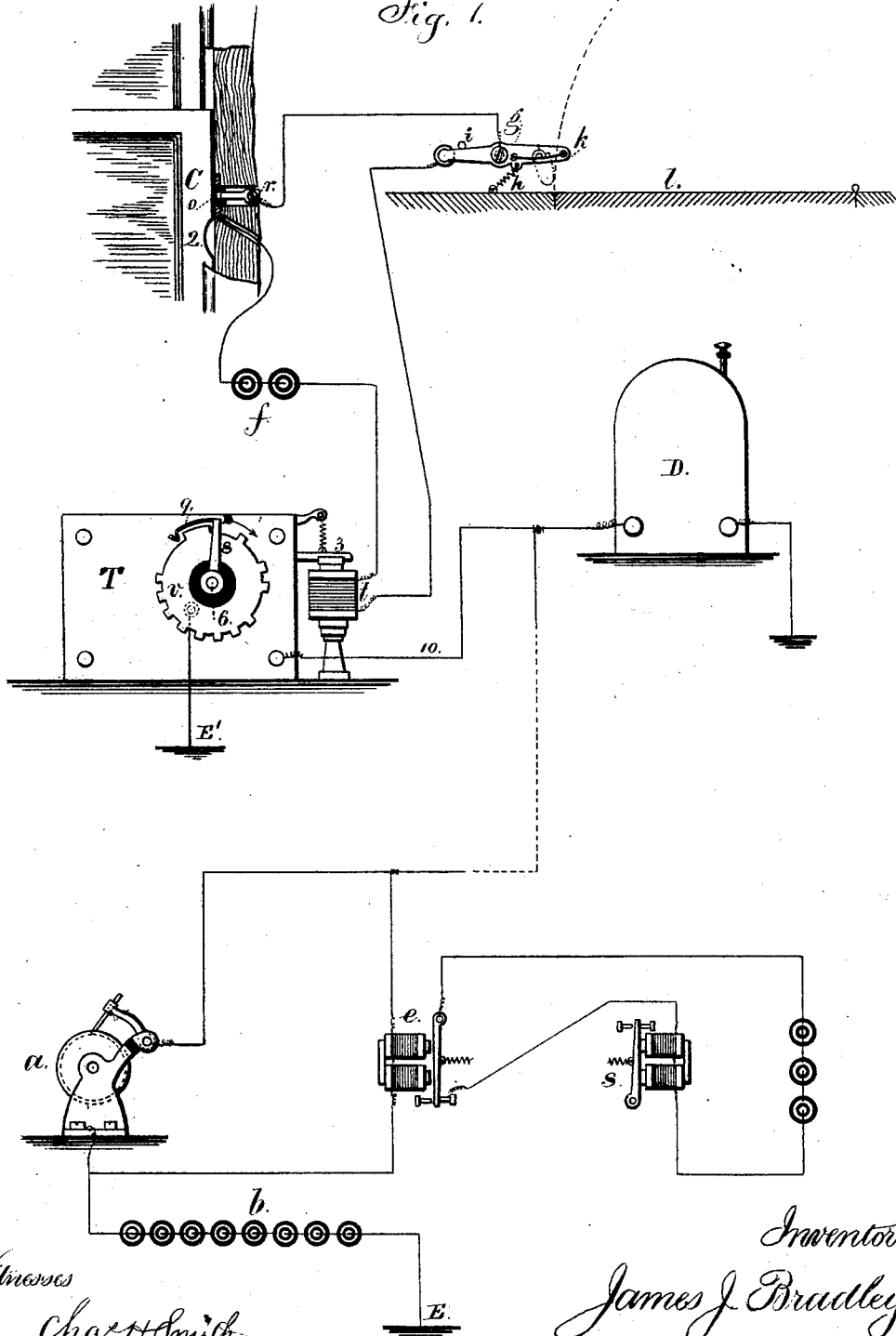


J. J. BRADLEY.
Circuit-Breakers for Electro-Magnetic Burglar-Alarms.

No. 196,557

Patented Oct. 30, 1877.

Fig. 1.



Witnesses
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William G. Mott

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 per *Lemuel W. Ferrill*
att'y

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Fig. 2.

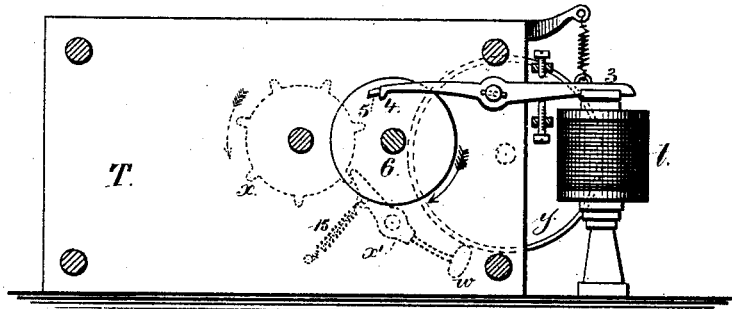


Fig. 3.

