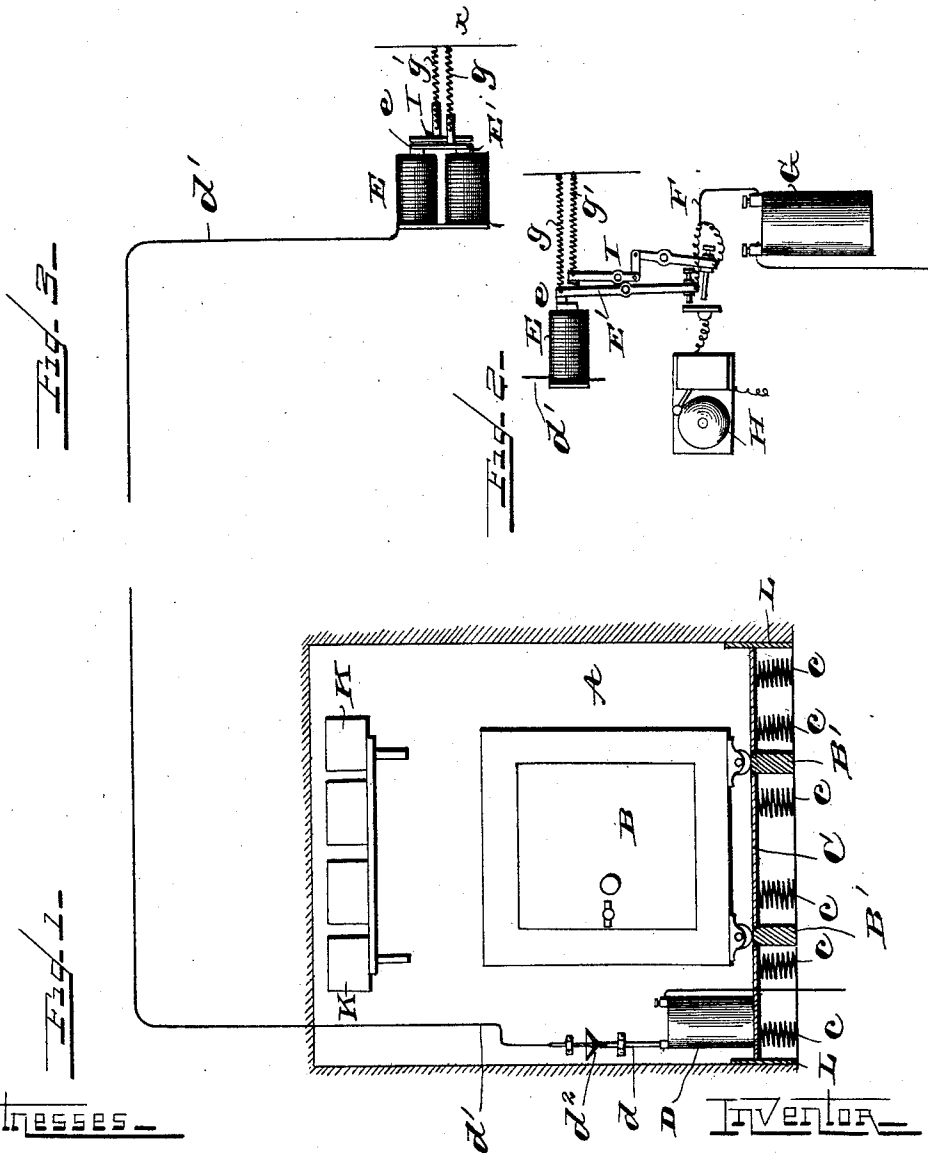


(No Model.)

W. H. WARD.
BURGLAR ALARM.

No. 567,845.

Patented Sept. 15, 1896.



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BURGLAR-ALARM.

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To all whom it may concern:

Be it known that I, WILLIAM HARRISON WARD, a citizen of the United States, residing at Mound City, in the county of Linn and State of Kansas, have invented certain new and useful Improvements in Burglar-Alarms; and I do hereby 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.

My invention relates to a new and improved burglar-alarm and protective system for banks and other buildings and the safes or vaults therein, and has for its object to provide means for automatically operating an electromechanical alarm signaling apparatus at a distant point, as a police-station or residence, or both, whereby any effort to approach the safe will be signaled to one or other or all of the termini by means of a break in the electric current from the bank to the station or residence.

In attaining the above-stated objects my invention comprises certain details of construction and arrangement of devices which will be hereinafter fully described in the specification, illustrated in the drawings, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of a safe located in a bank-vault, having wires communicating with one or more distant alarms located in a police-station or banker's residence, and Fig. 2 shows the alarm-bell and the means by which it is actuated. Fig. 3 illustrates in detail the signaling device and the means by which it is operated.

Like letters of reference designate like parts in the several figures of the drawings.

A indicates a vault in a bank or other building, in which is located a safe B, mounted on pedestals B', placed upon the floor of the vault.

A false or movable floor C is arranged above the vault-floor and rests on springs c, so that when pressure is applied to the floor C it will descend, it being provided with openings for the pedestals B', through which they pass without stop or interruption.

Around the lower part of the vault and ex-

tending upward to a point above the false floor is an iron casement or mason-work L, which prevents the introduction of blocks or obstructions to hold the false floor from descending when pressure is applied, as, for instance, the weight of a person or persons entering the vault, or weights K, supported on the sides or door of the vault and capable of being dislodged by shock of explosion or concussion or forcible opening of the vault-door.

