(No Model.)

H. MUNDT & H. A. HOOPS.

SAFETY DEVICE FOR ELEVATORS.

No. 484,109. Patented Oct. 11, 1892.

Fig 2.

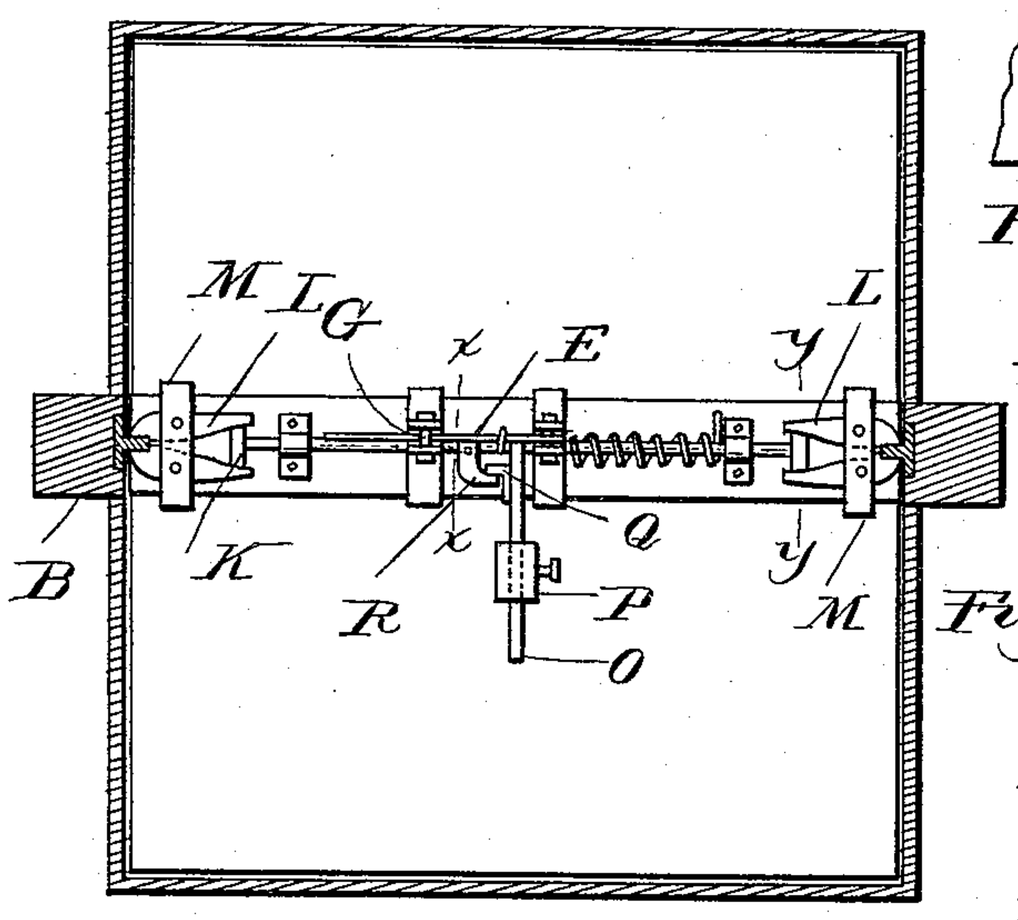

Fig 5.

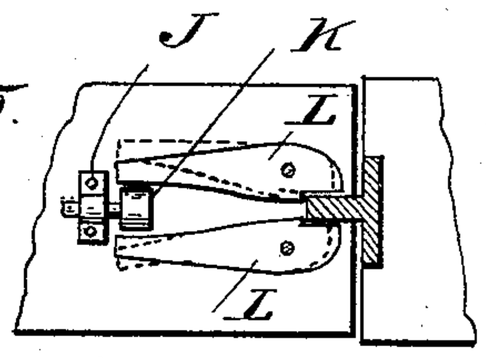

Fig 3.

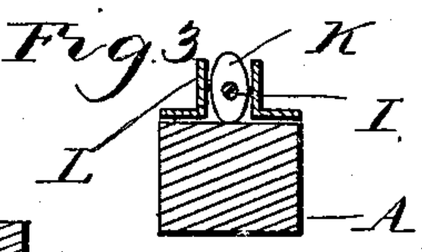

Fig 4.

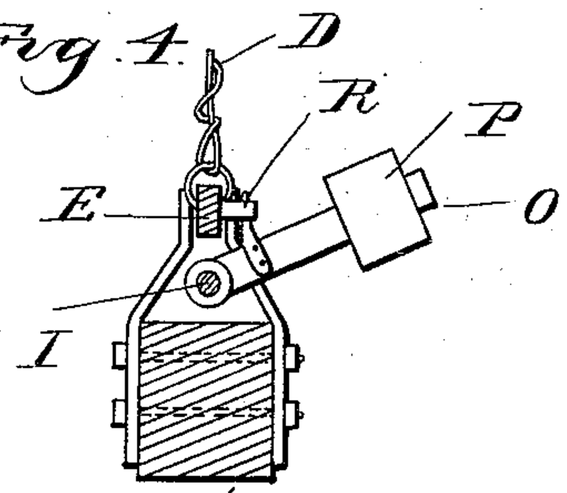

Fig 1.

