

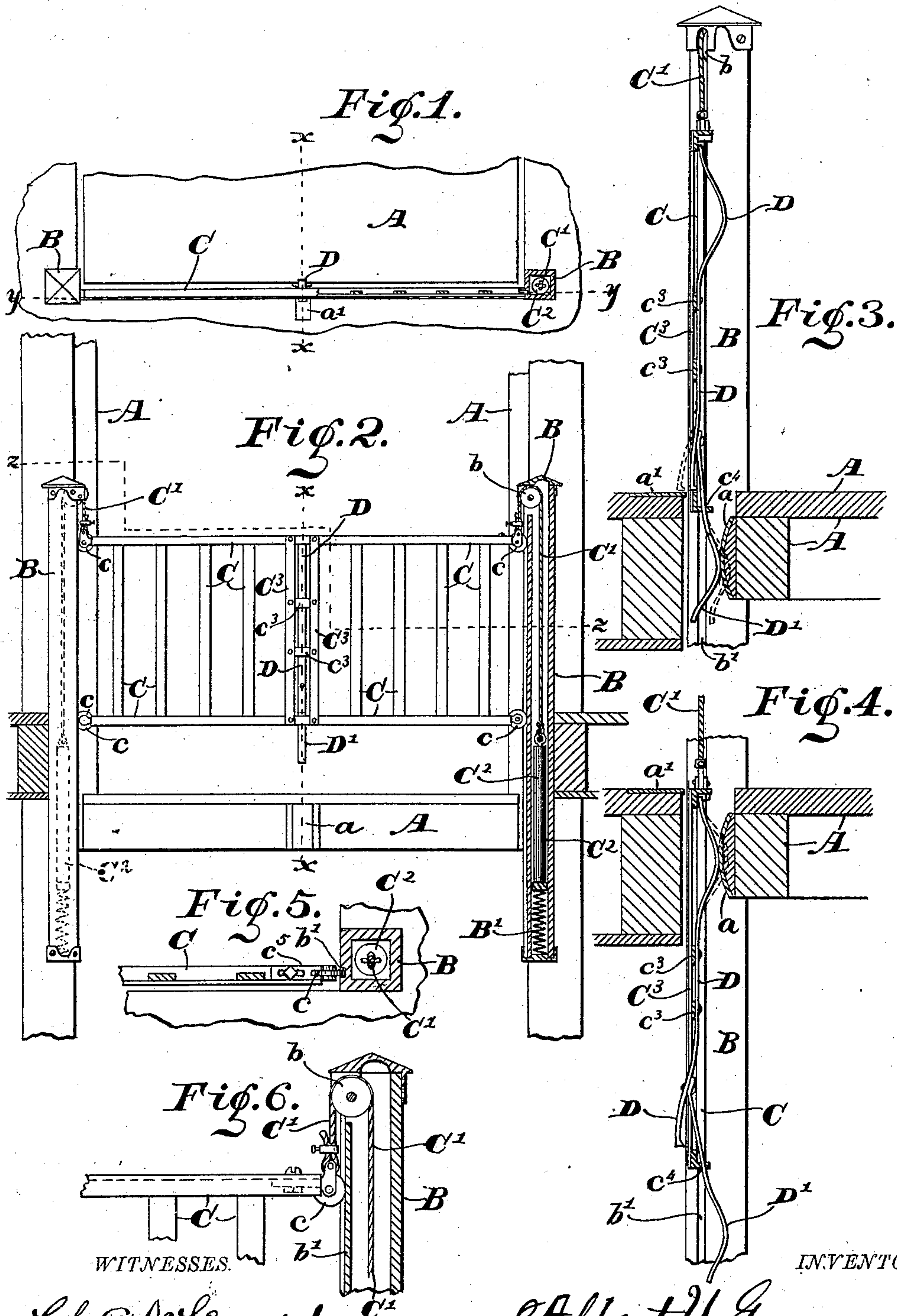
(No Model.)

