No. 733,188. PATENTED JULY 7, 1903.

H. C. GRAYBILL.

ELECTRIC LIGHTING DEVICE.

APPLICATION FILED OCT. 28, 1902.

NO MODEL.

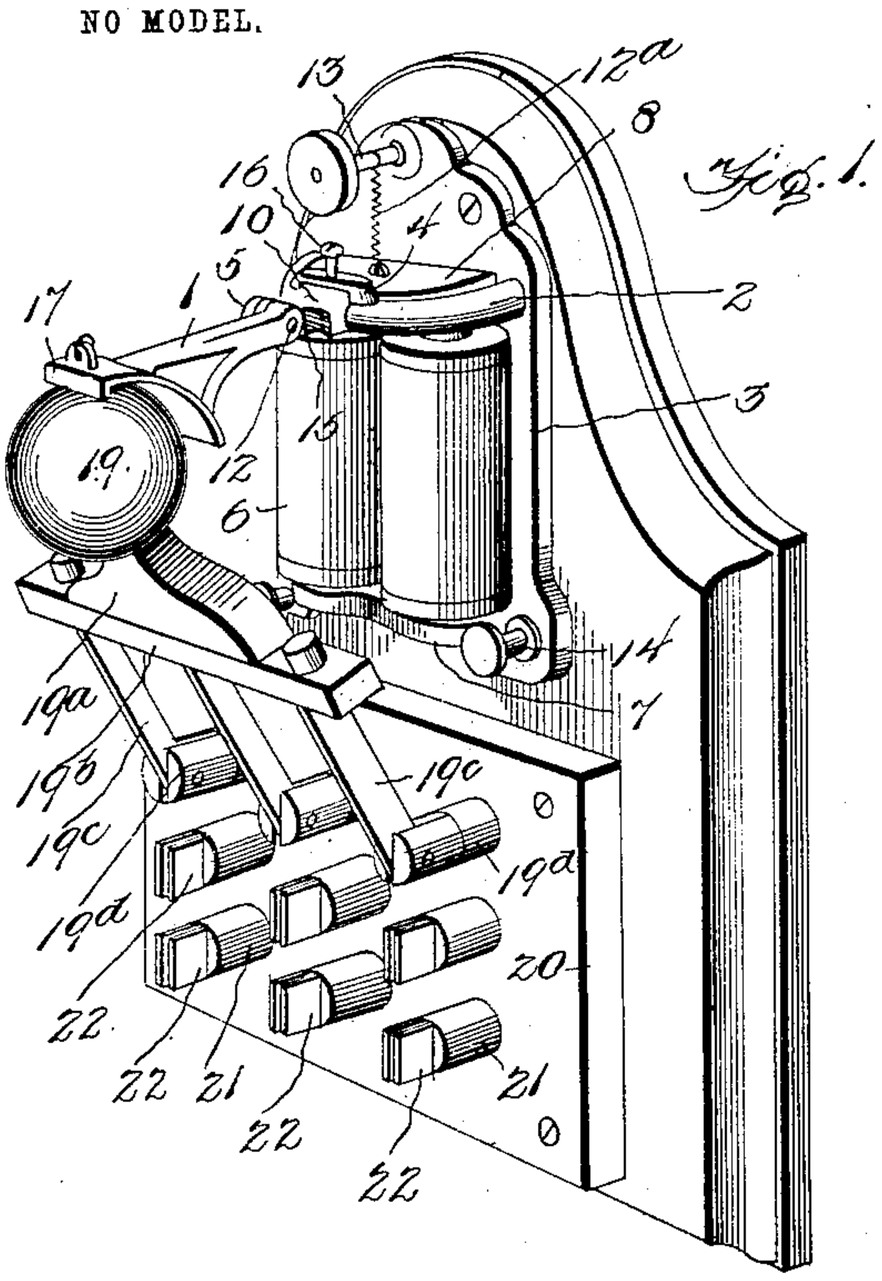

Fig. 1.

