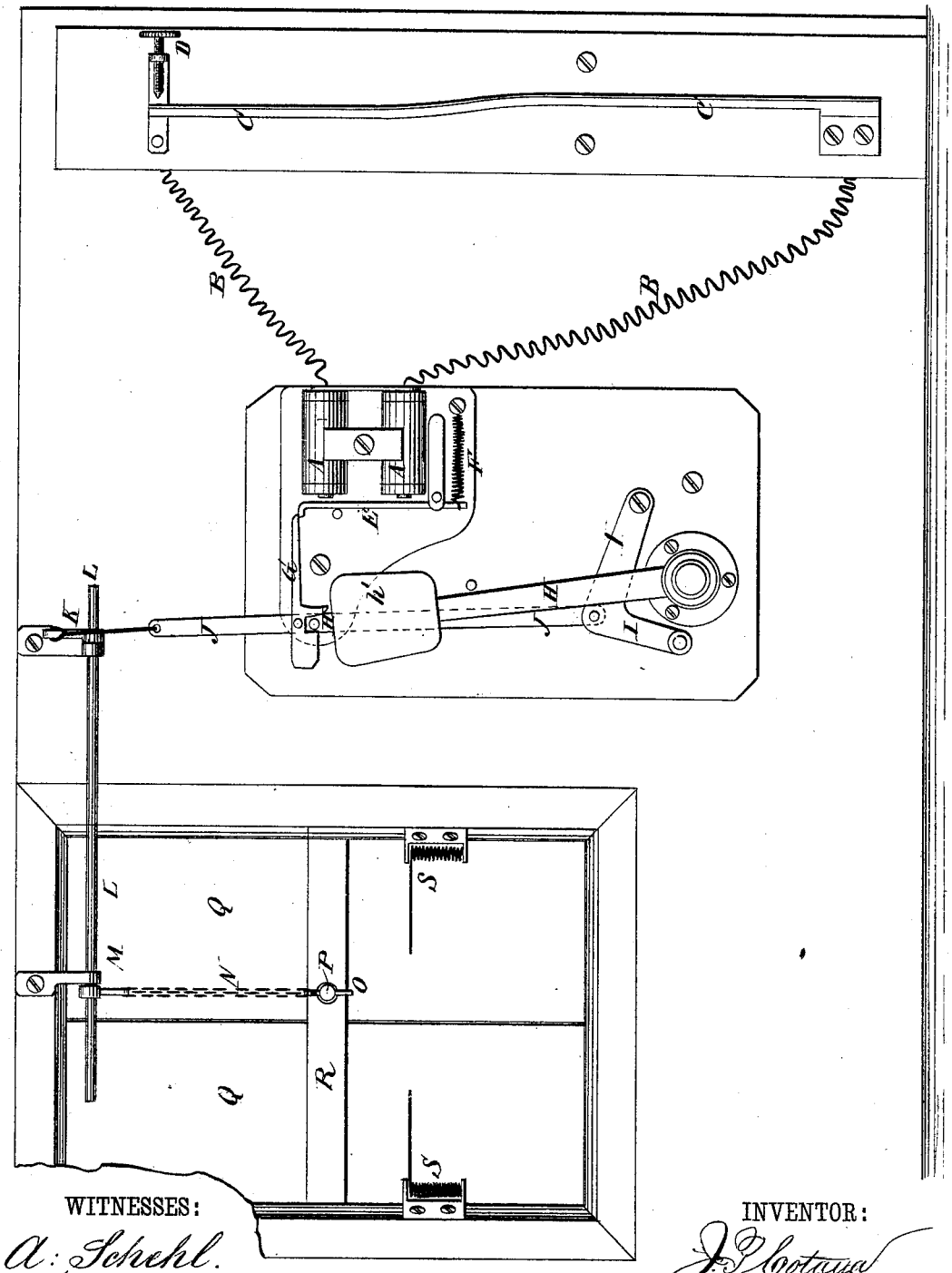
J. P. COTAYA.

Electrical Device for Opening Shutters.

No. 220,127. Patented Sept. 30, 1879.



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JOHN P. COTAYA, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN ELECTRICAL DEVICES FOR OPENING SHUTTERS.

Specification forming part of Letters Patent No. **220,127**, dated September 30, 1879; application filed March 19, 1879.

