

(No Model.)

J. L. BRADLEY.
ELECTRIC INDICATOR.

No. 504,196.

Patented Aug. 29, 1893.

Fig. I.

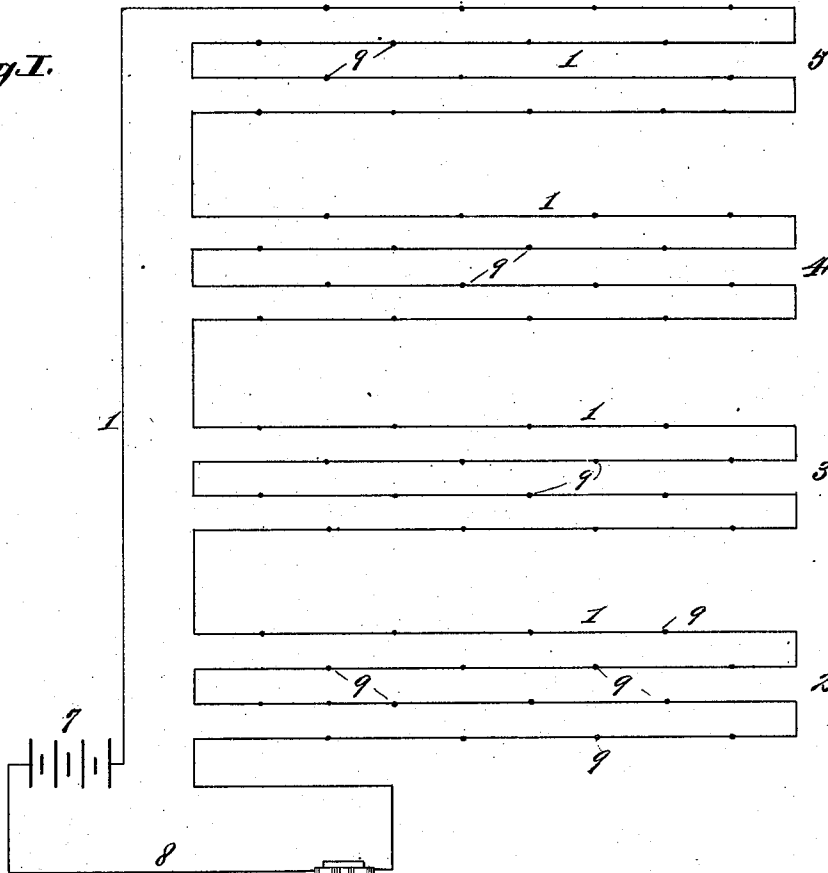
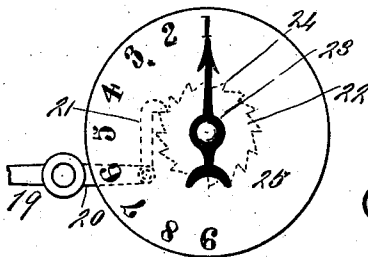
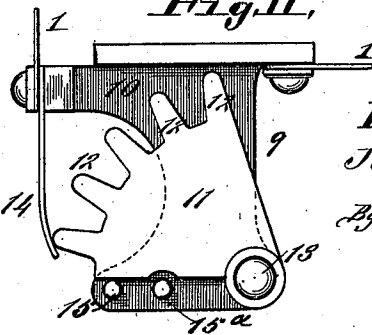


Fig. III.



Attest
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Fig. II.



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UNITED STATES PATENT OFFICE.

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ELECTRIC INDICATOR.

SPECIFICATION forming part of Letters Patent No. 504,196, dated August 29, 1893.

Application filed February 4, 1893. Serial No. 460,928. (No model.)

To all whom it may concern:

Be it known that I, JAY L. BRADLEY, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Electric Indicators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an improved indicator, which will signal and register the exact floor of a building where a fire exists, and will also signal a breakage of the wire in the building, or a weakness in the battery in the building.

My invention consists in features of novelty hereinafter fully described and pointed out in the claims.

Figure I is an elevation, illustrative of my invention. Fig. II is an enlarged view of the circuit breaker. Fig. III is an enlarged view of the registering dial.

Referring to the drawings, 1 represents a continuous wire, passed back and forth in sections 2, 3, 4 and 5, each occupying a floor of a building; after passing back and forth on one of the floors, the wire is extended to the next floor, and so on. The wire extends from a magnet 6, located in an engine house, remote from the building, or other place at which it may be desired to give the signal. After passing back and forth through the top story of the building, the wire extends to a battery 7 located in the building, and extends from the battery back to the magnet 6, as shown at 8, Fig. I. At suitable intervals, the wire 1 is provided with a suitable circuit breaker 9, such, for instance, as is shown in Fig. II. This circuit breaker consists of a bracket 10, to which is pivoted a segment 11, having a number of teeth or prongs 12. The segment is pivoted to the bracket at 13.

