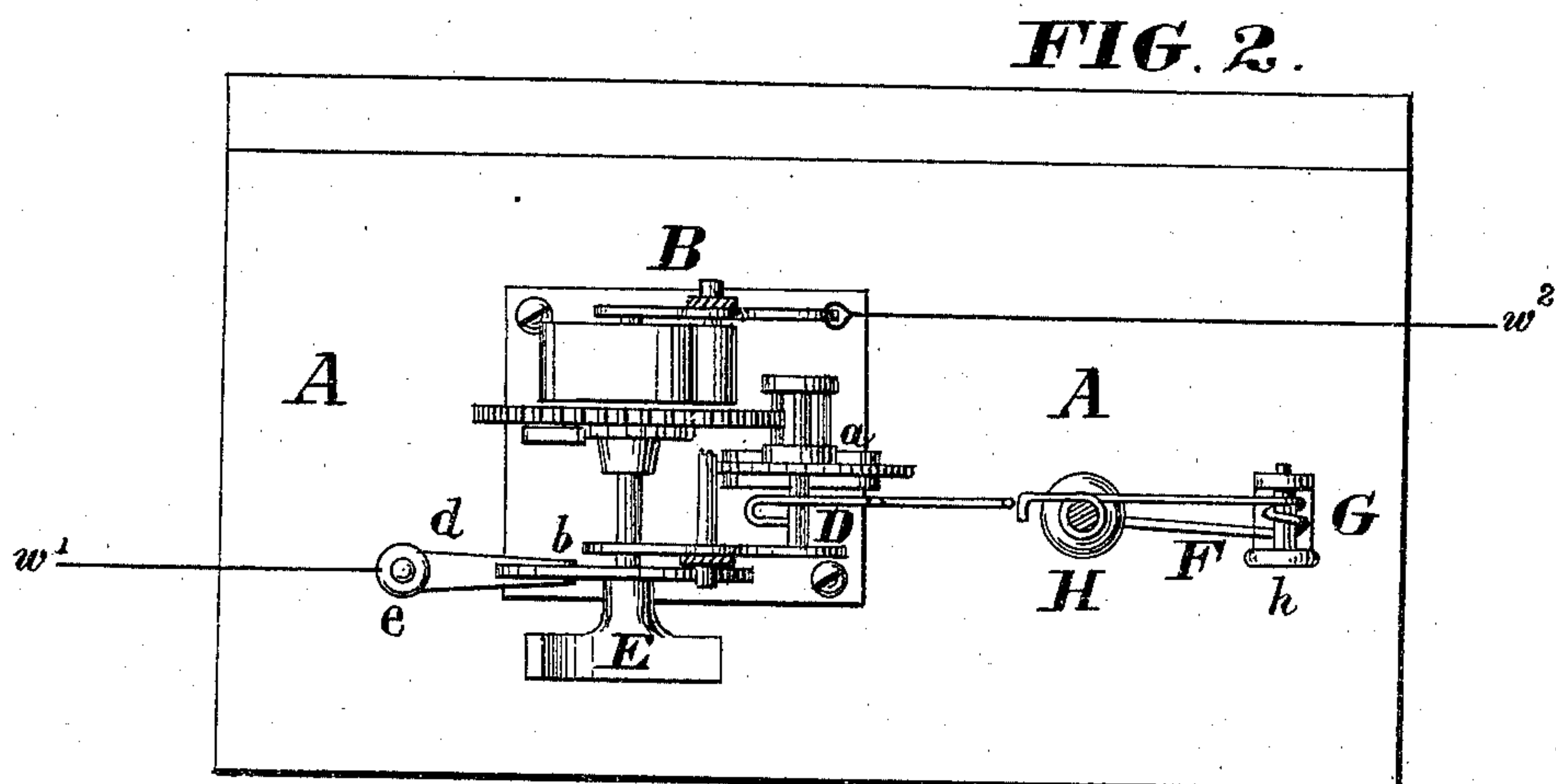