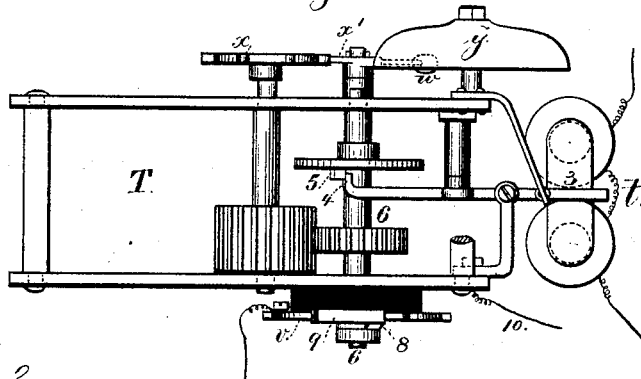
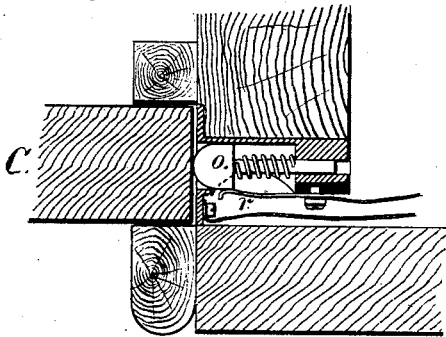


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES J. BRADLEY, OF NEWARK, NEW JERSEY, ASSIGNOR TO GEORGE W. HUBBELL, ENOS RUNYON, JABEZ FEAREY, AND F. T. FEAREY, OF SAME PLACE.

IMPROVEMENT IN CIRCUIT-BREAKERS FOR ELECTRO-MAGNETIC BURGLAR-ALARMS.

Specification forming part of Letters Patent No. **196,557**, dated October 30, 1877; application filed August 22, 1877.

To all whom it may concern:

Be it known that I, JAMES J. BRADLEY, of Newark, in the county of Essex and State of New Jersey, have invented an Improvement in Burglar-Alarms, of which the following is a specification:

I make use of a closed circuit in the building, which circuit is broken when any door or window is improperly opened, and I employ a transmitter that is brought into action by the opening of a door or window to give a signal at a central office or police-station in addition to ringing an alarm, and the signal will be correctly given, even when the door or window is instantly closed again.

In the drawings, Figure 1 is a general view illustrative of the circuit-connections. Fig. 2 is a section of the transmitter, and Fig. 3 is a plan of the same. Fig. 4 is a section of the window spring-circuit closer.

The recording instrument *a* is located at a central office or police-station, at which there is also a main battery, *b*, and earth-connection *E*. The line extends to any desired number of places, and at each there is a signaling-box of any desired character adapted to the call of messenger, or police, or firemen, as usual in what are known as "district-telegraphs." The instrument of this character is illustrated at *D*, and, as a chemical recorder and a district-telegraph are shown and described in Patent No. 169,972, November 16, 1875, and the same can be used in connection with the present improvements, it is not necessary to furnish any further detailed description.

By placing a magnet, *e*, in a shunt around the chemical recorder *a*, the same operates as a relay to the sounder *s* when the message or signal is to be received by sound or attention called to the signal.

At the building containing the burglar-alarm there is a battery, *f*, and the circuit-connections, as usual; but the circuit-closer at the door is different from those usually employed. It consists of a lever, *g*, and spring *h*, by which the end of the lever *g* is kept in contact with the peg *i*, and the circuit closed in the normal position. The other end of the lever is over the edge or top of the door *l*,

so that the door comes into contact therewith as it is opened, and the lever is thereby moved away from *i* and the circuit broken.

To provide for closing the door and to prevent the circuit being broken in closing the door, I make use of a swinging detent, *k*, at the end of the lever, united thereto by a knuckle-joint, and provided with a spring, so that the detent only will be moved as the door is shut, and both detent and lever will be moved as it is opened, and the signal will only be given upon opening the door.

The window-spring consists of a spring-bolt, *o*, within a metal case, the end of which is rounded and rubs against the edge of the sash, and there is a double inclined or curved notch at 2 in the edge of the sash *C*; hence this bolt will only move forward in its case when the notch of the sash passes its end. There is an insulated spring, *r*, adjacent to the bolt and in contact therewith when the window is closed, so that the circuit is completed through the bolt and spring, the wires being connected respectively to the said bolt and spring; but when the bolt is projected by its spring into the notch of the sash, the circuit is broken to give the alarm or signal by the end of the bolt separating from the circuit-closing spring.

In order to give a signal at the central station indicating the building in which the circuit has been broken a transmitting-instrument, *T*, is employed in each building. The same contains a magnet, *t*, in the local circuit of the battery *f*; hence the armature 3 is held down by the magnet until the circuit is broken by the opening of a door or window. This armature 3 has a lever with stop 4 at one end. This engages a stud, 5, upon a wheel and shaft, 6, in the train of gearing or clock-movement of the transmitting-instrument. Upon the same shaft 6 is an arm, 8, and spring circuit-closer 9 at its end, and there is a stationary insulated signal-ring, *v*, around the shaft 6, and the main line of the district circuit is connected by a branch, 10, to the transmitter *T* and the signal-ring *v* by a wire to earth *E'*. The edges of this signal-ring are notched, so as to leave groups of projections

corresponding to the number or character by which the particular building is designated and known at the central office, and the circuit-closing spring 9 is not in contact with either projection of *v* when at rest. Hence the circuit through the transmitter remains broken when in a normal position; but as soon as a window or door is opened the local circuit is broken, and the magnet *t* allows its armature 3 to be drawn back by its spring, liberating the train of clock-work or gearing, and causing the arm and transmitting circuit-closer to revolve around the ring and indicate the location of the burglary at the central station. When the door or window is closed the circuit is completed and the signal ceases. Until this is done a bell or alarm is rung upon

the premises by the revolving star-cam *x*, lever *x'*, hammer *w*, spring 15, and bell *y*.

I claim as my invention—

1. The combination, with the spring circuit-closing lever *g* and connections for a door, of the swinging spring-detent *k*, substantially as and for the purposes set forth.

2. In a burglar-alarm for windows, the combination, with the spring-bolt *o* and notched sash, of the insulated spring *r* and circuit-connections, as set forth.

Signed by me this 16th day of August, 1877.

JAMES J. BRADLEY.

Witnesses:

ABRAHAM MANNERS,
J. T. MURRAY.