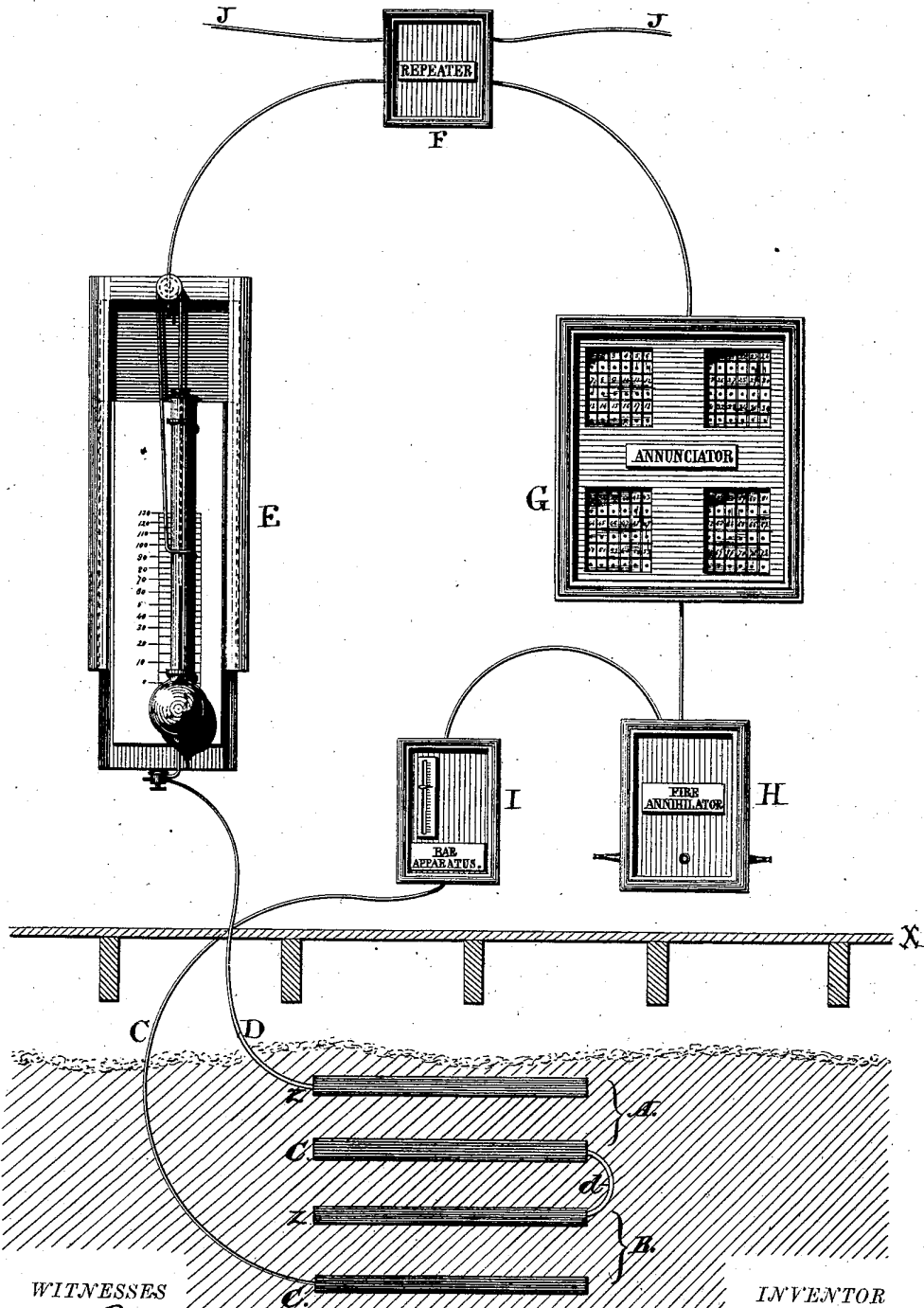


W. D. SNOW

Earth-Batteries for Generating Electricity.

No. 155,209.

Patented Sept. 22, 1874.



WITNESSES

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By

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# UNITED STATES PATENT OFFICE.

WILLIAM D. SNOW, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN EARTH-BATTERIES FOR GENERATING ELECTRICITY.

Specification forming part of Letters Patent No. **155,209**, dated September 22, 1874; application filed June 6, 1874.

*To all whom it may concern:*

Be it known that I, WILLIAM D. SNOW, of Brooklyn, in the State of New York, have invented a certain Improvement in Earth-Batteries for Electro-Magnetic Alarms, &c.; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawing, which represents a series of electro-magnetic signaling or alarm apparatus placed in a house and operated by a current derived from an earth-battery, as hereinafter more fully set forth.

The object of my invention is to avoid the employment of artificial electric batteries for the purposes of house-signaling, fire and burglar alarms, and for the operation of other circuits.

In the common systems employed for these purposes a local or house battery is employed, requiring to be kept in working order by the occupants of the building in which it is placed, who are usually entirely ignorant of its structure and uses; or else the street line of wires is carried into the house, and thus subjected to all the contingencies to which the house itself is liable.

I obviate the trouble, annoyance, and danger to public safety incident to the systems referred to, by employing the current from an earth-battery without the intervention of any cups or vessels containing acids or other agents for the decomposition of zinc or other metals, commonly called a "battery." This I effect by making use of an earth-battery formed by burying the electrodes in the earth under the house at the depth of permanent moisture, so that the action of the dampness of the earth upon the plates will develop a sufficient permanent current for the required purposes. From these buried plates I run a telegraphic circuit in the house to connect with thermostats, signaling apparatus, fire and other alarms, annunciators, gas-lighters, or repeaters, according to the nature of the

use to which the electric current is to be applied.

Some attempts have been made to use earth-batteries for various purposes. Such earth-batteries were made by simply burying a single set of elements in the earth, and proved of little or no practical value, on account of the very feeble intensity of the current generated. I have discovered, however, that if a series of elements be used in the earth, coupled together so as to form an earth-battery of any required size, this objection is obviated, and a constant current of considerable intensity is obtained, capable of operating steadily quite an amount of apparatus.

In the drawing, A and B mark two series of electrodes, which may be of zinc and carbon, as marked C and Z, buried in the earth under the house in which the circuit is to be used, the wire *d* being a connection between the dissimilar elements of the two series; C D, the wires for conducting the current, which may be made to complete the circuit by passing through E, an automatic thermostat; F, a repeater, connected with the street-wires J J; G, an annunciator; H, a fire-annihilator; or I, a signal-writing-bar apparatus, either one or more of these, each operated by the current in any of the usual modes.

What I claim is—

1. The improved earth-battery, consisting of a series of elements buried in the earth and connected together to form a battery, substantially as and for the purposes set forth.

2. The combination of two or more electric currents or circuits, when one of these is a current derived from an earth-battery, substantially as described, and is employed to operate the other or others.

The above specification of my said invention signed and witnessed at Washington this 30th day of May, A. D. 1874.

Witnesses:

W. D. SNOW.

W. P. BELL,

CHAS. F. STANSBURY.