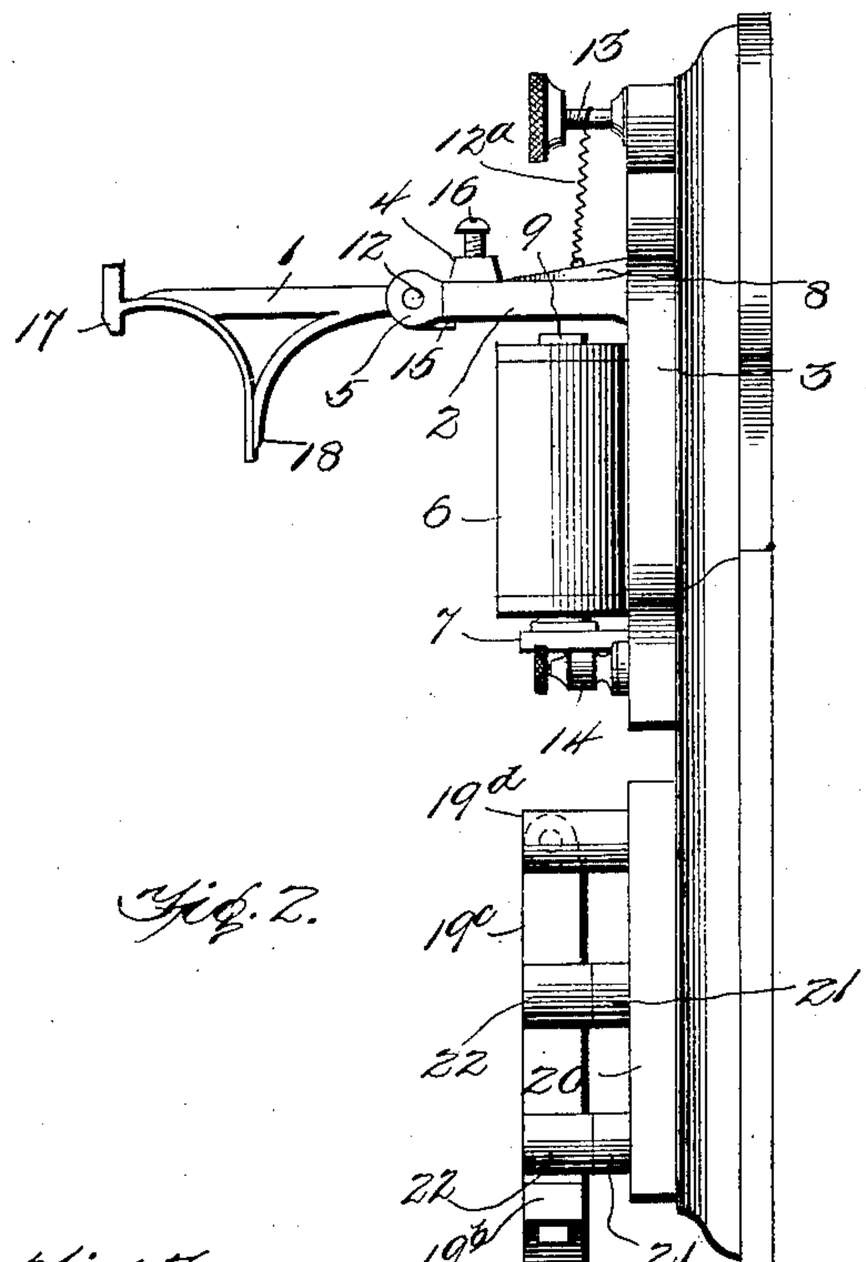

Fig. 2.

