

(No Model.)

J. TAYLOR.
SAFETY STOP FOR ELEVATORS.

No. 543,359.

Patented July 23, 1895.

Fig. 1.

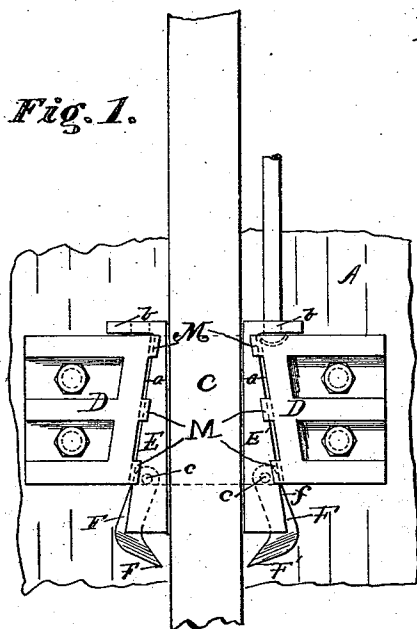


Fig. 2.

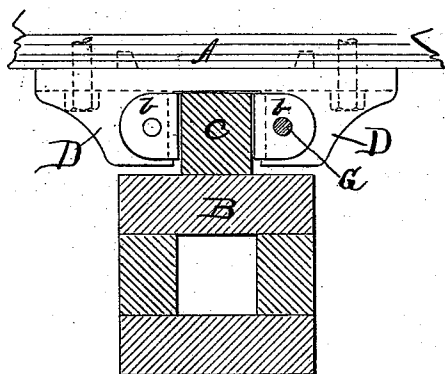


Fig. 4.

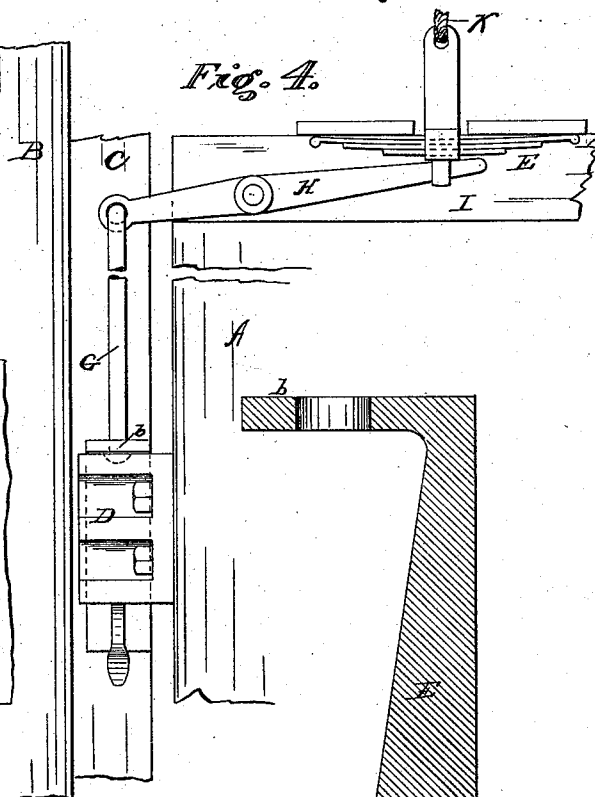
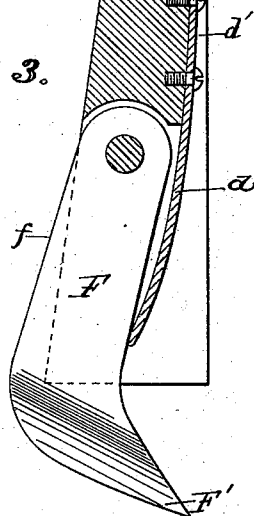


Fig. 3.



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UNITED STATES PATENT OFFICE.

JAMES TAYLOR, OF LOUISVILLE, KENTUCKY.

SAFETY-STOP FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 543,359, dated July 23, 1895.