Witnesses
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UNITED STATES PATENT OFFICE.

HENRY MUNDT AND HENRY A. HOOPS, OF DETROIT, MICHIGAN.

SAFETY DEVICE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 484,109, dated October 11, 1892.

Application filed June 20, 1892. Serial No. 437,341. (No model.)

To all whom it may concern:

Be it known that we, HENRY MUNDT and HENRY A. HOOPS, citizens of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Safety Devices for Elevators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in safety devices for elevators; and the invention consists in the peculiar construction of friction-jaws adapted to clamp the guide-strips of the elevator in the event of the suspending-cord breaking.

The invention further consists in the peculiar construction, arrangement, and combination of the various parts, as more fully hereinafter described.

In the drawings, Figure 1 is a side elevation showing the elevator in diagram and illustrating our invention. Fig. 2 is a top plan view thereof. Fig. 3 is a section on line *y y* in Fig. 2. Fig. 4 is a section on line *x x* in Fig. 2. Fig. 5 is an enlarged plan of the friction-jaws.

A is the elevator-frame. B are guide-posts having the usual guide-strip C extending therefrom. The elevator-frame is provided with a suitable groove, in which said guide-strips engage.

D is a suspending-cable, by means of which the elevator through the medium of a suitable motor is raised and lowered.

Our invention is intended to prevent the falling of the elevator in the event of the breaking of this cable, and to this end it is secured near one end of a lever E, which is pivoted in the strip F and extends beneath the cross-bar G in the strip H, the load being sustained through the medium of the lever E upon the pivot and the cross-bar.

I is a shaft journaled in bearings J upon the top of the elevator-frame, extending across the same to near the ends. At each end it is provided with cam-shaped heads K, which are between the ends of the levers L pivoted in a bracket M and forming gripping-jaws arranged on opposite sides of the guide-strips, as plainly shown in Figs. 2 and 5. These heads are normally in the position shown in Fig. 3, allowing the jaws to move freely on the guide-strips without binding or undue friction, and they are adapted to be rotated by the rotation of a shaft to operate the levers L and cause the jaws to tightly bind upon the guide-strip by means of the following mechanism.

N is a coiled spring secured at one end to the shaft I and at the other end to a stationary part of the elevator-frame, the spring being normally under tension to rotate the shaft in such a manner that the cam-shaped heads will be horizontally arranged to spread the levers. It is held against action to throw the heads into that position by means of a lever O, secured at one end to the shaft and at the other end carrying an adjustable counter-weight P. This lever is provided with a finger Q, adapted to engage with a finger R upon the lever E, the two acting as a lock to hold the shaft in its normal position.

S is a spring secured at one end to the lever E and at the other end to the elevator-frame, acting with its tension to draw down the outer end of the lever E.

The parts being thus constructed, their operation is as follows: In the event of the cable D breaking the spring S will immediately act to draw down the lever E, which will release the finger R from beneath the finger Q, when the spring N and counter-weight P will jointly act to rotate the shaft I, causing the cam-shaped heads to spread the levers L and cause them to tightly bind upon opposite sides of the guide-strip and hold the elevator from falling.

What we claim as our invention is—

1. The combination, with an elevator-car, its suspending-cable, and the guide-strips upon which it is vertically guided, of a lever to which said suspending-cord is secured, a spring acting normally to lower the free end of said lever, a shaft journaled on the elevator and extending to both sides thereof, cam-shaped heads at the ends thereof, levers forming clamping-jaws between which said heads rotate, a weighted lever secured to said shaft, and a supporting-finger on the suspending-lever, upon which the weighted lever is engaged, substantially as described.

2. The combination, with an elevator-car, its suspending-cable, and the guide-strips upon which it vertically moves, of the levers L, piv-

oted in the bracket M at each side of the elevator and extending on both sides of the guide-strips, the shaft I, the cam-shaped heads K at each end of said shaft, the spring N, acting to rotate said shaft, the counterweighted lever O, secured to said shaft, a finger on said shaft, a lever E, having a shoulder with which said finger engages, a spring for withdrawing the lever E, and the cable secured to said lever, substantially as described.

3. The combination, with an elevator-car, its cable, and an automatic gripping device adapted to be actuated on the breaking of the cable, of the lever E, the bracket F, in which one end of said lever is pivoted, the bracket H, having the cross-bar beneath which said lever engages, the cable secured to the lever between the brackets, a spring-actuated rod, gripping devices actuated by the rod, and a detachable connection between the rod and lever, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

HENRY MUNDT.
HENRY A. HOOPS.

Witnesses:
M. B. O'DOGHERTY,
N. L. LINDOP.