No. 648,069. Patented Apr. 24, 1900.

J. W. CULP.

BURGLAR AND FIRE ALARM.

(Application filed Apr. 18, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

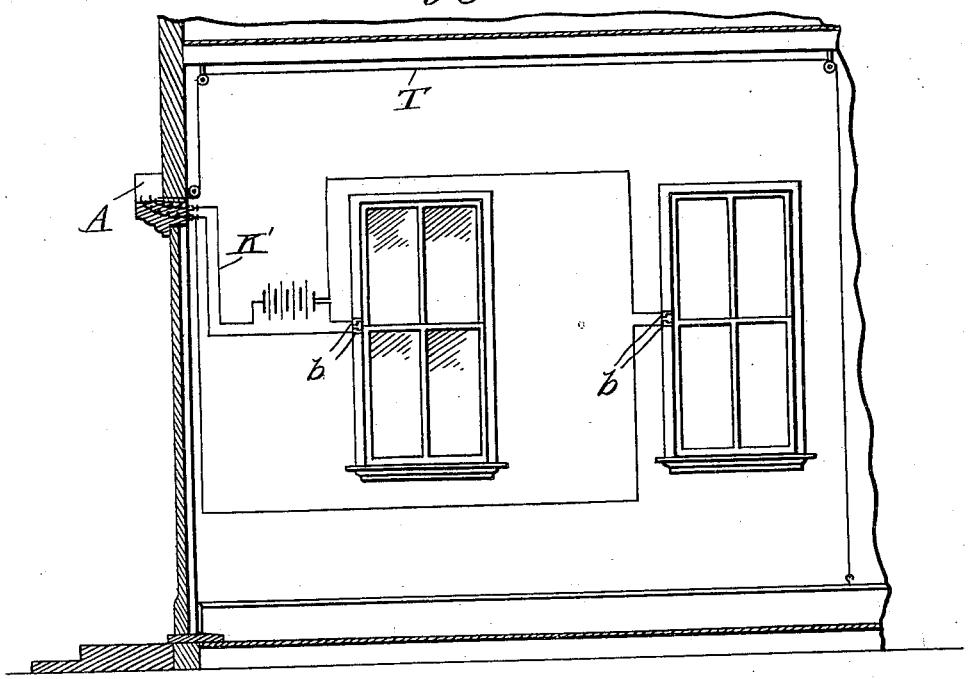

Fig. 2.

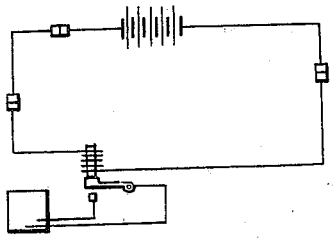

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Fig. 3.

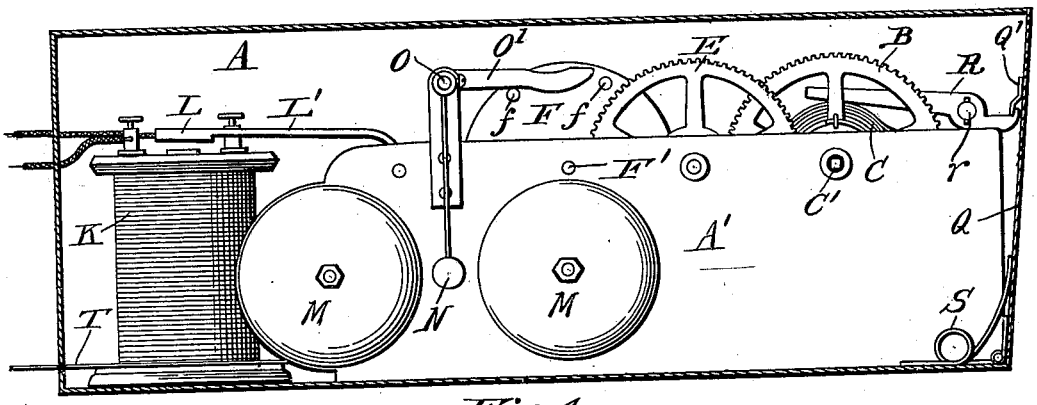


Fig. 4.

