

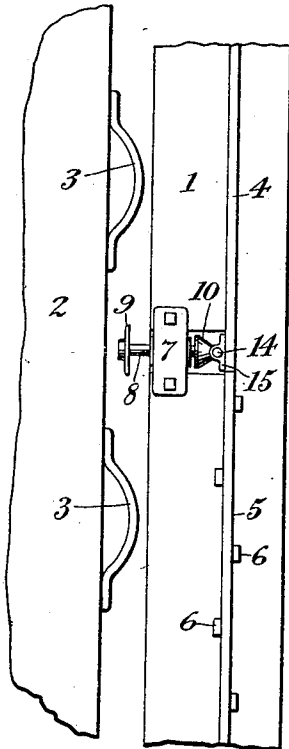
A. RUNKEL.  
 AUTOMATIC CLOSING DEVICE FOR ELEVATOR WELL GATES.  
 APPLICATION FILED JAN. 28, 1910.

968,197.

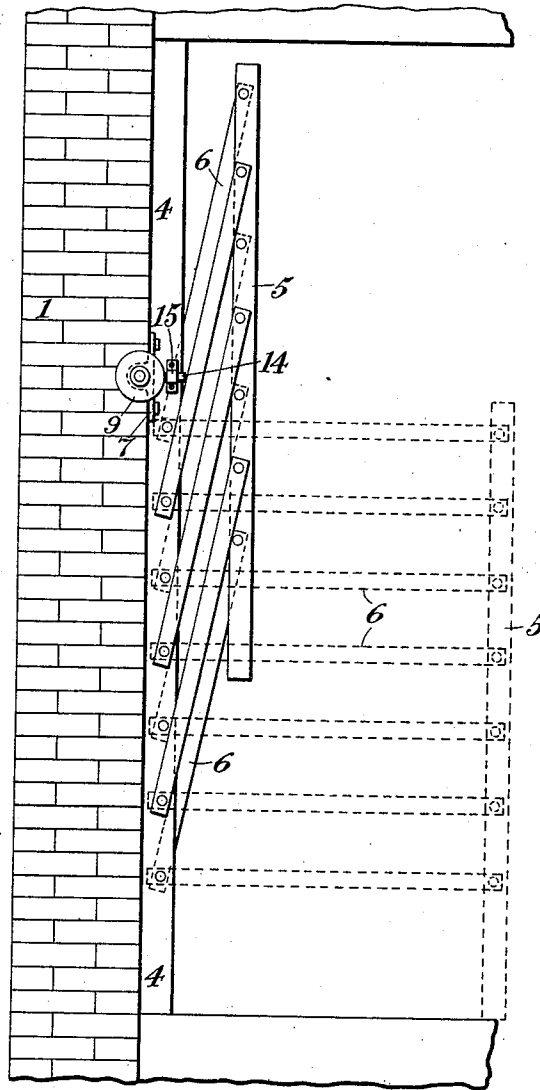
Patented Aug. 23, 1910.

2 SHEETS—SHEET 1.

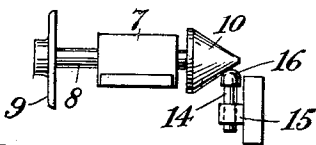
*Fig. 1*



*Fig. 2*



*Fig. 3*



Witnesses:

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 Gertrude K. Brennan

Inventor:

by Albert Runkel.  
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Fig. 4

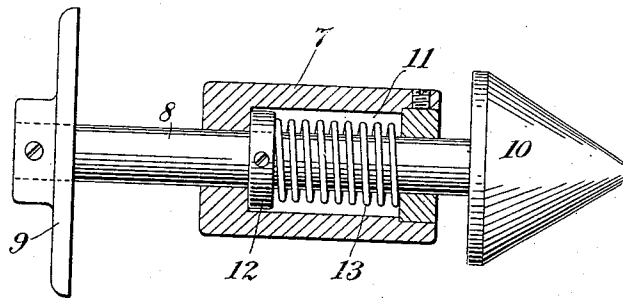


Fig. 5

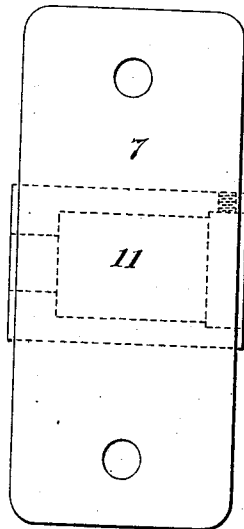


Fig. 6

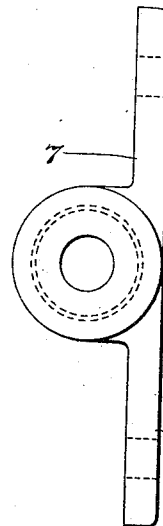


Fig. 7

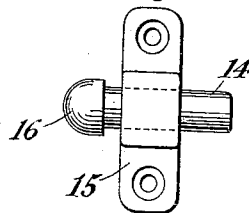
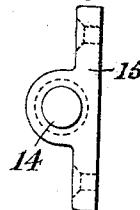


Fig. 8



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# UNITED STATES PATENT OFFICE.

ALBERT RUNKEL, OF NEW YORK, N. Y.

AUTOMATIC CLOSING DEVICE FOR ELEVATOR-WELL GATES.

968,197.

Specification of Letters Patent.

Patented Aug. 23, 1910.

Application filed January 28, 1910. Serial No. 540,682.

