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PATENTED JULY 31, 1906.

W. D. KEHL.

SAFETY GATE MECHANISM FOR ELEVATORS.

APPLICATION FILED JAN. 15, 1906.

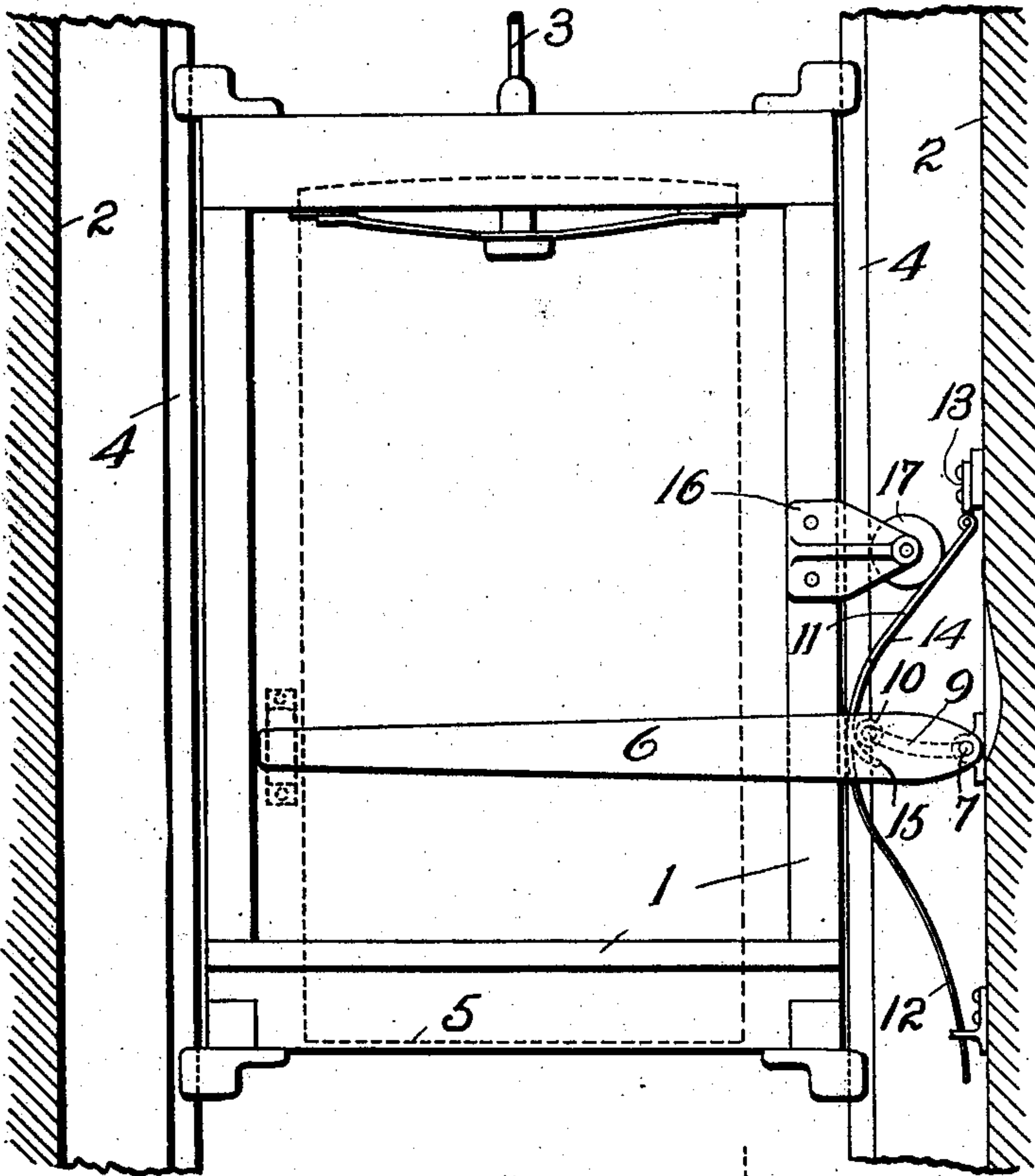


FIG. 1.

