No. 630,292. Patented Aug. 1, 1899.

G. W. MacKENZIE.

ELECTRIC SWITCH AND ALARM.

(Application filed July 16, 1898.)

(No Model.)

Fig. 1.

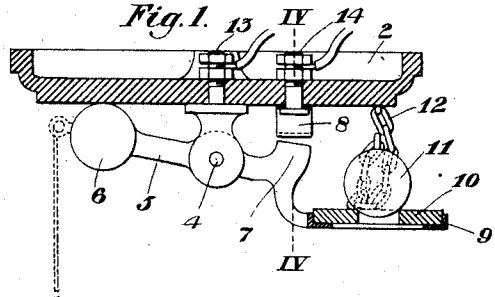
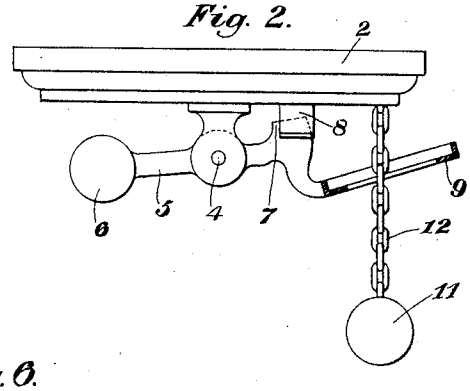


Fig. 2.



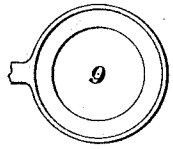


Fig. 6.

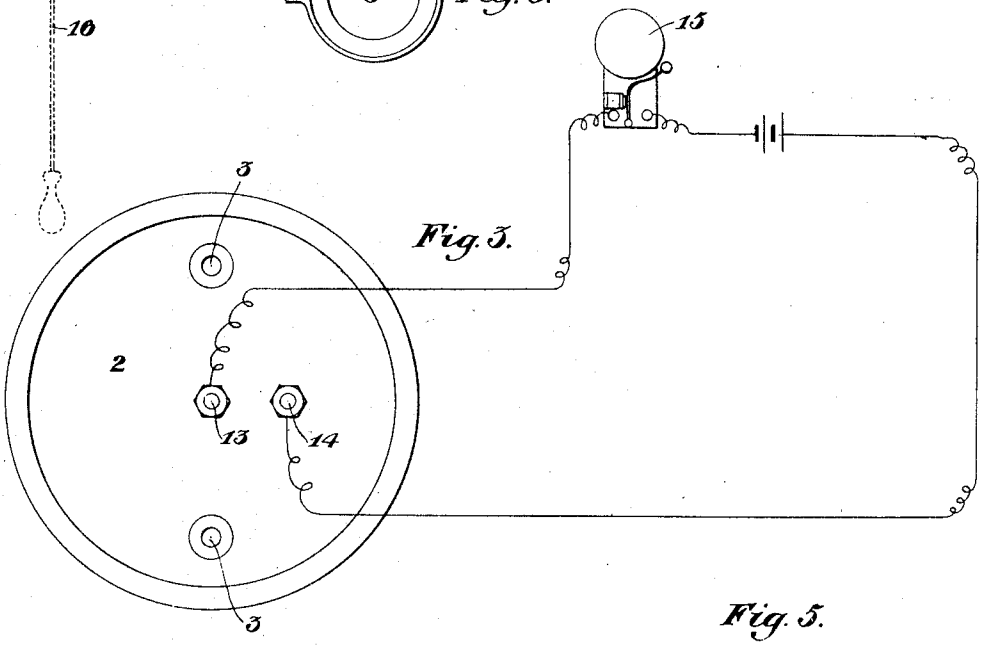


Fig. 3.

Fig. 4.

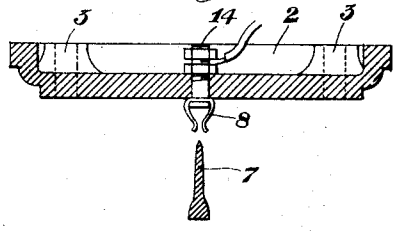
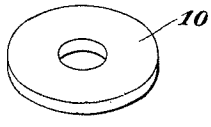


Fig. 5.



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his Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE W. MACKENZIE, OF BEAVER, PENNSYLVANIA, ASSIGNOR TO ISRAEL B. CHANTLER, OF SEWICKLEY, PENNSYLVANIA.

ELECTRIC SWITCH AND ALARM.

SPECIFICATION forming part of Letters Patent No. 630,292, dated August 1, 1899.

