

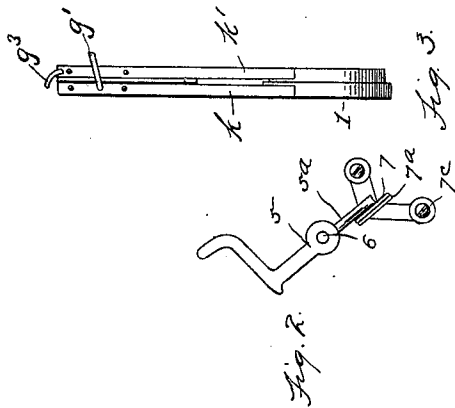
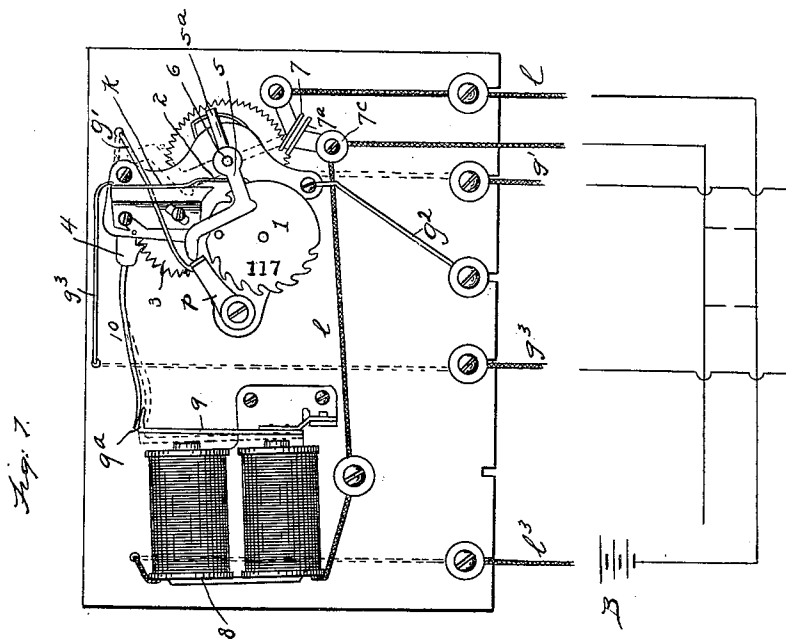
No. 644,551.

Patented Feb. 27, 1900.

G. HARRIS.
ELECTRIC SIGNALING APPARATUS.

(Application filed Aug. 6, 1898.)

(No Model.)



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ELECTRIC SIGNALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 644,551, dated February 27, 1900.

Application filed August 6, 1898. Serial No. 687,909. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HARRIS, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Electric Signaling Apparatus; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to electric signals, and has for its object the combination of a signaling apparatus which is or may be one of a large number of signaling apparatus located on a general line, from a house or number of houses, to what may be termed a "distant station," and in connection with each apparatus on the general line is a local circuit for the individual house, which is or may have a number of signaling-points, for any one of which the signaling apparatus may be set in motion to send the signal to the central office. The apparatus is therefore especially adapted for use as a burglar-alarm, there being a single signaling-machine from which the signal sent will indicate at the central office the house from which the signal is sent, and the initial impulse which starts the signal may be sent from any door, window, or any other place in the house.

That part of the apparatus which sends the signal from the house to the central station is similar to the signaling apparatus in what is termed the "district-telegraph system;" but in connection with that part I use improvements which are the object of this invention and which enable me to send the signal from any of the different localities on the local circuit.

In the drawings, Figure 1 shows the signaling mechanism in elevation. Fig. 2 is a detail of the parts which are employed to close the local circuit temporarily for the purpose of setting the signaling apparatus and holding it in its set position. Fig. 3 is a detail of the double brush which contacts the signal-wheel.

The machine in connection with which my improvement is to be used comprises a chain of spring-actuated gear-wheels 1 2 3, the last

of which, the signal-wheel 1, is provided with teeth properly spaced to send a succession of impulses of a given character and of a character to produce the desired signal, and so that not only is a signal given, but the definite signal is given which enables the receiver to determine which one of a large number of sending devices on the same line has been put in operation. In order that there may be a number of such signaling apparatus on the same line, the line must be what we understand as a "closed circuit"—that is, the electric current must be able to travel not only through the main wires, but through or around each instrument, and the signal must be given by temporarily opening or breaking the circuit at one of the signaling-stations.