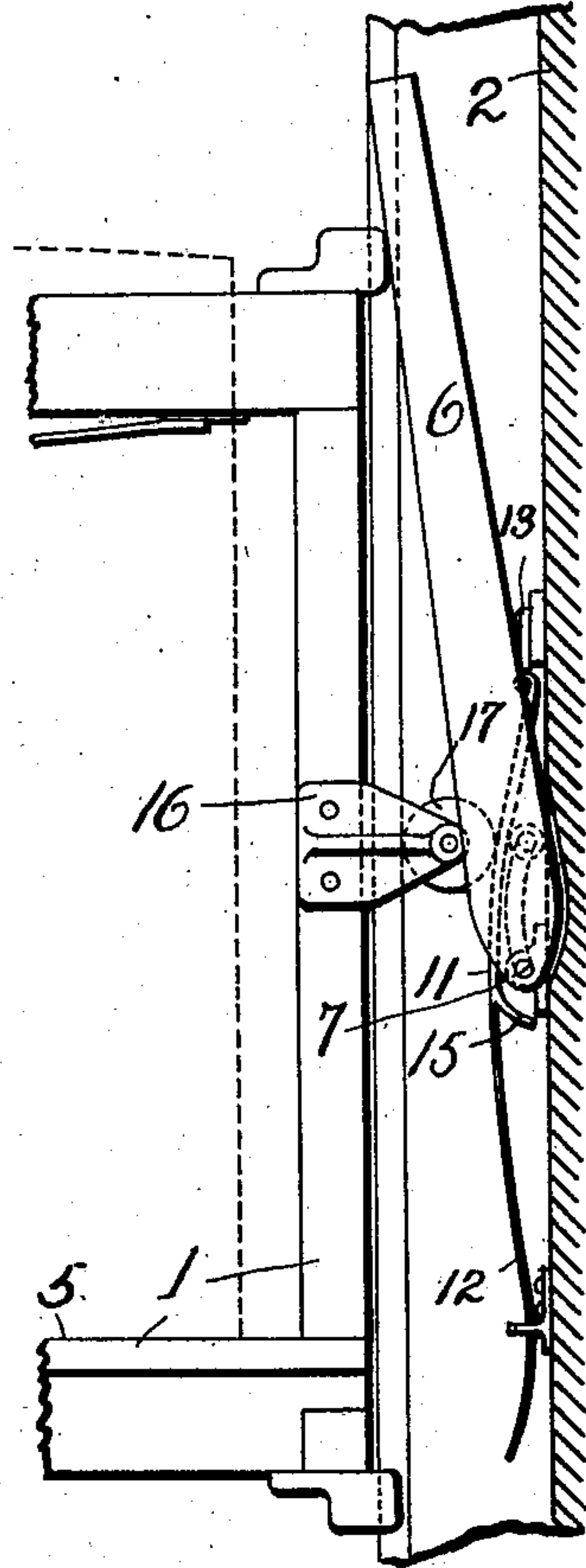