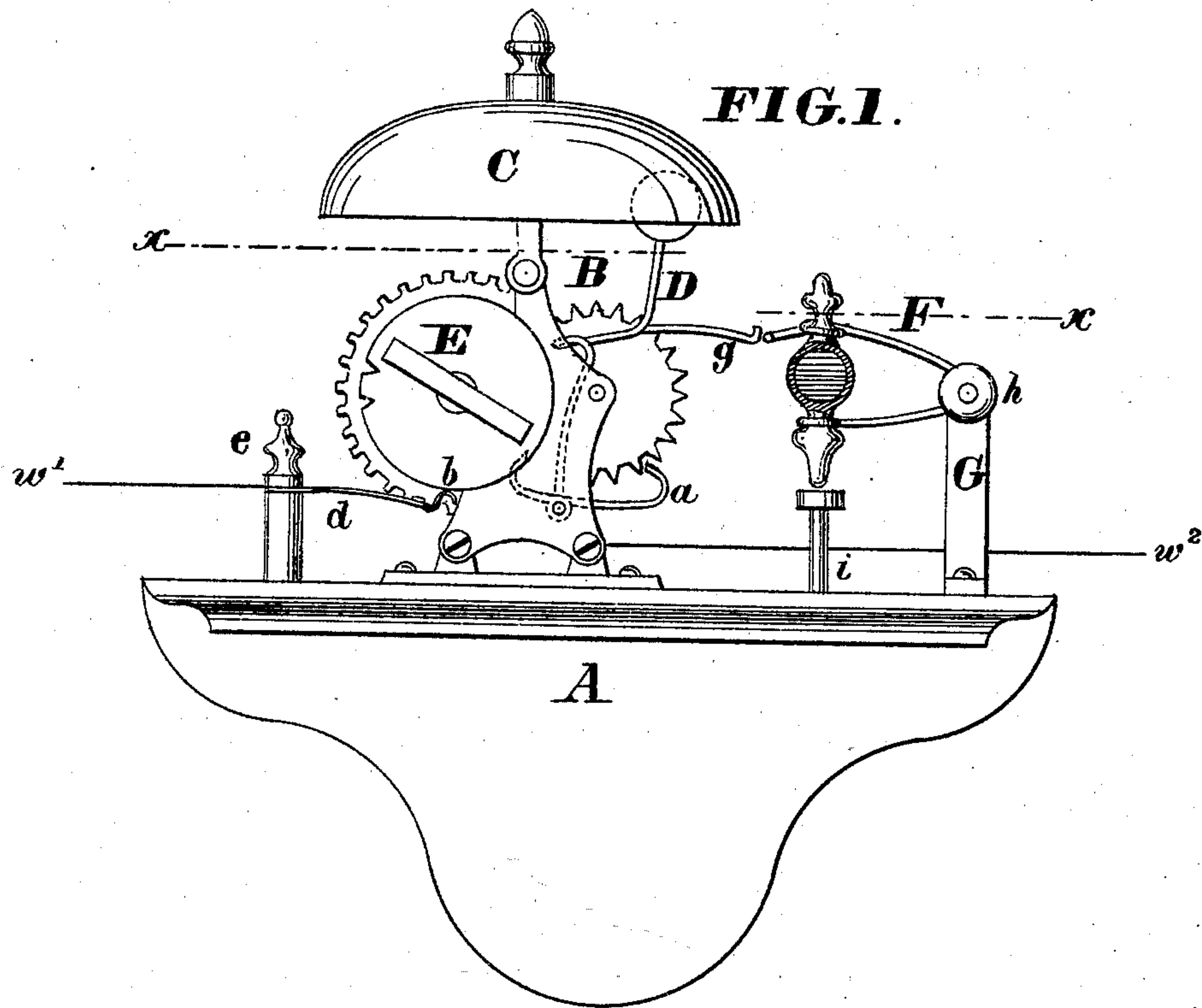