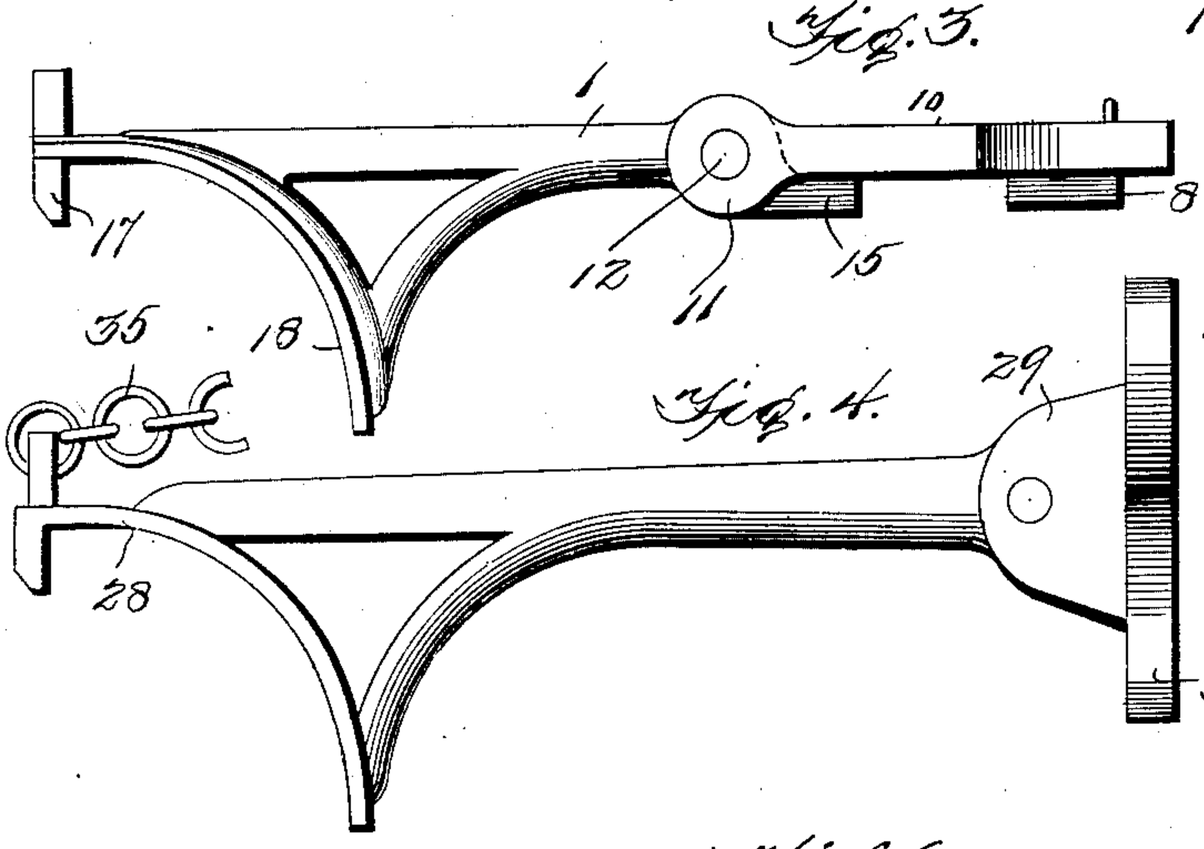

Fig. 3.