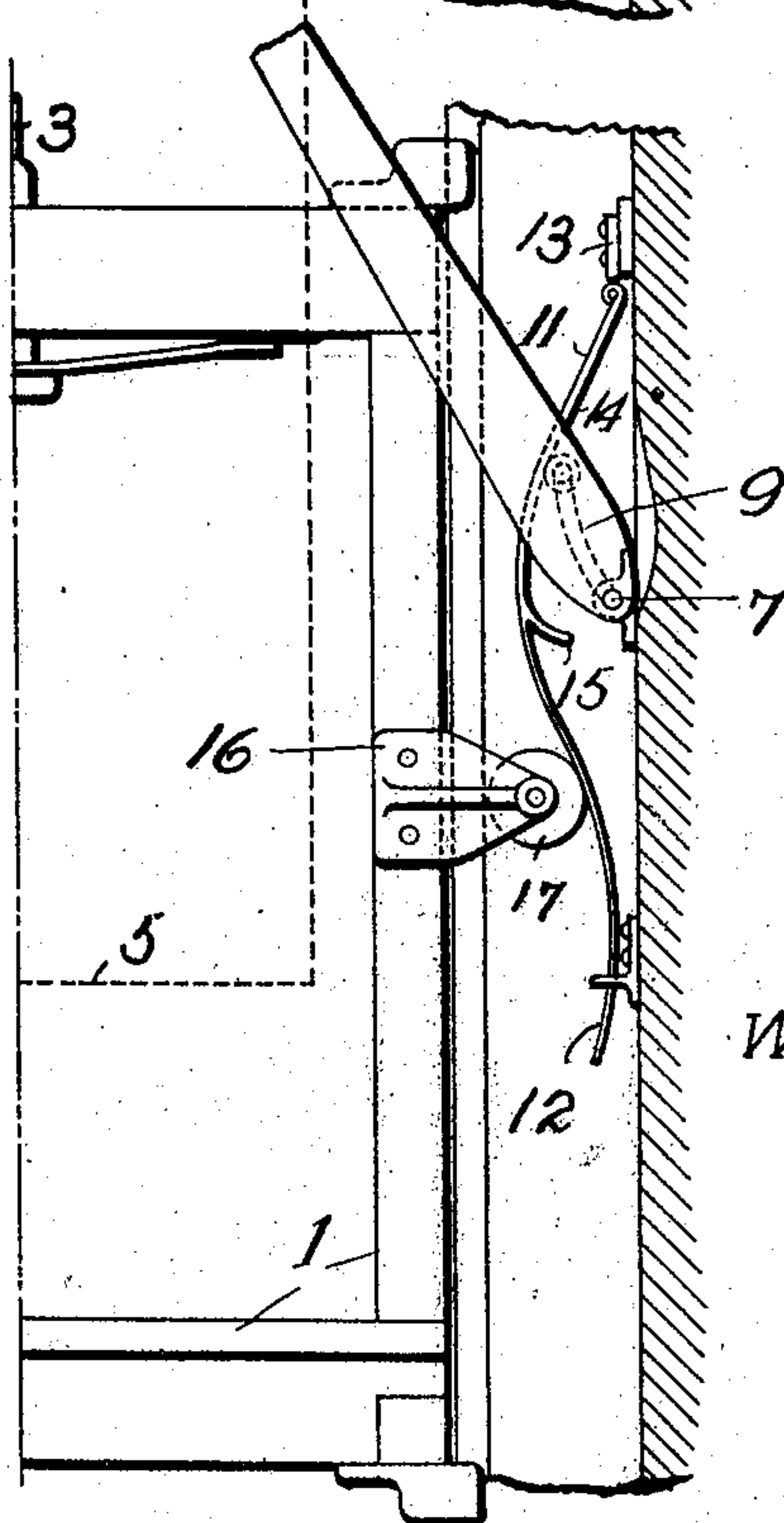