To all whom it may concern:

Be it known that I, JOHN PIERRE COTAYA, of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Improvement in Automatic Shutter-Openers, of which the following is a specification.

The figure is a view of my improved apparatus, illustrating its use.

The object of this invention is to furnish an improved device for attachment to the shutters of warehouses, store-houses, &c., to open the shutters automatically in case of fire, and thus allow the firemen to have access to the interior of the building.

The invention consists in the combination of the sensitive bar, the adjustable contact-point, the pivoted armature and its spring, the lever-catch, the weighted bar, the pivoted lever, the sliding bar, and the rock-rod, provided with the rigid arms, with the magnet and circuit-wires of a battery, and with the key that fastens the shutters, for releasing the said shutters upon an increase of temperature.

A represents a magnet, with which are connected the wires B, leading to the battery, which battery is not shown in the drawing.

One of the wires B is made in two parts, the adjacent ends of which are connected, the one with the sensitive bar C and the other with the adjustable screw-point D, so that the circuit may be closed by bringing the said bar and point into contact. The bar C is formed of a strip of brass and a strip of steel, or of any other two metals that are expanded unequally by the application of heat.

E is the armature of the magnet A, which is hinged near its lower end to some suitable support, and is held away from the said magnet A by a spring, F, connected with its lower end. The outward movement of the armature E is limited by a stop-pin attached to its support, so that the said armature can never get so far away that it will not be attracted by and drawn to the said magnet when the circuit is closed. The upper end of the armature E is bent outward to engage with the rear end of the catch-lever G, and is beveled to allow the said lever-catch when being raised to push it back and pass it.

The lever G is pivoted at a point forward of its center of gravity to the support that holds the magnet, and in its lower edge, at or near its pivoting-point, is formed a notch to receive a pin attached to the upper end of the bar H, and hold the said bar in place in a slightly-inclined position.

To the upper part of the bar H is attached a weight, *h'*, to cause it to drop with force when released from the lever-catch G. The lower end of the weighted bar H is pivoted to some suitable support.

I is an elbow-lever, which is pivoted at the end of its long arm to some suitable support, in such a position that the weighted bar H, when it falls, may strike against a small roller pivoted to the short arm of the said lever I, and force the free end of the said lever I downward.

To the lever I, at its angle, is pivoted the lower end of the vertical bar J, which slides in guides in some suitable support, and the upper end of which is connected, by a cord, chain, or other flexible or jointed connection, with an arm, K, rigidly attached to a rod, L, that works in bearings attached to the wall of the building, above the windows whose shutters are to be opened.

To the rod L, over each window, is rigidly attached an arm, M, to the outer end of which is attached the upper end of a chain, N. To the lower end of the chain N is attached a key, pin, or bolt, O, which passes through the end of the pin P. The pin P is attached to the overlapping shutter Q near its free edge, passes through a hole in the bar R, attached to the window-frame, and projects to receive the key O.

To the frame of the window are attached springs S, the free ends of which rest against the inner surfaces of the shutters Q, and which are made of sufficient strength to force the said shutters open as soon as they are released by the withdrawal of the key O.

With this construction, should a fire occur in the building, the heat will expand the sensitive bar C, and bring it in contact with the contact-point D, closing the circuit and causing the magnet A to attract the armature E. The movement of the armature E releases the catch-lever G, which releases the weighted bar H, and allows it to fall against the roller

of the lever I, and forces the free end of the said lever I downward. The movement of the lever I draws the sliding bar J downward, turns the rod L, and withdraws the keys O, allowing the springs S to force the shutters Q open, and giving access to the room.

The shutters of each story are designed to be provided with an apparatus, so that the shutters of the several stories may be opened successively, should the fire extend above or below the place of starting.

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

The combination of the sensitive bar C, the adjustable contact-point D, the pivoted armature E and its spring F, the lever-catch G, the weighted bar H *h'*, the pivoted lever I, the sliding bar J, and the rock-rod L, provided with the rigid arms K M, with the magnet A and circuit-wires B of a battery, and with the key O, that fastens the shutters Q, for releasing the said shutters upon an increase of temperature, substantially as herein shown and described.

JOHN PIERRE COTAYA.

Witnesses:
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