14 is a spring finger connected to the bracket, and arranged so as to be engaged by the teeth or prongs 12 of the segment 11.

15 is a fusible plug, which holds the segment 11 in its upper or normal position, in which position the spring finger 14 rests against one of the teeth or prongs 12 of the segment. As already stated, this circuit breaker is located at suitable intervals in the wire 1, the wire on one side of the circuit breaker having electrical connection with the

segment 11, either through the bracket 9, or directly, and the wire on the other side of the circuit breaker having electrical connection with the spring finger 14, but not having electrical connection with the segment.

16 represents a local battery located in the engine house, or other place, where the signal is to be given. 17 is the signal bell, 18 the wire connecting the battery 16 with the bell 17, and with a contact point 18^a, and also connecting the bell 17 with an armature 19, located beneath the magnet 6. The armature 19 has an extended end 20, to which is secured a pawl 21 engaging a ratchet 22 fixed on a shaft 23, which carries a finger or pointer 24, which works in connection with a dial 25 provided with numerals representing the different stories of the building in which the wire 1 is located.

The operation is as follows: Supposing a fire to exist in the fifth floor of the building, the plug 15 will fuse, and the segment 11 will drop, moving the lower tooth 12 out of contact with the spring 14. This will break the circuit in the wire 1, and the armature 19 will drop onto the contact point 18^a, sounding the alarm 17, by closing the circuit in the wire 18. The circuit in the wire 1 is immediately closed again by the next tooth 12 coming into contact with the finger 14, and the armature 19 will be drawn up again by the magnet 6, which will move the finger 24 to number 2 on the dial; then, when the second tooth 12 passes the spring 14, the circuit in wire 1 will be broken again, the armature 19 will drop, the alarm 17 will be again sounded, and when the third tooth 12 comes against the spring 14, the operation will be repeated, the armature 19 being drawn up and the finger 24 moved to the numeral 3. This operation is repeated until all of the teeth 12 have passed the spring 14, and as the circuit is not closed again by another tooth coming in contact with the spring 14, the armature 19 will be left in its lower position, leaving the circuit closed in wire 18, which will cause the alarm 17 to continue sounding until attention is attracted. The number of the teeth 12 correspond to the number of the floor upon which the circuit breaker is placed, as, for instance, on floor 1 there would only be one tooth to the segment, on floor 2 there would

be two, on floor 3 there would be three, &c. It will thus be understood that a signal will be given, indicating the story of the building upon which the fire is located, as well as an alarm sounded. In case of breakage of the wire 1, the action will be the same as in the case of fire, the story of the building where the breakage occurs being indicated by the dial and the alarm being given. In case the battery 7 should become exhausted, or partially so, or so much so as not to be efficient, this weakness will also be indicated by the armature 19 dropping from the magnet 6, which has not sufficient strength to support it, thus sounding the alarm, but, inasmuch as the circuit breaker 11 is not affected, the indicator will not be moved at such a time.

To provide against the indicator being operated in case the fusible plug 15 should become worn out, or accidentally broken, I provide a second fusible plug 15^a, located farther from the segment 11 than the plug 15 is, so that, in case of the wearing out or accidental breaking of the plug 15, the segment will drop onto the emergency plug 15^a, and, in dropping, one of the teeth 12 of the segment will pass the spring 14, while the next tooth 12 will not come in contact with the spring 14, the result of which is to give a continuous alarm. The plug 15^a being fusible at the same temperature as the plug 15, they will both give way at the same time in case of fire. By thus employing a normally closed circuit in the building where the wire 1 is located, and a normally open circuit at the place where the signal is to be given, the existence of fire is not only indicated, but the breakage of the wire 1

and a weakness in the battery 7 are also indicated.

I claim as my invention—

1. In an electric indicator, the combination of a continuous wire passed back and forth through the different stories of a building, circuit breakers located in said wire, a bell in electric circuit at the place where the signal is to be given, a magnet in circuit with said continuous wire, and an armature having a pawl and ratchet connection with said indicator; substantially as and for the purpose set forth.

2. In an electric indicator, the combination of a continuous wire passed back and forth through the different stories of a building, circuit breakers located in said wire, a bell and indicator in electric circuit at the place where the signal is to be given, a magnet in circuit with said continuous wire, and an armature having a pawl and ratchet connection with said indicator; substantially as, and for the purpose set forth.

3. In an electric indicator, the combination of a continuous wire passed back and forth through the different stories of a building, circuit breakers located in said wire and having two or more prongs or contact points, a bell and indicator in electric circuit at the place where the signal is to be given, a magnet in circuit with said continuous wire, and an armature having a pawl and ratchet connection with said indicator, substantially as set forth.

JAY L. BRADLEY.

In presence of—

ALBERT M. EBERSOLE,
E. S. KNIGHT.