

(No Model.)

2 Sheets—Sheet 1.

C. R. PRATT.
ELEVATOR SAFETY DEVICE.

No. 580,894.

Patented Apr. 20, 1897.

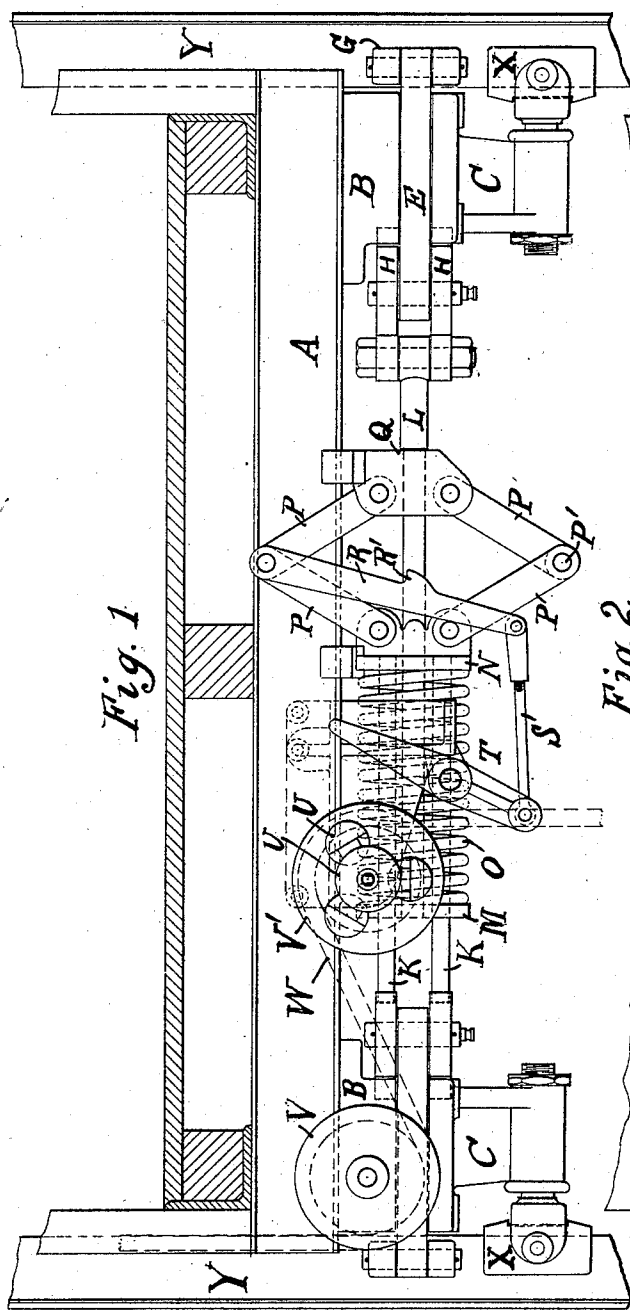


Fig. 1

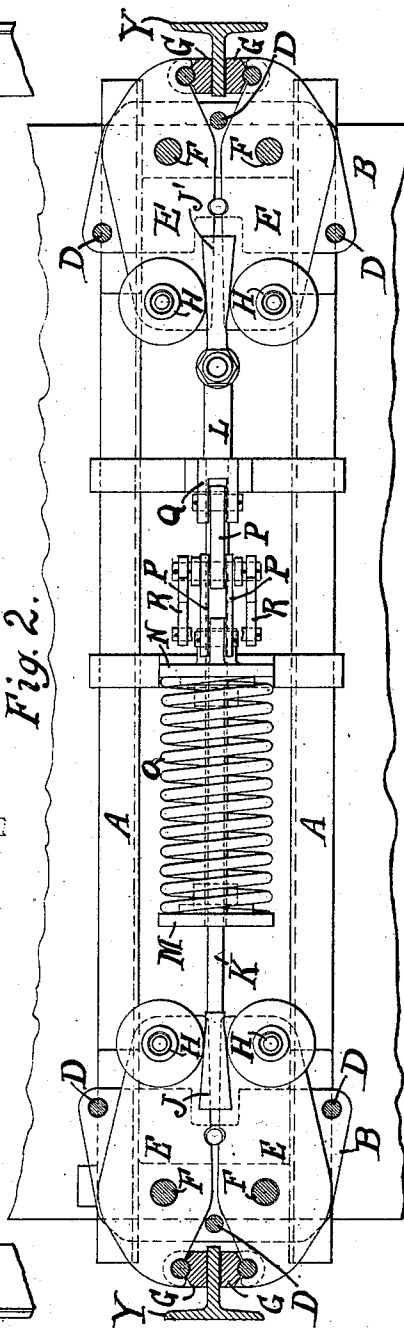


Fig. 2.