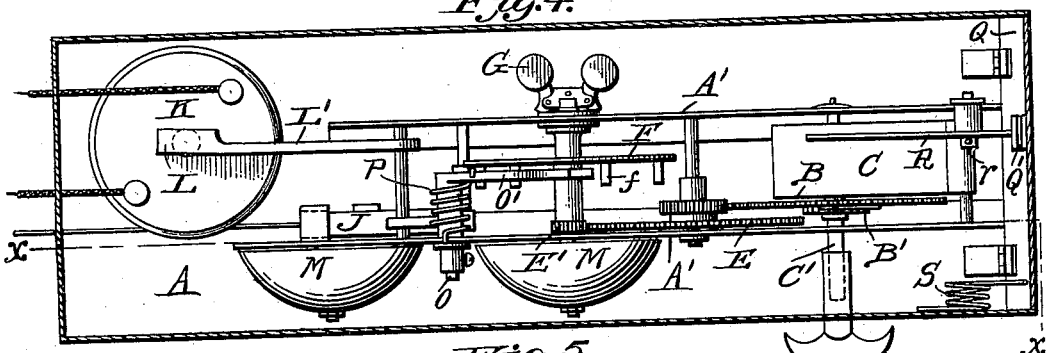
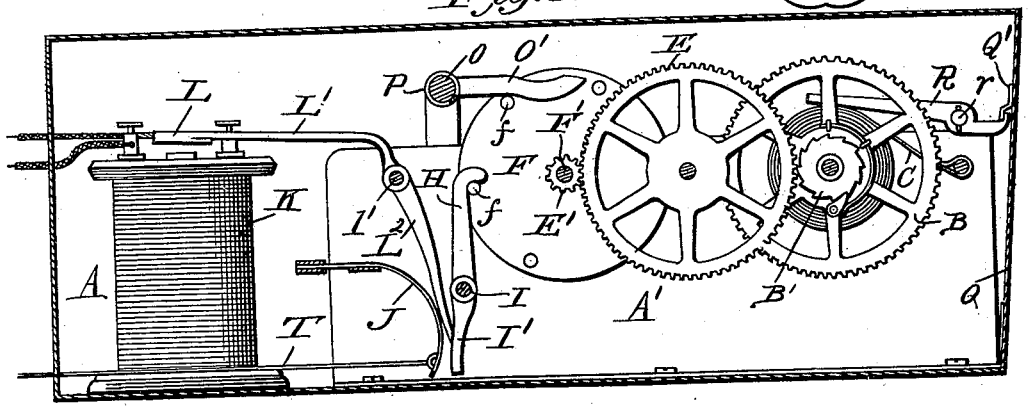


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN W. CULP, OF WAKARUSA, INDIANA.

BURGLAR AND FIRE ALARM.

SPECIFICATION forming part of Letters Patent No. 648,069, dated April 24, 1900.

Application filed April 18, 1899. Serial No. 713,509. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. CULP, a citizen of the United States, and a resident of Wakarusa, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Burglar and Fire Alarms; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings shows the invention as in application, the electric circuit being shown diagrammatically. Fig. 2 is a diagrammatic representation of a modification of the electric circuit. Fig. 3 is a side elevation of the invention, side of case being removed. Fig. 4 is a plan view of the invention, top of case being removed. Fig. 5 is a section on the line 4 4, Fig. 4.

This invention is designed to provide an improved burglar and fire alarm of simple and efficient character; and it consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings, the letter A designates a suitable casing or closure, preferably of metal. B is a large gear-wheel journaled between suitable supports A′ in said casing. C is a driving-spring for said gear-wheel, and C′ is the winding-arbor therefor, which also carries the gear-wheel B, which is connected thereto by a pawl and ratchet B′. The wheel B is connected by intermediate multiplying-gears E E′ with a wheel or disk F, which is provided on one face thereof with a series of projecting bills or studs *f*. The shaft F′ of the wheel F is provided at one end with a centrifugal governor G.

H designates a hooked dog or pawl which forms an arm of a rocker-shaft I and which is designed to engage with any one of the pins or studs *f* of the wheel F. The shaft I has an arm I′ extending downwardly or in the opposite direction to the dog or pawl-arm H, and pressing against this arm I′ is a suitable spring J, the tension of which acts when free to move the rocker-shaft I into a position to release the dog or pawl H from engagement with a stud of the wheel F.

