

UNITED STATES PATENT OFFICE.

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ELEVATOR-GATE.

SPECIFICATION forming part of Letters Patent No. 676,474, dated June 18, 1901.

Application filed December 27, 1900. Serial No. 41,240. (No model.)

To all whom it may concern:

Be it known that I, FELIX LAWARNCE SAINO, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Elevator-Gates; and I do 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 relates to improvements in elevator gates or doors, and aims to provide safety mechanism to insure the automatic closing of the gate as the car leaves the landing, together with automatic means for locking the gate in open position as long as the car remains at the landing and for releasing the gate upon the ascent or descent of the car from said landing.

The invention further aims to provide safety locking means of this character which will be automatically operated by the movement of the elevator-car.

With these and other minor ends in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is an inner-side elevational view of my improved elevator gate or door as seen from the shaft or car and showing in full and broken lines the gate in its closed and open positions. Fig. 2 is a vertical transverse section through one of the posts or jambs of the door or gate frame, illustrating the construction of the latch mechanism.

Referring now more particularly to the drawings, the letters A A' designate the side posts or jambs of the door or gate frame, provided on their inner sides with guides B, in which is mounted to slide vertically a gravity-closing gate C of any approved form and construction. As shown, the gate is nearly counterbalanced by a counterbalance-weight D, so as to be readily lifted and to descend easily and gently by its own weight, so as to avoid undue noise, jar, and concussion.

The gate carries at one side a retaining-arm E, which is adapted to engage a spring-latch F on the door-jamb A' to hold said gate

open. The jamb A' is hollow and forms an inclosing casing for the latch and latch-operating mechanism, which consists of a vertical pivoted lever H, carrying at its upper end the latch F and at its lower end a knob, projection, or contact-piece I, which normally projects exteriorly through a slot I', formed in the inner side wall of the jamb and is adapted to be engaged and retracted by the floor of an elevator-car or a suitable projection I² on the elevator-car as the latter moves up and down within its shaft. As shown, this knob or contact-piece preferably consists of a strip of resilient metal secured to the lever and bent so as to form upper and lower curved or beveled faces for the contact element on the car to ride upon; but this construction is not absolutely essential and may be departed from as desired. A coiled spring K is provided to bear upon the lower end of the pivoted lever and force the same outwardly, so as to hold the contact-piece normally projected.

The latch F swings freely in a slot F', formed in the jamb A' above the slot I' therein and consists of a strip of metal secured at its lower end to the lever H and thence bent to extend upwardly and outwardly at an oblique angle and finally inwardly or toward the lever at its upper end. This construction provides an inclined surface *f*, over which the retaining-arm E on the gate may ride, and a horizontal shelf or bracket *f'*, on which said arm is adapted to rest to hold the gate open. A coiled spring J bears upon the upper portion of the latch to normally hold the upper free end thereof projected outward from the lever to its fullest extent and to adapt said upper end of the lever to yield to allow the arm E to pass thereover to engage the shelf *f'*²; but it will be understood that by making the latch of spring metal the same result may be secured without the use of an auxiliary pressure-spring.

The operation is as follows: As the elevator-car arrives at each landing equipped with the gate, the floor or contact device thereon strikes the knob or projection I and forces the lower end of the lever H inward, whereby the latch F is projected. If the car continues on past a landing, the knob will again be projected and the spring retracted without af-

fecting the position of the gate, as will be readily understood; but when the car stops at a landing the floor or contact device will hold the projection I retracted and the latch 5 F projected as long as the car remains at a standstill. The conductor or passenger getting on or off may then raise the gate to bring the arm E into position to rest upon the shelf 10 f^2 of the latch F, and the gate will thereby be held open until the car starts and releases the projection I. The latch is then retracted, releasing the arm E, and the gate gently comes to a closed position by gravity. By 15 this construction and mode of operation of the parts the automatic closing of the gate is insured, accidental opening of the gate prevented, and the partial closing of the gate on a passenger entering the car obviated in a simple and effective manner. Thus by the 20 use of my invention many accidents due to the premature opening and closing of the gate as the car approaches and leaves a landing and to leaving the door open will be avoided.

25 Changes in the form, proportion, and minor details of construction other than those indicated may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages 30 thereof.

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

35 1. In an elevator-gate, the combination of a vertically-sliding, gravity-closing gate, and latch mechanism on the gate-frame compris-

ing an intermediately-pivoted lever provided at its upper end with a latch to engage and hold the gate open and at its lower end with a contact device adapted to be operated by 40 the elevator-car or a projection thereon to project the latch, said contact device consisting of a resilient metallic strip bent to form upper and lower beveled contact-faces, substantially as set forth. 45

2. In an elevator-gate, the combination of a vertically-sliding, gravity-closing gate, an intermediately-pivoted latch-lever, a contact device on one end of the lever and adapted to be tripped by the elevator-car, and a latch 50 on the other end of the lever to engage and hold the gate open, said latch consisting of a spring-actuated strip fixed at one end and free at the other end and bent to form an inclined contact-face and a horizontal support- 55 ing-shelf, substantially as set forth.

3. In an elevator-gate, the combination of a vertically-sliding, gravity-closing gate, an intermediately-pivoted latch-lever, a resilient contact device upon the lower end of said 60 lever, a spring acting upon the said lower end of the lever to project said latch, a yieldable latch upon the upper end of the lever, and a spring for retaining said latch in normal position, substantially as set forth. 65

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FELIX LAWARNCE SAINO.

Witnesses:

J. EDGERLEY,
F. E. MILLER.