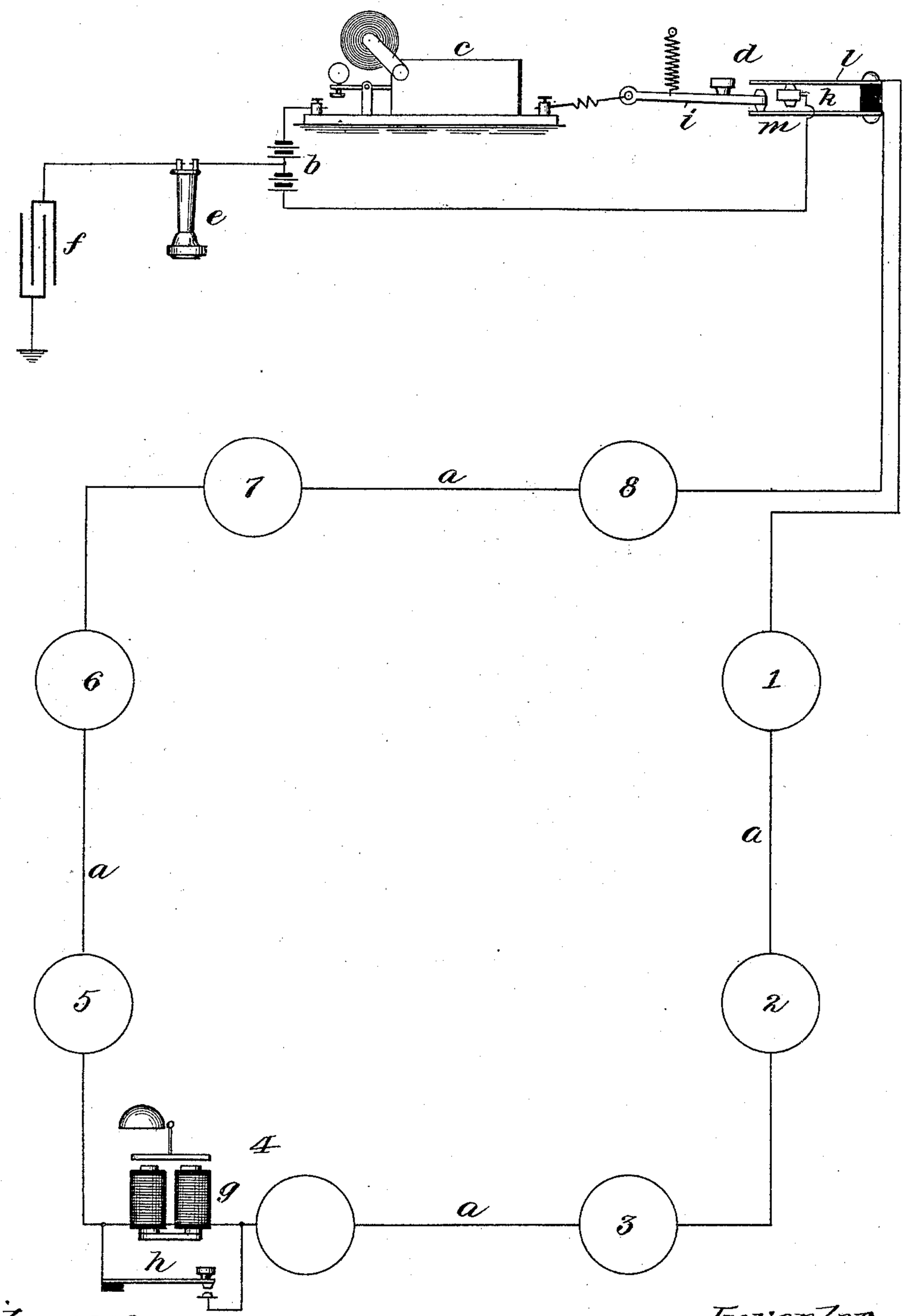
(No Model.)

C. E. SCRIBNER.

ELECTRIC POLICE SIGNAL SYSTEM.

No. 415,574. Patented Nov. 19, 1889.



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UNITED STATES PATENT OFFICE.

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ELECTRIC POLICE-SIGNAL SYSTEM.

SPECIFICATION forming part of Letters Patent No. 415,574, dated November 19, 1889.

Application filed August 3, 1887. Serial No. 246,025. (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 Electrical Police-Signal Systems, (Case 139,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to electric signaling apparatus, and is more especially designed as a cheap police-signal system.