To all whom it may concern:

Be it known that I, ALBERT RUNKEL, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Automatic Closing Devices for Elevator-Well Gates, of which the following is a full, clear, and exact specification.

My invention relates particularly to improvements in automatic closing devices for elevator well gates of a vertical hinged type.

The principal object of my invention is to provide a simple and inexpensive device for automatically closing the well gates as the elevator passes the various floors.

I attain the object specified as well as others, which I have not herein enumerated, by means of the device shown in the accompanying drawings in which similar reference characters refer to similar parts throughout the several views.

Figure 1 is a view in elevation of an elevator well showing a portion of the car and my automatic device in relation thereto. Fig. 2 is a view in elevation from the interior of the well, showing the closing device and gate. Fig. 3 is a plan view of my device. Fig. 4 is a detailed view, partly in section, of the driving member of my device. Fig. 5 is a plan view of the frame or casing shown in Fig. 4. Fig. 6 is an end view of the same. Fig. 7 is a plan view in detail showing the driven member. Fig. 8 is an end view of Fig. 7.

In said drawings reference character (1) indicates the walls of the elevator well.

(2) indicates an upright part of the elevator car, to which is suitably fastened a pair of cams (3).

The gate consists of a jamb or frame member (4) and an upright member (5) connected by a series of pivoted cross bars (6). I prefer to fasten the alternate cross bars on opposite sides of the upright members, as is shown in Figs. 1 and 2. This form of gate is opened by swinging it vertically against the jamb.

My automatic closing device comprises a driving member (Figs. 4, 5 and 6), and a driven member (Figs. 7 and 8), arranged to cooperate as shown in Fig. 3.

The driving member consists of a suitable frame or casing (7) fastened to the side wall of the well, bearing a horizontally movable shaft (8), provided with a disk-

shaped foot piece (9) and a cone-shaped head piece (10). Within the frame is formed a recess or chamber (11), in which is located a collar (12) suitably fixed to the shaft and normally held in the position shown in Fig. 4 by means of a spring (13) coiled around the shaft, acting in opposite directions against the end piece of the chamber and the collar respectively.

The driven member comprises a pin (14) loosely supported in a horizontal position in the block (15) which is fastened to the jamb (4) of the gate, and is located thereon in angular relation to the shaft (8) so that when the gate is in its opened position the head (16) of the pin will rest against the surface of the cone-shaped piece (10) near its apex, and the foot thereof will abut against one of the cross bars (6) of the gate.

The manner in which my invention operates is as follows: As the car comes to rest opposite the floor, the gate is manually opened by swinging it vertically against the jamb in which position it will hold itself until closed. When the car is in this position, the foot piece of the shaft (8) will be located between the two cams (3). As, however, the car is raised or lowered, one of the cams will engage this foot-piece driving the shaft forward and causing the cone-shaped head to project the pin endwise against the cross bar of the gate, thus throwing the gate off its center of gravity and causing it to fall of its own weight. The spring will return the shaft to its normal position and it will be seen that when the gate is subsequently again opened, the pin (14) will be thrown back into its operative position against the cone-shaped head piece, thus setting the device for further action.

It is obvious that the construction and arrangement of the various parts may be modified from those illustrated in the accompanying drawing without departing from the spirit of my invention.

What I claim as my invention and desire to secure by Letters Patent is:

1. A closing device for elevator well gates comprising in combination, a driving member and a driven member disposed at an angle to each other, each longitudinally movable; the driving member having an inclined element upon which the driven member loosely rests, said latter member adapted to be projected endwise by a forward movement of the inclined element of the driving member;

and resilient means for returning the driving member to its normal position.

2. In a closing device for elevator well gates the combination, with an elevator car bearing a cam, of a longitudinally movable driving member adapted to engage and to be thrust forward by the cam as it approaches said member, said driving member having an inclined element; and a driven member loosely resting on the inclined element of the driving member, adapted to be projected endwise by a forward movement of said inclined element of the driving member.

3. In a closing device for elevator well gates, the combination, with an elevator car bearing a cam, of a vertically swinging pivoted well gate; a longitudinally movable driving member adapted to engage and to be thrust forward by the cam as it approaches said member, said driving member having an inclined element; and a driven member loosely resting on the inclined element of the driving member, adapted to be projected endwise against the gate, when in its opened position, by a forward movement of said inclined element of the driving member.

4. In a closing device for elevator well gates, the combination, with an elevator car bearing a cam, of a vertically swinging pivoted well gate; a longitudinally movable driving member adapted to engage and to be thrust forward by the cam as it approaches said member, said driving member having an inclined element; a driven member loosely resting on the inclined element of

the driving member, adapted to be projected endwise against the gate, when in its opened position, by a forward movement of said inclined element of the driving member; and resilient means for returning the driving member to its normal position as the cam departs from said member.

5. A closing device for elevator well gates comprising a casing; a longitudinally movable shaft mounted in and extending beyond said casing; a rearwardly inclined element carried on said shaft; a support; and a longitudinally movable member mounted on said support and normally resting on the inclined element of the shaft, said member adapted to be projected by a forward movement of the inclined element.

6. A closing device for elevator well gates comprising a casing; a chamber formed in said casing; a longitudinally movable shaft mounted in and extending beyond said casing; a rearwardly inclined element carried on said shaft; a collar fixed relative to the shaft and movable in said chamber; a spring acting upon the collar and the opposite end of the chamber; a support; and a longitudinally movable member mounted in said support and normally resting on the inclined element of the shaft, said member adapted to be projected by a forward movement of said inclined element.

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Witnesses:

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