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ELEVATOR GATE.

No. 311,120.

Patented Jan. 20, 1885.



WITNESSES.
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ELEVATOR-GATE.

SPECIFICATION forming part of Letters Patent No. 311,120, dated January 20, 1885.

Application filed October 4, 1884. (No model.)

To all whom it may concern:

Be it known that I, ALBERT U. GRUMMANN, of the city of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Elevator-Gates, of which the following is a specification.

The object of my said invention is to produce a convenient, efficient, and inexpensive elevator-gate, as will be hereinafter more fully described.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a top or plan view of the front portion of an elevator provided with my gate, as seen when looking downwardly from the dotted line $z z$ in Fig. 2; Fig. 2, a front elevation of the gate, one of the posts being shown in sections, as seen when looking upwardly from the dotted line $y y$ in Fig. 1; Fig. 3, a vertical section, looking to the right from the dotted lines $x x$ in Figs. 1 and 2, the gate being shown in the position it occupies when closed, although having the catch disengaged by the elevator, and thus ready to be opened; Fig. 4, a similar view, the gate being shown in an open position; Fig. 5, a detail cross-section of the post and a portion of the gate on an enlarged scale, (similar to a portion of Fig. 1;) and Fig. 6, a detail vertical section of the same, (similar to a portion of Fig. 2.)

In said drawings, the portions marked A represent the elevator, B the gate-posts, C the gate, and D a spring-catch for holding said gate in position.

The elevator A and its surrounding parts are of any ordinary or approved construction, and are mounted and operated correspondingly. On its front edge it is provided with a strike, a , which engages with and operates the spring-catch D as the elevator passes up and down, as will be presently more fully described.

The gate-posts B are stationed at each front corner of the hatchway, as shown, and extend above and below the floor a sufficient distance to allow the gate to freely operate between them. They are preferably hollow, and have sheaves b mounted in an opening at the top in the sides which face each other. These sides are also provided with longitudinal grooves

b' , which serve as guides or tracks for the gate. In their lower ends they are preferably provided with spring-cushions B' , with which the weights of the gate come in contact when it is raised to the proper height.

The gate C is shown as constructed of a top and bottom angle-iron rail connected by slats or paling, which is a very good construction for the purpose, on account of its cheapness, lightness, and strength; but of course any other suitable construction could be employed, if desired. It is mounted between the posts B, the rollers c , which are preferably provided on the ends of the rail, being placed in the grooves b' , which form a track or guide in which they travel. Cords or chains C' are attached to each end of the top rail, and pass up over the sheaves b into the hollow post, and have weights C^2 attached thereto, as shown. Said weights are of about the same weight as the gate, but are preferably a little the heaviest, so that when said gate is free from the catches they will operate to close the gate, if open, and support it in a closed position until forcibly opened. The rollers c on the rails are preferably mounted in adjustable irons c^5 , which permit said rollers to be adjusted in and out from the post, and thus insure a perfect fit of the gate.

The spring-catch D is mounted near the middle of the gate transversely thereof. It is secured to the gate at its middle portion, both ends remaining free. In the construction of gate shown two bars, C^3 , are secured to the rails of the gate—one on each side of said spring—and cross-pieces c^3 are secured to these a short distance apart, near their middle, and to these cross-pieces the spring is riveted or bolted, as shown.

In other constructions of gate any suitable means for securing the spring to the gate at its middle might be employed, this being the only object of the bars and cross-pieces. The upper end of the spring extends up to the top of the gate on the side next the elevator, and is bulged out, as shown, so as to come in contact with the strike a , as will be presently described. Its lower end extends down to the bottom of the gate, and is bent so as to project on the other side of the gate, and thus engage with a catch, a' , set in or formed by the top edge of the floor, and hold

the gate in a closed position, as shown most plainly by dotted lines in Fig. 3. A lever, D', is connected to said spring-catch near its lower end, and extends down through a hole, c⁴, in the angle-iron which forms the lower rail, and has its lower end bulged out in the same manner and for a similar purpose as the top part of the spring before described.