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Inventor,

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by *Thomas Ewing Jr.,*
Attorney.

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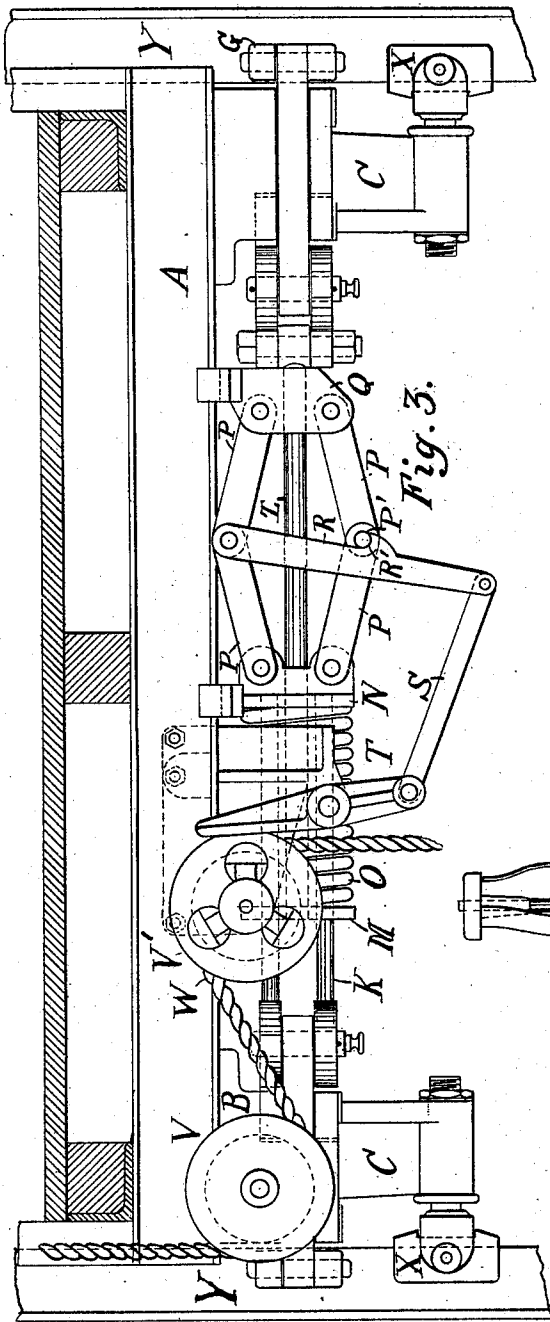
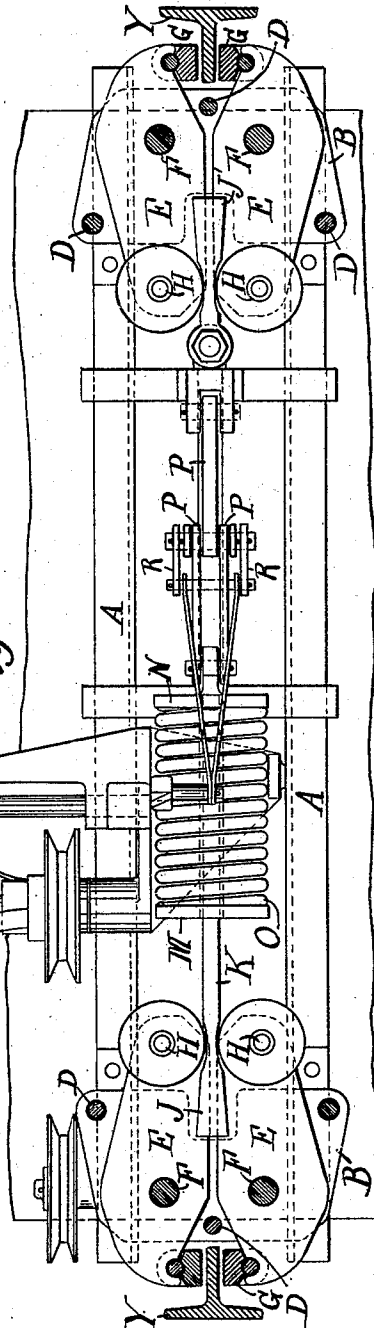


Fig. 3.



Witnesses
Edwin S. Hunt
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UNITED STATES PATENT OFFICE.

CHARLES R. PRATT, OF MONTCLAIR, NEW JERSEY, ASSIGNOR TO THE
SPRAGUE ELECTRIC ELEVATOR COMPANY, OF NEW YORK, NEW
YORK.

