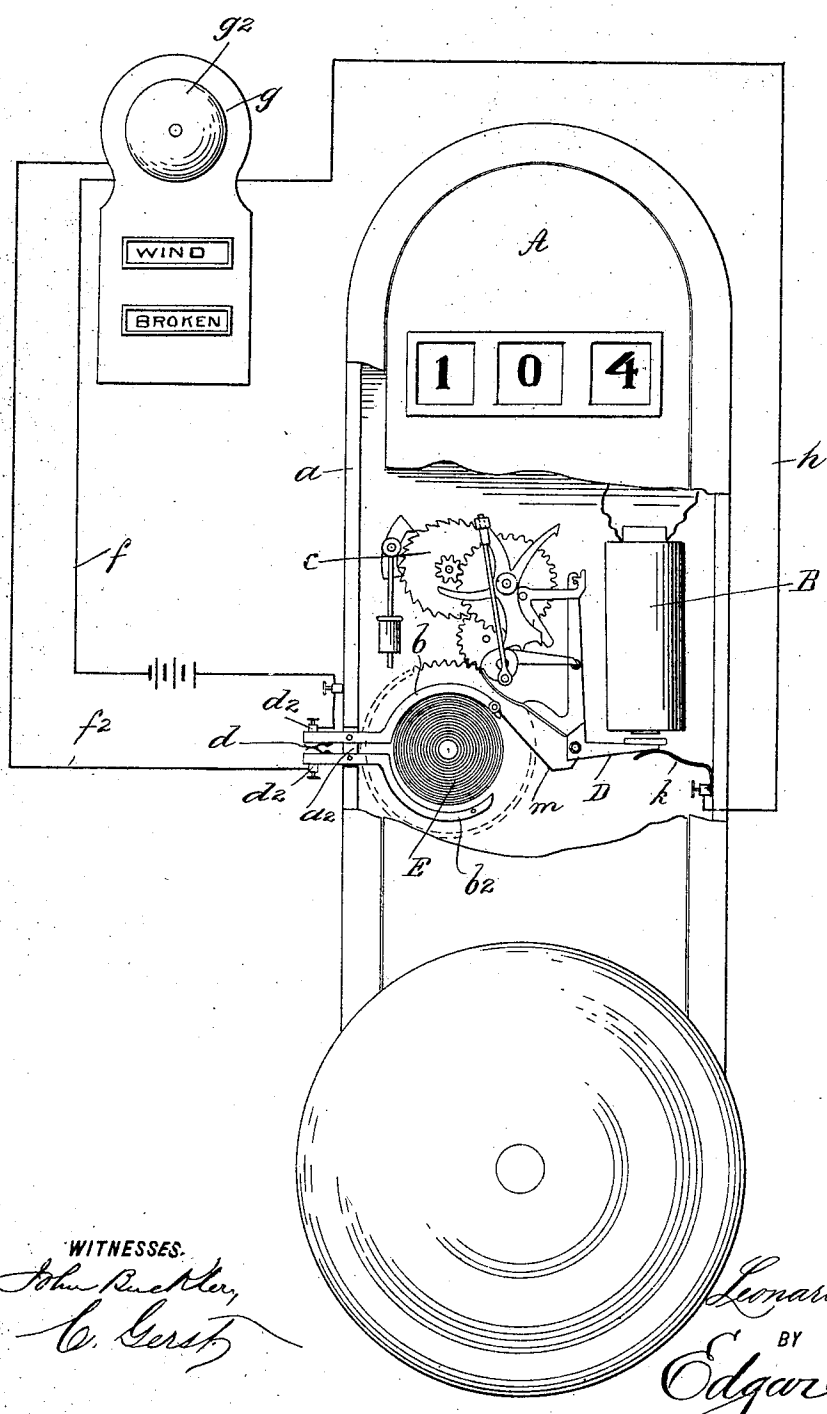
No. 615,723. Patented Dec. 13, 1898.

L. LE BARON.

FIRE ALARM INDICATOR.

(Application filed Sept. 29, 1897.)

(No Model.)



WITNESSES.
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UNITED STATES PATENT OFFICE.

LEONARD LE BARON, OF PENSACOLA, FLORIDA, ASSIGNOR OF ONE-HALF TO HENRY H. THORNTON, OF SAME PLACE.

FIRE-ALARM INDICATOR.

SPECIFICATION forming part of Letters Patent No. 615,723, dated December 13, 1898.

Application filed September 29, 1897. Serial No. 653,483. (No model.)

To all whom it may concern:

Be it known that I, LEONARD LE BARON, a citizen of the United States, residing at Pensacola, in the county of Escambia and State of Florida, have invented certain new and useful Improvements in Fire-Alarm Indicators, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to fire-alarm apparatus, and has for its object the production of an attachment therefor that will automatically announce when the circuit by means of which the indicator is operated is broken, grounded, or otherwise rendered inoperative and when the perfect operation of said indicator is made impossible through the breakage of the mainspring thereof or by reason of said spring having run down.

A further object of the invention is to provide an attachment for fire-alarm indicators that will be simple in construction, efficient in operation, and inexpensive to manufacture, while serving the purposes above enumerated.

The invention consists in the novel features of construction hereinafter set forth and described, and more particularly pointed out in the claims hereto appended.