J. H. GUEST.
District and Fire-Alarm Telegraphs.
 No. 143,344. Patented September 30, 1873.



WITNESSES:

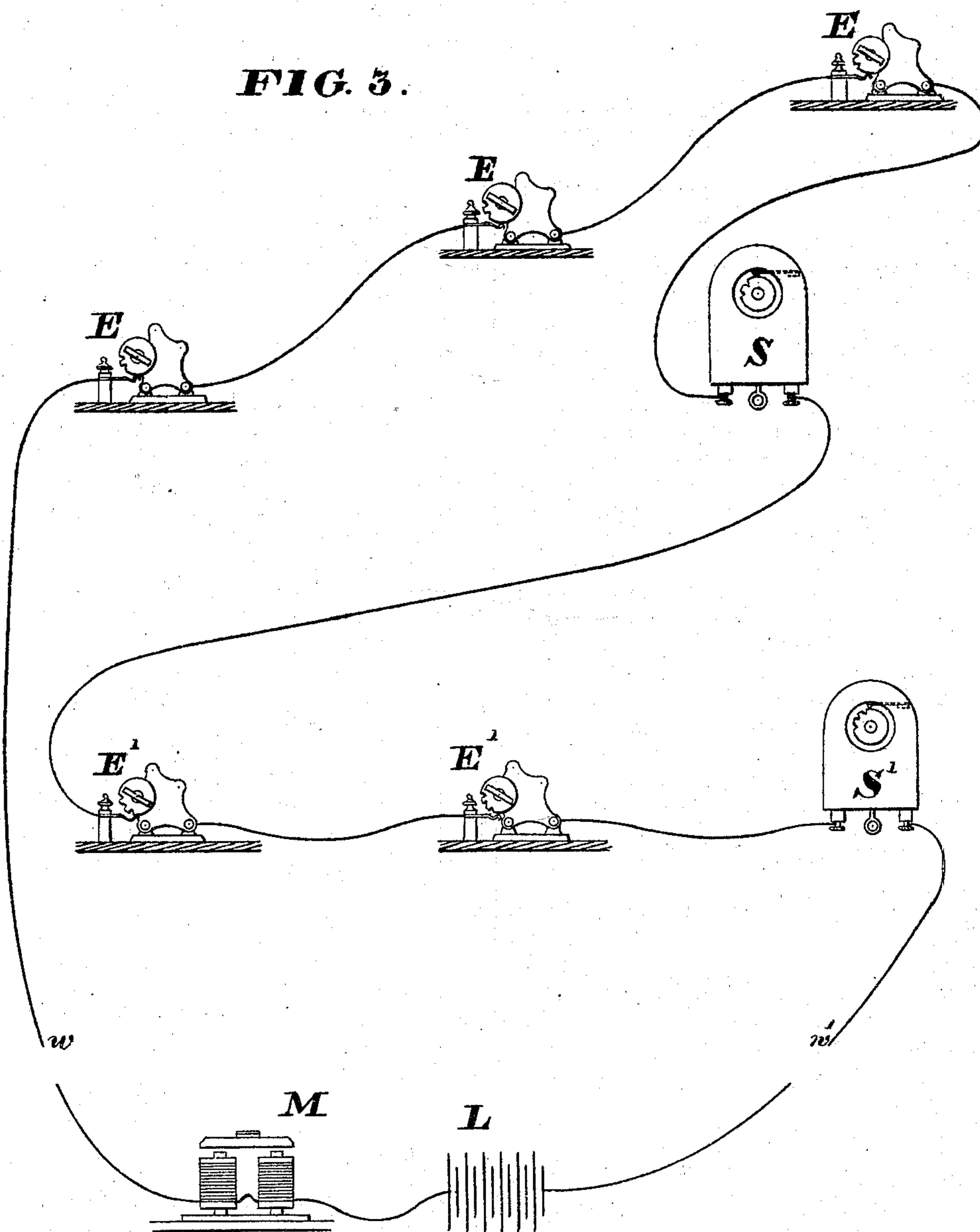
Geo. L. Ewin
Walter Allen

INVENTOR:

John H. Guest
 By *Knights* Attorneys.

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FIG. 3.



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UNITED STATES PATENT OFFICE.

JOHN H. GUEST, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN DISTRICT AND FIRE-ALARM TELEGRAPHS.

Specification forming part of Letters Patent No. **143,344**, dated September 30, 1873; application filed September 22, 1873.

To all whom it may concern:

Be it known that I, JOHN H. GUEST, of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Electro-Magnetic Alarms, of which the following is a specification:

The object of my invention is to furnish a good and reliable system which announces automatically the danger of fire at some central station or headquarters to which the instruments are connected, and also to occupants of the buildings, if desired.

My invention may be used in connection with automatic signal-instruments of any construction adapted in their normal condition to form a part of the closed circuit of a district-alarm telegraph. The thermostats controlling such automatic instruments may be made, in any customary manner, of metal or with breakable mercurial bulbs. For the purpose of illustration, and in order to show one mode of carrying out my invention, I show and describe a form of signal-instrument, which constitutes the subject of a separate application. The present invention consists in combining, with the closed circuit of a district-alarm of any form, automatic signal-instruments, which, in their normal condition, afford an electric connection, so as to form a part of, and not interfere with, the said closed circuit of the ordinary alarm.