K designates an electromagnet which is included in an electric circuit K′. L is an armature for said magnet, carried by a lever L′, fulcrumed upon a shaft or bearing *l*′ and having an arm L^2, which is bent in position to contact with the arm I′ of the rock-shaft I.

M designates alarm-bells, (two being shown, although one only may be used,) and N is a bell-hammer which forms a depending arm of a rocker O. Said rocker O also has a downwardly-curved end portion O′, lying in such position that its lower edge is in the path of movement of the pins or studs *f* when the wheel F is rotated. P is a coiled spring which acts to hold the arm O′ in contact with one of said pins or studs in order that the arm O′ of the bell-hammer shall be in position to be actuated by each of the pins *f*. The downwardly-curved end portion of the arm O′ gives the bell-hammer a greater amplitude of movement.

Q is a door hinged at its lower edge and forming one end of the casing or closure A and which is normally secured in closed position by a latch-lever R, pivoted at *r* and engaging a lug or projection Q′ on the inner face of the door. The opposite arm of said lever rests upon the spring C. S is a spring which acts to throw the said door open when the latch is released.

T designates a cord or the like, which is connected at one end to the free portion of the spring J and which extends out through the opposite end of the casing A from its hinged door.

In operation the casing A is supported in any desired portion of the building, or it may be placed against the outer wall of a store or residence, on the outside, with the cord passing through said wall. One or more of these cords or branches thereof are led through the building or through such portions thereof as are most exposed or likely to outbreaks of fire, the free end being secured at some portion of the building under sufficient tension to normally hold the spring J out of contact with the arm I′ of the rocker I, the dog or pawl H being thereby left in engagement with

one of the pins or studs *f* of the wheel F and holding the spring B^2 and the gear-train actuated thereby out of operation. An outbreak of fire in any part of the building in the neighborhood of the cord will consume the latter, thereby releasing the spring J, which immediately acts to disengage the pawl H and free the wheel F and its driving-spring and gear-train. The rotation of the wheel F causes the pins or studs *f* to successively vibrate the arm O′ of the rocker O to thereby actuate the bell-hammer M. As soon as the spring C begins to unwind it lifts the inner arm of the latch-lever R, thereby releasing the door Q. The latter is thrown open by the spring S, thus enabling the alarm to be heard. The electric circuit K′, which includes the magnet K, is also extended throughout the building or to the necessary points therein and includes contact devices, as indicated at *b*, which are arranged in any well-known or suitable manner to be actuated by the opening of a door or window to close the circuit and thereby energize the electromagnet K, or said contacts may be arranged in a normally-closed circuit, which will be broken by a movement of any contact and will thereby act to close a local circuit K′, in which the magnet is included. The particular arrangement of the circuits and contact devices forms no part of this invention, and various arrangements suitable for the purpose are known in the art.

If the alarm is used in a bank or other place where cash or other valuables are handled, a suitable circuit-closing device to be operated by the hand or foot may be located near the counter or desk of the teller or cashier, so that upon any attempt at robbery he can sound an alarm and summon assistance. When the magnet K is energized, its armature is attracted, thereby rocking the lever L′ upon its shaft or bearing *l*′ and forcing the arm L^2 of said lever into contact with the arm I′ of the rock-shaft I. This releases the dog or pawl H and operates the alarm in the same manner as before described.

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

1. In an alarm device of the character described, a casing or closure having a hinged or pivoted door or wall alarm devices therein, a mainspring and gear-wheel for actuating the alarm devices, a pawl device which normally holds said gear and spring out of operation, means for releasing the pawl device under certain conditions, a pivoted latch-lever which engages said door by one of its arms and whose other arm rests on the mainspring, and means for throwing the door open when released by said lever, substantially as specified.

2. In an alarm device of the character described, a casing or closure having a hinged door a latch device therefor, a wheel or disk therein having a series of studs or projections, a mainspring and gear for actuating said wheel or disk, a governor on the shaft of said wheel or disk, a rocking pawl device arranged to engage any one of said studs or projections, a spring arranged to act when free upon said pawl to release its engagement, an electromagnet, its armature and armature-lever, the latter also arranged to act when the magnet is energized to act upon the pawl to release its engagement, a bell, a bell-hammer having an arm lying in the path of movement of said studs or projections, and means for releasing the door-latching device upon the release of said pawl and the subsequent action of the mainspring, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. CULP.

Witnesses:
OSCAR JAY,
E. E. MEUNMERT.