ELEVATOR SAFETY DEVICE.

SPECIFICATION forming part of Letters Patent No. 580,894, dated April 20, 1897.

Application filed December 17, 1896. Serial No. 615,989. (No model.)

To all whom it may concern:

Be it known that I, CHARLES R. PRATT, a citizen of the United States of America, residing at Montclair, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Elevator Safety Devices, of which the following is a specification.

My invention consists in the combination of two safety-catches operated by a spring, which is released by the governor, in combination with other elements, as hereinafter claimed.

Referring to the accompanying two sheets of drawings, which form a part of this specification, Figure 1 is a side view, partly in elevation, showing the safety device attached to the bottom of the car and engaging the car-guides. Fig. 2 is a plan of the safety device as seen from underneath, the governor and latch being omitted. Fig. 3 is a side view similar to Fig. 1, showing the safety device in its normal or latched position. Fig. 4 is a plan view similar to Fig. 2, but with the governor and latch included and showing the parts in the same position as in Fig. 3.

In Figs. 1 and 2 are shown channel-irons A, forming the lower cross-head of an elevator-car. They correspond to a safety-plank. On these channel-irons are mounted jaw-plates B, which are bolted to the guide-shoe stands or brackets C. (Shown only in Fig. 1.) There are three bolts D in each bracket and jaw-plate, as shown in Fig. 2.

The gripping-shoes G are mounted on levers E, pivoted on pins F, as shown in Fig. 2. On the inner ends of these levers are rolls H, there being two rolls on each lever mounted on opposite sides thereof and on a common axle. Between the pairs of rolls wedges J and J', Fig. 2, are placed. Wedges J are enlargements of the ends of rods K. Wedges J' are pivoted to the ends of the rod L. Rods K are tapped into the head N, and the rod L is tapped into the head M. Rods K pass through clearance-holes in head M and the rod L passes through a clearance-hole in head N. Between heads N and M is a helical spring. This spring tends to force the two heads M and N apart and thereby draws the wedges J and J' inward, thus applying the grip. Between heads N and Q are toggles P. The

rod L passes through the head Q and is provided with a shoulder which bears against the face of the head Q, as shown. When by the operation of the toggles the heads Q and N are forced apart, the rods K and L are pushed outwardly, thus releasing the grip, and the spring O is put under compression. To set the device, a pin P', which is pivoted at the joint between the links of one of the toggles, is caught at a latch R' on a rod R, which is pivoted to the other joint of the toggles. This rod R has pivoted to its lower end a rod S, which can be adjusted in length, and is pinned at its other end to a pivoted lever T.

In the drawings the safety is shown in the position of gripping. When the device is set, the upper end of the rod T is brought into such position that the balls U of the centrifugal governor U' will strike it on any large increase in the speed of the car, thus releasing the toggles and applying the grip. The governor is attached to a drum or pulley V', which is one of a pair of pulleys V V', mounted on the channel-irons A. A rope W, which is fastened at the top and bottom of the shaft, is snubbed around the drums or pulleys V and V', as shown.

The guide-shoes X are carried in the guide-shoe stands or brackets C, and the gripping-jaws G grip the T-rail guides Y.

It will be seen that the device here shown is very certain in its action, because the speed-governor may be made to strike the latch with great force, so that the grip will be applied whenever the speed exceeds the limit. It will also be seen that the grip at the two pairs of gripping-shoes will be equalized without respect to wear or irregularities in the shape of the parts, because the actuating-spring is attached at one end to a head to which the rods K are pinned, and is attached at the other end to a head to which the rod L is pinned. Therefore wedges J, having the same angle as wedges J' and being forced between the rolls with the same pressure, the gripping-pressure on each guide-rail by jaws G will be equal under any conditions of wear or adjustment. The importance of this is due to the fact that elevator-cars have little resistance to a diagonal strain on a plane between the

guide-rails, and if the safety-catch on one side of a car holds much more than the catch on the other side the car may collapse.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A safety device consisting of the combination of gripping-jaws mounted on pivoted levers, wedges coöperating with the levers to operate the jaws, a spring for operating the wedges, means for latching the spring with the gripping-jaws open, and a governor for unlatching the spring to apply the grip, substantially as described.

2. A safety device consisting of the combination of two safety-catches, toggles connecting them, a spring to operate the toggles and apply the grip, means for holding the toggles with the spring under strain, and a governor to release the spring, substantially as described.

Signed by me at Bloomfield, New Jersey, this 9th day of December, 1896.

CHARLES R. PRATT.

Witnesses:

DANIEL C. SMITH,
P. R. RITTERBUSCH.