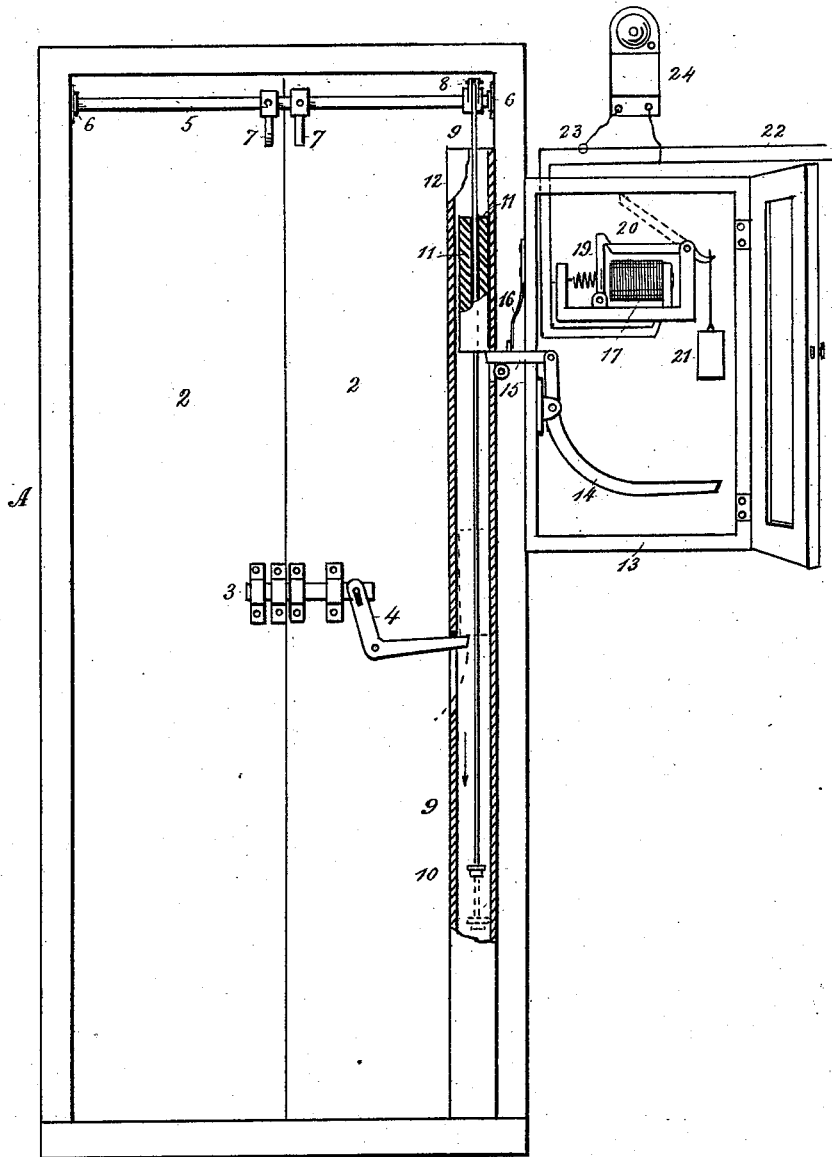


(No Model.)

C. BUEHLING.
AUTOMATIC SHUTTER OPENER.

No. 523,970.

Patented Aug. 7, 1894.



Witnesses

R. S. Millar
L. M. Adams.

Inventor

By *Chas. Burling*
O. Bailey Atty

UNITED STATES PATENT OFFICE.

CHARLES BUERLING, OF CINCINNATI, OHIO.

AUTOMATIC SHUTTER-OPENER.

SPECIFICATION forming part of Letters Patent No. 523,970, dated August 7, 1894.

Application filed November 23, 1893. Serial No. 491,763. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BUERLING, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Automatic Shutter-Openers, which improvement is fully set forth in the following specification and accompanying drawing, in which the figure is an inside view of a pair of window-shutters provided with my improved automatic opening apparatus.

My invention pertains to certain improvements in automatic devices for opening window shutters and my principal object is to improve the construction and facilitate the operation of the invention described in Patent No. 503,046, issued August 8, 1893, jointly to Alexander Grosch, Albert Allenberg and myself.

Referring to the accompanying drawing, A represents a window frame or casing of the ordinary construction. Metal shutters 2 are hinged thereto in the usual manner. When closed the shutters are locked by a sliding bolt 3 which is pivotally attached to the short arm of an angle-lever 4. A rotatable shaft 5 is journaled in bearings 6 near the upper part of the window casing. Dependent cam-levers 7 are attached near the longitudinal center of this shaft, their free ends being normally in contact with the inner sides of the shutters. One end of the shaft is provided with a crank or lever 8 the outer end of which is pivotally attached to a vertical iron rod 9 provided at its lower end with an adjustable stop 10 and having free movement through a central aperture in a weight 11 which moves in a box or casing 12. A suitable box 13 is attached to the adjacent wall and contains an angle-lever 14, the short arm of which is pivoted to a detent 15 provided with a spring 16 and extending through the casing 12 where it engages and normally upholds the weight 11. An electro magnet 17 supported by brackets 18 overhangs the angle-lever 14. The top of the armature post 19 is notched and engages a lever 20 the short arm of which is hooked and inserted in a loop or ring in a cord or chain which carries a weight 21. An electric circuit is formed by the wire 22 and connects the magnet and a battery which is located at any desirable or convenient place in the building. A thermostat 23 of any preferred

form is interposed in the circuit and adjusted in such a manner that when the temperature of the surrounding atmosphere rises to a certain degree the electric circuit will be broken. The thermostat should be attached near the ceiling of the apartment where it will be exposed to the first accumulation of heated air caused by the occurrence of a fire in the interior of the building. A gong 24 is also placed in the circuit in order to give an alarm simultaneously with the opening of the shutters.

The operation and peculiar advantages of the invention will be readily understood. In the event of a fire originating in the interior of a building, from spontaneous combustion or other causes, the heated air will ascend and when its temperature reaches the degree at which the thermostat is adjusted the electric circuit will be broken, the gong will sound the alarm, the armature of the magnet being set free will be drawn back by its spring, the lever 20 and weight 21 will be released, the detent withdrawn from beneath the weight 11 which in its descent will first trip the angle lever 4 and withdraw the sliding bolt 3. Immediately thereafter the stop 10 will arrest the weight, the cam levers will be brought into action and force the shutters open.

It will be understood that if preferred, the electric circuit may remain normally open and the apparatus be arranged to operate by the reverse movement of the armature whenever the circuit is closed by the action of heat on the thermostat.

What I claim as new is—

In an automatic device for opening window shutters and doors, the combination of an electro-magnet, a thermostat adapted to govern the action of the magnet, a rotatable shaft actuated by a crank lever 8 and provided with dependent arms or cam levers bearing upon the shutters, a dependent rod 9 pivotally attached to the said crank-lever, and the herein described angle-levers actuated by falling weights all constructed and arranged as and for the purpose herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand, this 15th day of September, 1893, in the presence of witnesses.

CHARLES BUERLING.

Witnesses:

ALBERT ALLENBERG,
J. C. ROBISON, Jr.