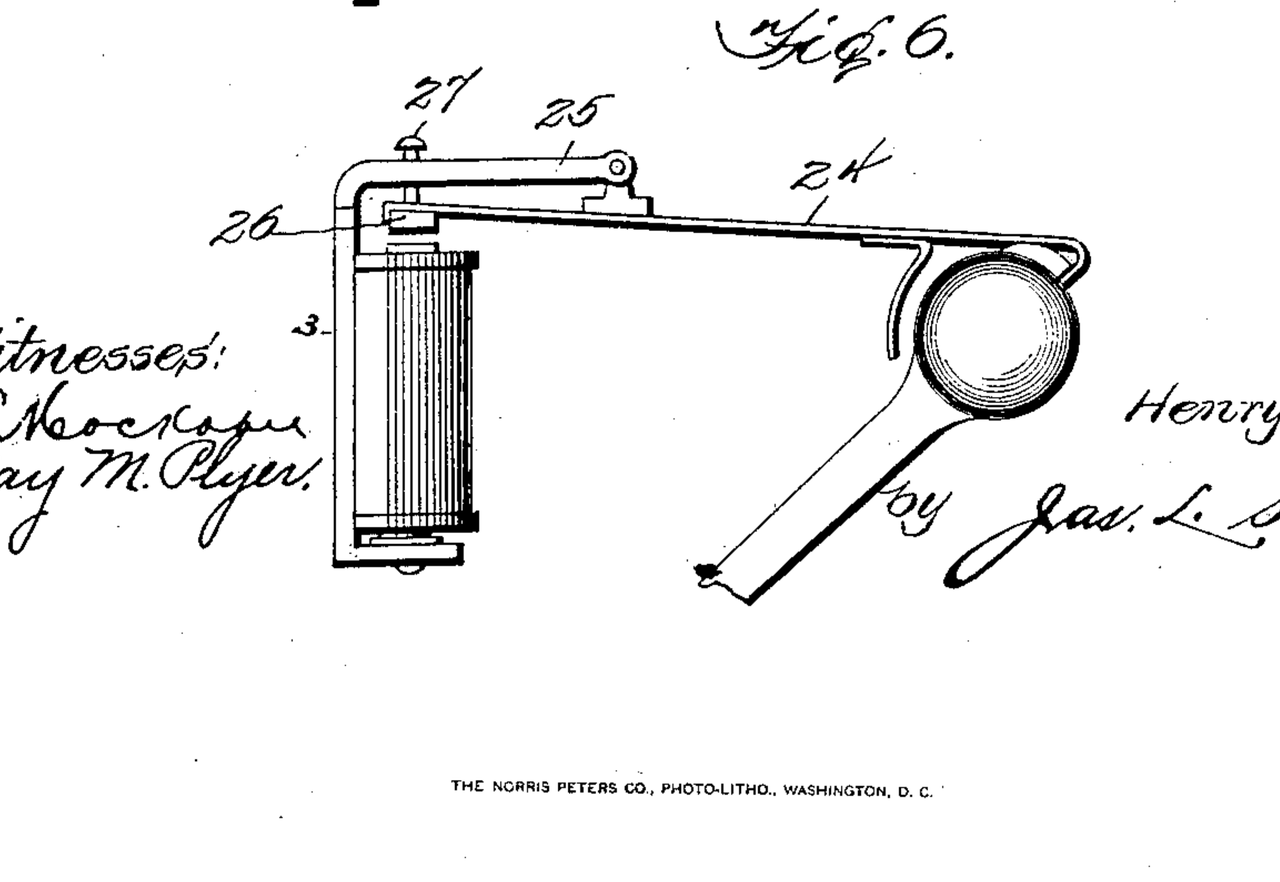

Fig. 4.

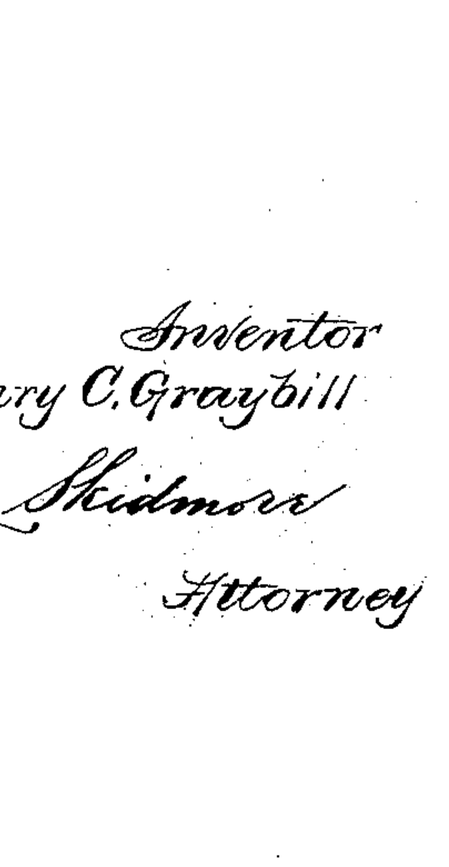

Fig. 5.

Fig. 6.

Witnesses:
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No. 733,188. Patented July 7, 1903.

UNITED STATES PATENT OFFICE.

HENRY C. GRAYBILL, OF ALTOONA, PENNSYLVANIA.

ELECTRIC-LIGHTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 733,188, dated July 7, 1903.

Application filed October 28, 1902. Serial No. 129,156. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. GRAYBILL, a citizen of the United States, residing at Altoona, in the county of Blair and State of Pennsylvania, have invented certain new and useful Improvements in Electric-Lighting Devices; 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.

This invention has for its object to provide an automatic apparatus by means of which an electric circuit may be instantly closed or broken and is especially adapted for electric-light circuits.

In carrying out the invention there are employed a tripping lever-catch, a switch-lever having a weight insulated therefrom and adapted to engage the tripping lever-catch, and contacts in an electric circuit with which the switch-lever is adapted to engage. Upon the lever-catch being tripped the weighted switch-lever is released and drops, and its contacts engaging with the contacts in the electric switch instantly closes the electric circuit.

Referring to the drawings, in which similar figures of reference indicate like parts, Figure 1 is a perspective view in elevation of an apparatus embodying my invention, showing the switch-lever held in elevated or normal position. Fig. 2 is a side elevation showing the switch-lever released. Fig. 3 is a detailed view of the tripping lever-catch and armature. Fig. 4 is a modification of the tripping lever-catch and means for securing it to a switchboard. Fig. 5 is a detail view of a portion of the device shown in Fig. 4 partly in section, and Fig. 6 is a side view of another slightly-modified form of my invention.

1 indicates the tripping lever-catch, which is preferably of the construction hereinafter set forth. The lever-catch 1 is mounted on the bracket 2, projecting from the upper part of a plate 3, adapted to be secured to a wall or other support. The bracket 2 is formed at its front with the bridge portion 4 and the short arms 5 projecting therefrom.