In the accompanying drawings, Figure 1 represents a side elevation of my automatic circuit and bell-alarm; Fig. 2, a top view, partly in section on the line *x x*, Fig. 1. Fig. 3 is a diagram illustrating a mode of introducing automatic signal-instruments into the closed circuit of a district alarm-telegraph.

A represents a bracketed shelf, to which the clock-train B, of the usual construction, is attached. B is a bell, which is attached above the clock-train. C is the hammer, the staff of which is connected to the shaft of the escapement *a*. E is the key, which is applied to the shaft of the mainspring, and serves for the double purpose of winding up a clock-train and holding the circuiting-wheel *b* in place. The circuiting-wheel *b* is notched in such a manner that the building in danger is indicated, by the interruption of the circuit as registered, by means of a relay and register in

the usual manner at the station. A spring, *d*, is connected by a set-screw, *e*, and wire, *w*, to one pole of the circuit, while the clock is connected by wire *w*² to the other pole. The curved end of spring *d* passes along the periphery of the circuiting-wheel *b*, and keeps the circuit closed as long as the clock-train is at rest, interrupting the circuit when in motion by the action of the notches. A bent wire, *g*, is applied to the staff of the hammer and rests against a hook on the extension of the upper arm of a wire spring, F, which is applied, by a set-screw, *h*, to an upright pillar, G, of shelf A. The forks or arms of the spring F clasp the alarm-thermostat or indicator H, which consists of a bulb of glass or other frangible material containing mercury, spirits, or other liquid expansible by heat. The lower end of the thermostat H rests on an adjustable set-screw, *i*, by which the height of the thermostat and the continuous contact of the upper arm and wire *g* are secured, and thereby the clock-train held in check. As long as all the springs *d* are in unbroken contact with the circuiting-wheels, a completely closed circuit is established with the buildings connected and with the station. If, in any one of the buildings, the thermostat should either burst or otherwise indicate the presence of fire or undue heat, so that the connection of the wire spring and clock-train is disturbed, the latter will immediately be set in motion, and communicate this fact, not only to the occupants of the buildings by the ringing of the bell, but also to the station by the interruption of the circuit. If the instrument is used without electrical connection, the alarm will be given by the action of the bell merely, forming thereby the cheapest instrument for indicating fire, and one which will always be in working order without requiring special care or attention.

The instrument above described forms the subject of a separate application. In carrying out my present improvement any other form of automatic signal-instrument may be employed, which will be adapted in its normal condition to form a part of the closed circuit of a district alarm-telegraph.

From the foregoing description it will be seen that each of my automatic signal-instru-

ments may form part of a closed circuit, the circuit being normally closed through the automatic signal-instrument itself.

In Fig. 3 I have illustrated a mode of introducing any desired number of such automatic signal-instruments, E E', into the circuit of manual signal-boxes S S', which latter may be of any of the usual forms. The automatic instruments E E E are supposed to be placed one in each room of a house, and the instruments E' E' one in each room of another house, the manual signal-boxes S S' being placed one in each house, as usual. The "signature" or signal of all the signal-wheels E E E in one house may be alike, being indicated in this illustration by two notches in the said wheels. The signal-wheels E' E' of another house are adapted to give another signal, as indicated by three notches in each. In practice, the signals produced automatically by the wheels E E', will be distinguished from those turned in through the boxes S S', by arranging the wheels E E' to make a larger number of revo-

lutions, or in any other suitable manner. L may represent a battery, and M an electro-magnet, in the central office of a district alarm-telegraph. It will be observed that the circuit through the automatic signal-instruments being normally closed the introduction of the said instruments does not interfere in any manner with the operation of the ordinary signal-boxes S S'.

The following is claimed as new:

The combination, with a district-alarm signal-box or series thereof, of one or more alarm mechanisms operated directly through changes of temperature, and arranged in the normally-closed circuit of such alarm signal-boxes.

The above specification of my improvement in electro-magnetic alarms signed this 20th day of September, 1873.

J. H. GUEST.

Witnesses:

OCTAVIUS KNIGHT,
WALTER ALLEN.