FIG. 2.

FIG. 3.



WITNESSES:

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SAFETY-GATE MECHANISM FOR ELEVATORS.

No. 827,374.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM D. KEHL, a citizen of the United States, and a resident of the city of Reading, county of Berks, and State of Pennsylvania, have invented certain new and useful Improvements in Safety-Gate Mechanism for Elevators, of which the following is a specification.

My invention relates to mechanism for automatically operating safety-gates for elevators; and it consists in an improved device mounted in the path of the car and arranged to properly move a cooperating gate-arm to successively open and close the gate at each passing of the car, as fully described in connection with the accompanying drawings and specifically pointed out in the subjoined claims.

Figure 1 is a partly-sectional elevation indicating an elevator mechanism, showing my invention applied thereto with the gate-bar in closed position. Figs. 2 and 3 are partial views showing the car and gate-bar in different positions from those indicated in Fig. 1.

As shown in the drawings, 1 is the car, suspended in the shaft 2 by the hoisting-cable 3 and guided in said shaft by the vertical tracks 4. The dotted line 5 indicates a landing-floor, and 6 is a safety bar or gate adapted to be swung across the opening at said landing-floor. This gate-bar 6, as shown, is fixed at one end to a suitably-mounted rock-shaft 7, having an operating-arm 9, preferably provided at its free end with a friction-roller 10.

Upon the shaft-frame above the gate-operating arm is fixed a spring-lever 11, which is curved around said operating-arm in the plane of movement thereof and is preferably loosely guided at its lower end 12. This curved spring-lever may be secured to the shaft-wall in any desired manner, but in the construction shown is pivoted at one end to a block 13 on the shaft-wall. The inner surface 14 of this curved spring-lever forms an operating incline for the arm 9 when depressed by means hereinafter described, and I add the curved starting extension 15, as shown, to said incline. The lower portion 12 of the spring-lever 11 may be made of lighter weight and is curved toward the shaft-wall and passed through a guide. The outer surface of this spring-lever 11 forms reverse inclines, upon which a contact device 16 on the car rides when passing this point in the shaft. This contact device 16 is fixed to the

frame-post of the car 1 in the path of the curved spring-lever 11 and is usually provided with a roller 17, adapted to ride upon the curved outer surface thereof. The passage up and down the shaft 2 of the car 1 carries this contact device 16 into engagement with the spring-lever 11 and depresses the same to raise or lower the gate automatically upon the approach or departure of the car from the landing-floor. The flattening out of the spring-lever, as shown, by the passage thereof, either downward or upward, of the contact device 16 upon the reverse curves of the lever 11 causes the gate-operating arm to ride up the inner incline of said spring-lever, and thereby first raise the gate out of the way of the door-opening at a landing-floor, and upon the further movement of the car and its contact device to thereafter lower the gate again across said door-opening.

It is understood, of course, that each landing may be provided with my improved safety-bar, the one contact device operating every gate in succession, first raising it on the approach of the car to that particular floor and thereafter lowering it upon the departure of the car to another floor.

The particular construction shown may obviously be varied without departing from the spirit of my invention.

What I claim is—

1. In a safety-gate mechanism for elevators, a gate-operating arm pivotally mounted on the shaft-frame adjacent to a landing, a curved spring-lever also mounted upon said shaft-frame in the plane of said pivoted arm, and having an inclined inner surface upon which the free end of said pivoted arm operatively rides, and a contact device carried by the car and adapted to press upon the outer surface of said spring-lever in passing and to thereby operate said gate-arm substantially as set forth.

2. In a safety-gate mechanism for elevators, a gate-operating arm pivotally mounted on the shaft-frame adjacent to a landing, a curved spring-lever also mounted upon said shaft-frame in the plane of said pivoted arm, and having its inner surface adapted to form an operating incline having a starting extension for the free end of the same, and a contact device carried by the car and adapted to press upon the outer surface of said spring-lever in passing and thereby operate said gate-arm substantially as set forth.

3. In a safety-gate mechanism for elevators, a gate-operating arm pivotally mounted on the shaft-frame adjacent to a landing, a curved spring-lever also mounted upon said
5 shaft in the plane of said pivoted arm, having an inclined inner surface forming a track upon which the free end of said pivoted arm rides, and oppositely inclined above and below the pivotal mounting of said arm, and a
10 contact-piece carried by the car and adapted to successively press upon the oppositely-

inclined outer surfaces of said spring-lever in passing either up or down and thereby reversely operate said gate-arm substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

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WILLIAM D. KEHL.

Witnesses:

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W. G. STEWART.