My invention consists in a circuit extending from the central station through signal-stations, a current-reversal device in the circuit at the central station, and a branch connection to ground at the central station, including a telephone and condenser, with a polarized relay and key at each signal-station in addition to the ordinary call-box, usually termed the "eleven call-box."

The circuit-changing device is so arranged that the current will be reversed only with respect to the exterior circuit. The current through the receiving-register always remains in the same direction. This is desirable, in order that there may be no false signals when chemical paper is used upon the relay.

Any call-box may be pulled in the ordinary way to send a signal to the central station, which is recorded in the ordinary way upon the register.

The operator at the central station by reversing the current gives an answer-back signal upon the bell at the station from which the signal was sent in, the shunt-circuit around the bell being open, while the door of the box is open, as is usual. If it is desired to send additional signals from the signal-station, this may be done by means of a key included in the shunt-circuit. Simply opening or closing the key in the shunt-circuit at any station will give clicks, which will be audible in the telephone in the condenser-circuit at the central station. These clicks will be due to the extra current induced in the electro-magnet as its shunt-circuit is opened and closed.

In case signals are being sent between the central station and any given signal-station and a box is pulled at any other station, the signal from the box thus sent in will be received and registered upon the register without interference on account of the manipulation of the key at any other station or the circuit-changing device at the central station. Thus I am enabled to utilize the signal-circuit to its fullest capacity, it being entirely practicable to send signals between one station and the central station at the same time a signal is being sent in from a box at another station.

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

a illustrates a metallic circuit passing through the battery *b* and receiving-register *c* at the central station and the signal-stations 1 2 3 4 5 6 7 8, distributed along the circuit *a*.

It will be noted that the battery and receiving-register are connected directly together, so that no matter how often the circuit may be changed by the circuit-changing device *d* the current from the battery *b* through the receiving-register *c* will always be sent in the same direction. The telephone *e* and condenser *f* are included in a branch circuit from the metallic circuit *a* to ground.

At station 4, I have shown the polarized bell *g* and a key *h* included in the shunt-circuit around the bell *g*. It will be seen that the circuit from the receiving-register *c* is connected with the movable lever *i* of the circuit-changing device, while the circuit leading from the battery is connected with the contact *k*. Springs *l* and *m* are adjusted so as to tend to press against contact *k*. A retractile spring causes the lever *i* to normally rest against the upper contact *l* and lift the same from contact *k* and allow spring *m* to rest against said contact *k*. By pressing down lever *i*, as shown, spring *m* is separated from contact *k* and spring *l* closes thereon. Thus by depressing lever *i* the circuit may be reversed as to all the stations 1 2 3 4 5 6 7 8 without in any manner affecting the direction of the circuit or current through the receiving-register *c*. When the current is reversed and key *h* at station 4 is open, the bell *g* at said station will ring. When key *h* is worked, the extra current induced in the electro-magnet of bell *g* will cause a click in the telephone

e, and thus by a code of signals any desired information may be communicated between the central station and any signal-station, and, as above stated, while such signals are being sent, any signal sent in by pulling a box at any other station will be properly registered upon the receiving-register.

I have practically used my invention as above described and found that a click is heard in the telephone, as above set forth.

My theory of the mode of operation is that the current flowing from battery *b* through the magnet of signal-bell *g* magnetizes the cores thereof, and, shunting the coils of the said magnet out of circuit, diverts the current of battery *b* around the said coils, thereby increasing the current flowing in the circuit *a*. At the instant of breaking the said shunt at the key *h* the magnetic lag of the electro-magnets *g* results in an effect which for a very short space of time is like breaking the circuit of the circuit *a*. The circuit *a* has sufficient condenser action with relation to the earth so that at the instant of operating the shunt as described, the current will be momentarily diverted through the path including the telephone *e* and the condenser *f* to produce a click in said telephone *e*.

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

The combination, in a police-signal system, of a single circuit including several signal-stations, with a call-box and polarized bell, and a key in a shunt-circuit around the polarized bell at each station, a receiving-register and battery at the central station, a circuit-changing device at the central station for changing the circuit with respect to the signal-stations without changing the direction of the current through the relay, a branch circuit to ground including a telephone, and a condenser, substantially as described.

In witness whereof I hereunto subscribe my name.

CHARLES E. SCRIBNER.

Witnesses:

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