I will distinguish in my description of the wiring between those wires which form a part of the general circuit to the distant station by calling them the "general" wires, and those wires which form the local circuit, which pertain wholly to the single instrument, by calling them the "local" wires.

$g' g^2 g^3$ are general wires.

5 is a crank-lever mounted upon a shaft or post 6.

p is a contact-post. When the crank-lever 5 is in the position shown in Fig. 1, it contacts the post p , and the general circuit is completed through said post, the lever 5, and the general wires.

$k k'$ are the brushes, which by their intermittent contact with the moving wheel 1 causes the signal to be sent through the general circuit. The movement of the chain of gear-wheels 1 2 3 tends to bring the lever 5 against the contact-post 6, and the contact of said lever with said post limits the movement of said wheels.

The foregoing parts are in common use and are used for sending a signal corresponding to the station or by which the station is known from the station to a distant place.

I have added a local circuit and means for holding the crank 5 in its set position with its driving-spring under tension, means for automatically releasing the holding device and allowing the spring to actuate the signaling mechanism, and means for automatically catching and again holding the arm when it is turned to its set position. This

means consists of a local circuit, one branch of which ends with a terminal 7, the other branch or end of which ends with a terminal 7^a. In the circuit is the usual battery B, and there is also in the circuit a magnet 8 with a vibrating armature 9. The armature terminates with hook 9^a at that end which is opposite its hinged end, and an arm 10, extending from the escapement 4, is arranged to engage under the hook 9^a to prevent the escapement from vibrating, and consequently to prevent the entire signaling mechanism from moving, although it has been set and is under tension of its actuating-spring. Said escapement is free to move and permit the movement of said gear-wheels so long as the arm 10 is above the hook 9^a.

On the crank 5 is an arm 5^a, which contacts the electric terminal 7 and presses it against the electric terminal 7^a, closing the local circuit. This actuates the armature 9, draws the hook 9^a from under the end of the arm 10, and allows the end of the arm 10 to drop under the force of gravity until it is below the hook 9^a. When the operator releases the crank 5, the driving-spring tends to return the crank 5 to the position shown in Fig. 1 and at the same time lifts the end of the arm 10, inasmuch as the mechanism cannot move without vibrating the escapement and this arm. The instant, however, that the arm 5^a moves away from the terminal 7 the local circuit opens, the armature 9 springs outward, and the hook 9^a engages over the arm 10 and prevents that arm from vibrating and holds the entire signaling apparatus in its set position. The local circuit is now open. Because of the lost motion between the lever 5 and the escapement the local circuit will be broken and the hook 9^a will spring out into position to engage over the arm 10 before the chain of gear-wheels begins to act upon the escapement.

Another branch of the local current passing from the post 7^c, which is electrically connected with the terminal 7^a, passes to the place from which the local signal is to be sent.

The wiring for the local signal is in the well-known way by which an open circuit may be closed at any one of several different points.

What I claim is—

1. In combination with a signaling apparatus, an electrically-actuated catch, an arm on the signaling apparatus adapted to engage the catch, a local circuit adapted to actuate the catch, a crank on the signaling apparatus and means whereby the crank closes and opens the circuit and thereby actuates the catch to enable it to engage the holding-arm, substantially as described.

2. In combination with a signaling apparatus a chain of gear-wheels, means for actuating said gear-wheels, an escapement adapted to regulate the motion of said gear-wheels, a catch adapted to engage said escapement only when said escapement is at rest and thereby lock said gear-wheels, an electromagnet adapted to withdraw said catch from engagement with said escapement, a pair of terminals, 7, 7^a, and a lever adapted to store up the actuating power of said gear-wheels and to make contact between said terminals at the limit of its motion thereby completing the circuit through the coils of said magnet drawing said catch into position to engage said escapement at the commencement of the return motion of said lever, substantially as shown and described.

In testimony whereof I sign this specification in the presence of two witnesses.

GEORGE HARRIS.

Witnesses:

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