The operation of my invention is as follows:

10 The gate being in a closed position, as shown in Fig. 2, the top part of the spring-catch is in the position shown in Fig. 3, and the lower end is in the position shown by dotted lines in the same figure—that is, extending out
15 above the top edge of the floor, and thus preventing the gate from being moved downward. When the elevator comes up level with the floor, the strike *a* comes against the bulged-out portion of the lever D', and presses it out
20 toward the floor and through said lever, which has a fulcrum in the lower rail of the gate, and draws the lower end of the spring D inwardly out of engagement with the floor, when the gate can be easily pushed down out of the
25 way. When the gate is down, the bulged-out part at the upper end of the spring D bears against the strike *a* on the elevator, (see Fig. 4,) and holds the gate down by this frictional contact. When the elevator moves,
30 the gate is freed from this contact, and is immediately raised by the weights to a closed position, when the lower end of the spring-catch engages with the floor again and holds the gate in this position, the cushions B' operating, as is well understood, to prevent any
35 violent stop as the gate reaches the limit of its upward movement.

Having thus fully described my said invention, what I claim as new, and desire to secure
40 by Letters Patent, is—

1. The combination, with a vertically-movable elevator-gate, of a spring-catch secured transversely thereof, the lower end of which is bent out to engage with the floor when the
45 gate is closed, and the top end of which is bent in to engage with the front edge of the elevator when the gate is open, whereby it is adapted to hold said gate in both its open and closed positions, substantially as set forth.

50 2. The combination, with a vertically-movable elevator-gate, of a spring-catch secured thereto, its upper end being bulged out to engage with a strike on the edge of the elevator, and its lower end being bent out on the other
55 side of the gate to engage with the floor, and a lever secured to said spring near its lower end and extending down through a hole in the lower rail of the gate, the lower end of which is also bulged out to engage with the strike

on the edge of the elevator, whereby the elevator automatically operates to disengage said spring-catch from the floor, substantially as set forth.

3. The combination of the elevator A, hollow gate-posts B, gate C, mounted between said
65 gate-posts, cords C', attached to said gate and running over sheaves *b* into the hollow posts, weights C², attached to the ends of said cords in said hollow posts, the spring-catch D for holding said gate in position, and the lever
70 D', secured to said spring-catch at one end and extending out at the other end to engage with a strike on the edge of the elevator, substantially as described, and for the purposes specified.

4. The combination, with an elevator-gate provided with adjustable rollers on its ends, of the posts B, having grooves *b'* formed in the sides facing each other, said rollers of the gate being arranged to travel in said grooves
80 of the posts, the cords C', secured at one end to the gate and passing up over the sheaves *b*, and the weights C², attached to the other end of said cords, substantially as set forth.

5. The combination of the elevator A, provided with a strike, *a*, on its front edge, hollow gate-posts B, having cushions B', gate C, mounted between said gate-posts, cords C', attached to said gate at one end and passing up over the sheaves *b* into the posts, weights C²,
85 attached to said cords, the spring-catch D, the upper end of which is bulged out to engage with the elevator, and the lower end of which is bent out on the other side of the gate to engage with the top edge of the floor, and a lever
90 D', attached to said spring at one end, said lever extending down through a hole in the bottom rail of the gate, and being also bulged out to engage with the elevator, substantially as described, and for the purposes
100 specified.

6. The combination of an elevator, a vertically-movable elevator-gate, a spring-catch secured transversely thereof, the lower end of which is bent out to engage with the floor
105 when the gate is closed, and a lever fulcrumed in said gate and secured to said spring, with which said elevator will come in contact as it passes up and down, and thereby disengage said lower end from the floor, substantially as
110 set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 4th day of December, A. D. 1884.

ALBERT U. GRUMMANN. [L. S.]

In presence of—

E. W. BRADFORD,
CHAS. L. THURBER.