The lever-catch 1 is preferably tripped by electrical action by means of a pair of electromagnets 6, mounted on the shelf 7 on the plate 3 and beneath the bracket 2. Located within the bracket 2 is an armature 8, adapted to be drawn down and contact with the magnet-cores 9 when they are energized. The armature 8 is formed with the arm 10 extending beneath the bridge 4 and between the arms 5 and having the forked forward end 11, mounted on the pivot-pin 12, in the arms 5. The said armature 8 is normally held out of contact with the cores 9 by a spring 12^a connecting it with the post 13 on plate 3. The rear end of the lever-catch 1 is loosely hinged on the pin 12 within the forked end 11 of arm 10.

14 indicates binding-posts on plate 3, connecting the electromagnets 6 with an electric circuit. The rear end of lever-catch 1 is formed with a lip or catch 15, which bears against the under side of arm 10. The armature 8 may be adjusted with reference to the cores 9 by means of an adjusting-screw 16 in the bridge 4 and bearing against the arm 10. The forward end of lever-catch is suitably shaped to engage a weighted ball and, as here shown, is formed with a hook 17 and a curved portion 18, against which the ball rests.

19 is the weighted ball, which is mounted on any suitable form of switch-lever and which is formed with a plate 19^a, secured to a bar 19^b of insulating material, on which are mounted three metallic switch-arms 19^c, hinged to posts 19^d on a plate 20, having posts 21, with contacts 22, with which the switch-arms 19^c are adapted to contact to complete an electric circuit.

23 is a suitable projection on the ball 19 with which the hook 17 on lever-catch 1 engages.

This invention is especially adapted for automatically lighting fire-engine houses.

The operation of the apparatus is as follows: For example, in the case of a fire-engine house, the switch being connected with an electric-light circuit in the engine-house and the electromagnets 6 with an independent alarm electric circuit, upon an alarm being given and the cores 9 of the electromagnets energized the armature 8 will be drawn down and the lever-catch 1 released from the ball 19, which being in turn set free will drop,

bringing the switch-lever arms 19c in contact with the contacts 22, thereby closing the electric-light circuit and instantly illuminating the fire-engine house, when an alarm is given.

In the modification in Fig. 6 the catch-lever 24 is formed in one piece, hinged adjacent to its rear end to a bracket 25, projecting from the plate 3, and having an armature-plate 26 adapted to contact the cores 9. The position of armature 26 is adjusted by a screw 27 in bracket 25.

In Fig. 4 is shown a modification wherein the electromagnets 4 and armature 8 are dispensed with and a lever-catch 28 in one piece is employed hinged to ears 29 of a plate 30, adapted to be secured to a wall or other support. The rear end of lever 28 is formed with a shoulder 31, between which and plate 30 is located a spring 32, adapted to hold and return to its normal horizontal position the lever-catch 28. The lever-catch 28 is also held in its normal horizontal position by a shoulder 33, which abuts against the upper side of a recess 34 in plate 30. In this case the lever-catch may be operated by hand or other suitable means to jerk it out of engagement with the weighted switch-lever—as, for instance, by a chain 35, as shown.

Having described my invention, what I claim is—

1. An apparatus for automatically closing an electric circuit, consisting of a hinged tripping lever-catch, a hinged armature-plate with which the hinged lever-catch engages and electromagnets located in an electric circuit, in combination with a weighted switch-lever adapted to be engaged with, and released from said lever-catch, and insulated therefrom, and a contact device located in an electric circuit, and with which the switch-lever engages, when tripped to close said circuit, as herein set forth.

2. The combination with a plate, having electromagnets, and a bracket, of an armature, having a forked arm, hinged in, and abutting against said bracket, and a lever-catch, independently hinged on said bracket in said forked arm, and having a rear portion abutting against the arm of the armature, as herein set forth.

3. In a device of the character described, the combination of a suitable support, terminal posts fixed therein, alining contact-springs projecting from the terminals, contact-arms pivotally mounted on the support and arranged to engage between the spring-contacts, an insulating-bar uniting the contact-arms at their free ends, an arm extending therefrom provided with a weight on the end, said weight being formed with a catch, an overhanging arm, a latch pivotally hung to the overhanging arm and formed with a turned-down outer end to engage the catch on the weight, an armature secured to the inner end of the latch, and electromagnets to operate the armature and actuate the latch to release the weight.

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

HENRY C. GRAYBILL.

Witnesses:
EMORY BEECHER,
JOHN F. LEAR.