The accompanying drawing, which forms a part of this specification, is of an ordinary fire-alarm indicator with my improved attachment applied thereto, the various parts of said indicator and said attachment being designated by letters of reference.

Referring to the drawing, at A is shown a fire-alarm indicator of ordinary construction operated by means of a magnet B, which operates upon the mechanism C by means of the armature on the swinging arm D, which releases the mechanism and permits the free movement of the same. This action is accomplished by means of a mainspring E, which exerts a constant strain upon the said mechanism by means of a cog-wheel mounted rigidly upon the axle, to which said spring is attached at one end, which transmits the torsional strain constantly exerted thereon to the mechanism C.

The outer frame a of the indicator has a slot a^2 therein, within which are pivoted the lever b and a similar arm b^2, which is stationary and incapable of any oscillating or vertical movement. The lever b and arm b^2 consist of an approximately straight short arm, by means of which it is attached to said frame, and an integral long arm curved and adapted to encompass the mainspring E. At the outer end of each of these arms are contact-points d and an ordinary socket and thumb screw d^2, by means of which the wires ff^2 are attached to said lever and said arm, respectively. These wires ff^2 are connected with the indicator g, the interior construction of which I do not lay claim to, as it is obvious that this attachment may be applied to any electric indicator having an alarm-bell attachment thereon which is sounded by means of an electric current.

This indicator differs from the class of indicators above described merely in that it has thereon characters "Wind" and "Broken," which respectively indicate when the mainspring ceases to become operative or when the current for operating the indicator has become grounded or otherwise rendered inoperative, the alarm-bell (shown at g^2) being sounded continuously whenever either of these mishaps is announced.

The wire f is attached to any desired form of electric battery, so that the current which operates the attachment is independent of the main current by means of which the indicator is rendered operative.

The wire h, which communicates with said indicator and annunciator g, is attached to a flexible arm k, mounted within the casing a and in such proximity to the arm D as will permit of the completion of the circuit formed by the wire f, the lever b, and the wire m, connecting said arms, when said arm D drops, as is hereinafter described.

The operation of my improved attachment is as follows: When the mainspring is suitably wound, the lever b will follow the spring, thus separating the contact-points d and breaking the circuit formed by the wires ff^2 and the contact-points on said arms. When by continued use or breaking the spring E

unwinds, the expansion thereof will cause an upward movement on the long arm of the lever *b*, which will cause the contact-points *d* to come into such relation as will complete the circuit and so turn the indicator *g* to "Wind" and notify those in charge that said spring needs rewinding and at the same time ring the gong g^2 continuously until the points have been separated and the circuit broken by the winding of said spring. When the circuit of the fire-alarm system is in order, the armature on the arms D will rest permanently against the magnet B; but when the circuit is broken, grounded, or otherwise rendered inoperative this contact ceases and the arm falls off, as is shown in the illustration, coming in contact with the flexible arm *k*, thus turning the indicator on the annunciator to "Broken" and ringing the bell in the same manner as when the "Wind" apparatus is actuated.

By the means above described I have attained the objects of my invention, having produced an attachment for fire-alarm indicators which will automatically announce when the mainspring has become inoperative through breakage or through its having run down and when the circuit extending through the entire system has by grounding, being broken, or otherwise been rendered inoperative.

It is to be observed that it is not my intention to limit the invention to the precise construction herein described, as it is obvious that my device may be applied to any form of indicator and that there may be many variations in minor details of construction without departing from the spirit of my invention.

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

1. In an alarm apparatus, a main indicator having a mainspring, a stationary arm having one end situated opposite to and adapted to encompass said spring, a lever having one end situated opposite to and adapted to encompass said spring, and an auxiliary indicator in a circuit, one terminal of which is carried by the other end of said lever and the other terminal by the other end of said arm, substantially as described.

2. In an electrical alarm apparatus, a main indicator having a mainspring and mechanism actuated thereby, an electromagnet and armature controlling the operation of said mechanism, and an auxiliary indicator actuated by circuits controlled by the expansion of said mainspring and by the movement of said armature away from its magnet, substantially as described.

3. In an electrical alarm apparatus, a main indicator having a mainspring and mechanism actuated thereby, an electromagnet and armature controlling the operation of said mechanism, an auxiliary indicator in a circuit that is closed by a vibratory member actuated by the expansion of said mainspring, and another circuit controlling said auxiliary indicator, one terminal of which is carried by the armature of said electromagnet and the other by a stationary piece situated in the path thereof, substantially as described.

4. In an electrical alarm apparatus, a main indicator having a mainspring and mechanism actuated thereby, an electromagnet and armature controlling the operation of said mechanism, an auxiliary indicator in a circuit that is closed by a vibratory member actuated by the expansion of said spring, said vibratory member being electrically connected with the armature of said electromagnet, and a branch line from said auxiliary indicator having its terminal situated in the path of the said armature, substantially as described.

5. In a fire-alarm indicator, the combination with the main indicator, of an auxiliary indicator, a lever, a stationary arm, said lever and said arm being adapted to encompass the mainspring of said indicator, contact-points on said arm and said lever whereby the circuit in which said parts are mounted is closed by the expansion of said spring, said lever being mounted in an electric circuit independent of the circuit operating the fire-alarm system, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 21st day of September, 1897.

LEONARD LE BARON.

Witnesses:

CHAS. J. LEVEY, Jr.,

R. A. HYER.