Upon the false floor C is arranged a battery D, having its wire *d* normally in contact with a wire *d'*, running to and connecting with a police-station or residence, or both, and said battery having suitable ground connection, or a second wire may extend to said station or residence to complete the circuit. One of the wires *d* or *d'* is provided with a cup-shaped end *d*² to insure connection with the other when the false floor resumes its normal position, or the meeting ends of the wires may be connected by means of a suitable rigid guide arising from the battery or any equivalent means for assuring their contact when the false floor rises.

The wire *d'* at the termini connects with an electromagnet E, having a magnetic or armature bar E', centrally pivoted, its upper end held by a spring *g*, attached to a plate X, and when the electromagnet is energized the bar E' is drawn to the point *e* of the electromagnet, and when the electromagnet is de-energized, by breaking the current from battery D in the vault, the spring *g* retracts the bar E' and causes the wire from battery G to connect with the bell and sound the alarm, the lower end of said bar or lever E' being in contact with a conducting-wire F, extending from a generating jar or battery G to an alarm-bell or annunciator H.

I is another and double-pivoted magnetic or armature bar whose office will be hereinafter fully explained.

During banking hours the false floor C will be secured from descending in any convenient manner, but when the vault is closed, the support to the false floor having been removed, if any one enters the vault or dislodges the weights the false floor will descend from the weight of the person stepping upon

it, or from the falling weights, and the contact between the wires d and d' will be broken and the alarm sounded by reason of the bar E' causing the wire F from the battery G to

contact with the bell or annunciator II.
Should any one attach a wire from a battery of their own to the wire d' , which could not be easily done if the wire d' is properly insulated, the increased current would increase the power of the electromagnet E , and it would draw the bar or lever I , which is controlled by the spring g' and is hinged on two pivots, so that on being drawn to the electromagnet E it would swing the wire F , coming from the generating jar or battery G , into contact with the alarm-bell II and cause it to sound.

Bar I is intended to work only in the event of the attachment or application, by burglars, of an additional battery or current, in which case the increased power of the electromagnet E caused by such current will draw the upper end of the upper half of the bar I toward said electromagnet E , and from the construction of said bar I , which is in two parts, it will move the lower end of its lower half toward the alarm-bell II and carry the wire from battery-jar G into contact with said alarm-bell II just as efficiently as bar E' would perform the same office in the case of a break in the current.

Bar E' is normally held in contact with the electromagnet E , but in case of a break in the current between battery D and electromagnet E bar E' will be drawn away from the electromagnet E by the spring g or equivalent means provided for the purpose, the lower end of bar E' carrying the wire from battery G into contact with the alarm-bell II. So, then, in the event of either a break in the current between battery D and the electromagnet E or the attachment of another battery-wire the wire from battery-jar G is forced into contact with the alarm-bell II, causing an alarm to be sounded.

The bar or armature-lever E' is normally held in contact with the electromagnet E , while the bar or armature-lever I , doubly pivoted, is normally not in contact with the electromagnet E .

The advantages of my invention are, first, the alarm is sounded by breaking the connection between the battery in the bank-vault and the electromagnet E at police-station or residence by pressure applied to the false floor, and therefore the alarm-bell cannot be prevented from sounding by cutting the wire at any accessible intermediate point, and, secondly, should an additional wire be connected the increased current would throw the lever I into contact with the alarm-bell or annunciator and sound the alarm.

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

1. In a bank-vault, the combination of a

spring-supported and downwardly-yielding false floor, with a battery carried thereon; one of the wires from said battery extending upward, and normally in contact with a second wire extending through the said vault to a distant place; an electromagnet or armature connected to the other end of said wire; suitable ground connections; a centrally-pivoted armature-lever having a contact-wire at its base; and a battery in circuit therewith; an electric bell or annunciator; and a retracting-spring connected to the upper end of said armature-lever, whereby, when the armature or electromagnet is deenergized by the depression of the false floor and breaking of the contact of the wires within the vault, the said retracting-spring will operate the armature-lever and force the contact-wire at the base thereof against and in circuit with the said electric bell, or annunciator, all substantially as hereinbefore shown and described.

2. In a bank-vault protected at its lower portion by a metal casement or mason-work the combination of a false or yielding floor normally spring-supported, having openings for the passage of the safe supports or pedestals; with a battery on said floor having suitable ground connections, and having its upper wire normally in contact with a second wire extending to an electromagnet or armature; the said electromagnet; a pivoted bar in contact therewith; a contact-wire at its base; a battery in circuit therewith; an electric bell; a retracting-spring; and a metal plate, all arranged, constructed and operating substantially as described.

3. In a bank-vault provided with weights, so arranged on its sides and door as to fall by concussion, or shock of explosion or violently opening said door, the combination of said weights; a false or yielding spring-supported floor; a battery located thereupon having suitable ground connection, and also having its wire normally in contact with a second wire extending to an electromagnet; the said electromagnet; a pivoted bar in contact therewith when the electromagnet is energized; a generator with its wire so arranged that when the electromagnet is deenergized it will connect with an electric bell; and the said electric bell, all constructed, arranged, and operating substantially as described.

4. The combination with a false or yielding floor, supported normally by springs, of the battery D , provided with suitable ground connection, and having its wire d , normally in contact with the wire d' , extending to an electromagnet E ; the said electromagnet; the pivoted bar E' ; the spring g ; the generator G ; with its wire F , and the alarm-bell II, all constructed, arranged and operating substantially as hereinbefore described.

5. The combination of the false or yielding floor C ; the supporting-springs c ; the battery D , carried upon said floor, and having suitable ground connection or equivalent means