Application filed July 16, 1898. Serial No. 686,176. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MACKENZIE, a citizen of the United States, residing at Beaver, in the county of Beaver and State of Pennsylvania, have invented or discovered a new and useful Improvement in Electric Switches and Alarms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a central vertical section showing my device set. Fig. 2 is a side elevation showing the ball released and contact closed. Fig. 3 is a diagrammatic view showing the circuit. Fig. 4 is a cross-section on line IV IV of Fig. 1. Fig. 5 is a perspective detail view of the fusible washer. Fig. 6 is a detail plan view of the supporting-ring.

My invention consists of a switching device for closing an electric circuit and actuating an alarm and is designed to be operated under conditions produced by excessive heat or by the operation of a pull-cord.

Primarily the device constitutes a fire-alarm for the purpose of indicating the presence of heat due to unusual combustion, and to this end it is designed to operate by the melting of one of the elements, although for the purposes of an annunciator it will serve the ends in view equally well.

Referring to the drawings, 2 is a base, of porcelain or other non-conducting material, adapted to be secured to the ceiling by screws passing through holes 3. Pivoted centrally of the base to a depending support 4 is an arm 5, having at one end a counterweight 6 and at the other an upwardly-extending knife-edge contacting blade 7, designed to engage the contact-springs 8 by upward motion. An extension of the arm 5 is formed into a hollow ring 9, having an upturned retaining edge, within which is placed a ring 10, preferably hollow in the center, of fusible material, such as paraffin. Upon this ring is placed a weight 11, sufficiently heavy to overbalance the counterweight 6 and attached by a slack chain 12 to the base 2. This weight 11 is preferably spherical and of a diameter to permit it to pass easily through the ring 9. In case of sufficient heat being generated by combustion to melt the paraffin ring 10 the weight 11 will fall through the ring, as in Fig. 2, thereby releasing it from downward pressure and allowing the counterweight 6 to throw the opposite end upwardly and inserting the blade 7 between the springs 8. The central stem 13 of the support 4 projects up through the base, is provided with a nut, and constitutes a binding-post, to which is secured one of the wires of a circuit, while in a similar manner the stem 14, supporting the springs 8, also constitutes a binding-post, to which is secured the other terminal of the circuit, in which is inserted an alarm device, as a bell 15. It will thus be seen that when the blade 7 is thrown upwardly a circuit will be established and will sound the alarm.

It is designed that the device shall be located in each room of a residence, hotel, &c., and electrically connected in series with an indicating-alarm at a central point, by which means the exact location of the operating device may be determined.

I have shown in dotted lines a pull-cord 16, which may be attached to the counterweighted end of the lever and by which the device may be used as an annunciator, one or more pulls producing a like number of signals, serving to indicate various calls.

While I have secured good results from the use of paraffin, any substance that is readily fusible at a moderately-high temperature of, say, 125°, more or less, will serve from which to make the rings 10. The consistency of these may be varied, so as to fuse at variable temperatures, as desired, and I am thus enabled to adapt the alarm to use in various climates.

It will be understood that a spring may be substituted for the counterweight 6, if desired, although I prefer the weight.

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

1. An electric switching device consisting of a stationary contact member forming one terminal of an electric circuit, a pivotal support forming the other terminal of the circuit, an arm pivotally supported therein provided with a contact member, a fusible substance thereon and a weight resting on such fusible substance, and means for operating

the arm to make electrical contact upon release of such weight, substantially as set forth.

2. An electric switching device consisting of a stationary contact member forming one terminal of an electric circuit, a pivotal support forming the other terminal of the circuit, an arm pivotally supported therein provided with a contact member, and a ring constituting a support for a fusible substance, a fusible substance thereon and a weight resting on such fusible substance, and means for operating the arm to make electrical contact upon release of such weight, substantially as set forth.

3. An electric switching device consisting of a base provided with a contact member, a pivotal support therein constituting a binding-post, a pivoted arm provided with a contact member and a counterweight, with a supporting-ring, and a fusible substance therein supporting a restraining-weight flexibly attached to the base, substantially as set forth.

4. In combination with an electric switching device consisting of a base, a pivotal support therein constituting a binding-post, a secondary binding-post provided with a contact member, a pivoted arm provided with a contact member and a counterweight, with a supporting-ring, and a fusible substance therein supporting a restraining-weight, an alarm-circuit having its terminals attached to the binding-posts, substantially as set forth.

In testimony whereof I have hereunto set my hand.

GEORGE W. MACKENZIE.

Witnesses:
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