Application filed January 4, 1893. Serial No. 457,273. (No model.)

To all whom it may concern:

Be it known that I, JAMES TAYLOR, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Safety-Stops for Elevators, of which the following is a specification.

This invention relates to an improvement in safety-stops for elevators and is illustrated in the accompanying drawings, in which—

Figure 1 shows a side view of part of an elevator-car with my improvement applied thereto, and also shows the guide-rail at the side of the hatchway. Fig. 2 shows a top view of the safety appliance, with the guide-rail and hatchway-post in section. Fig. 3 shows an enlarged sectional view of the safety device. Fig. 4 shows a side elevation of the safety device with the operating mechanism therefor.

The letter A designates the side of an elevator-car, and B an upright post at one side of the hatchway, in which said elevator-car works, said post having a vertical guide-rail C on its inner side. A guide-piece D is secured to the elevator-car and embraces the said guide-rail C, and this guide-piece has a wedge-shaped slideway *a*, on each side of the guide-rail, and lips M along the outer edge of each slideway, the small end of this slideway being at the top end of the guide-piece. Wedges E E' fit in these slideways between the lips M and the side of the car, with their straight sides against the sides of the guide-rail C, and these wedges have ears *b* extending over the top surfaces of the guide-pieces D. Said wedges extend below the said guide-pieces and are bifurcated at the lower ends to receive dogs or pawls F, which hang on pivots *cc*, connecting them with the said wedges, and have sharpened prongs F' at the lower end below the wedge. A spring *d* is seated in a recess *d'* in the straight side of the wedge, with its free end in engagement with the dog F, and holds said dog in a position where its back surface *f* projects from the wedge to be encountered by the guide-piece D should the elevator-car drop, as hereinafter explained. In its normal position the dog is of course free from the rail C.

A rod G is attached to the ear *b* of the wedge

E' and extends to the top of the car, where it will be connected with a lever H, pivoted to a cross-beam I on the car, and said lever is connected with the draft cables or ropes K on the opposite side of its pivot to the point of attachment of the rod G. A spring L bears on the said lever, tending to push down the end to which the ropes are attached.

As above described, it will be seen that the ear *b* forms a point of attachment for the rod G, and also engages with the top of the guide-piece D and acts as a stop to prevent the wedge from falling down from between the guide-piece and the guide-rail. By making the lower end of the wedge bifurcated and locating the dog therein, any lateral movement of the lower end of the dog will be prevented. The lower ends of the dogs are pointed and inclined inwardly and downwardly, so that as soon as they engage with the rail C the downward movement of the car will force them into the rail and stop the car, and by locating them upon opposite sides of the rail the engagement of the rail by one of them will be offset or counteracted by the engagement of it by the other one, which will prevent the liability of the parts being twisted and broken, as would be the case if the strain were to come upon one side of the rail only.

As long as the elevator runs regularly by the operation of the ropes, the safety-catch stands normally clear of the rail C. Should the ropes break, however, the weight of the car which has been serving to hold down the lever H, and thereby preserve the normal relation of parts no longer serves such purpose, whereupon the spring L immediately depresses the inner end of the lever, thereby raising the rod G and pulling the wedge E' up into the slideway *a*, when the guide-piece D, bearing on the back surface *f* of the dog, forces the point-end F' of the latter into the guide-rail C, which is of wood, and thereby instantly stops the elevator. It will be observed that the tendency of the car to fall acts to force the dog more deeply in the wood of the guide-rail.

One or more of these safety-catches will be attached on each side of the elevator-car.

Any suitable governor may be employed in connection with the safety-catches, in place of the spring-actuated lever here shown.

The wedge E is to be employed for taking up wear by moving it farther into its slide-way and fastening it.

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

The combination, with an elevator car, of a guide piece secured to one side thereof, the inner side, or edge of said guide piece being provided with a wedge shaped slide way, and having lips along its outer edge, a wedge within the slide way between the lips and the side of the car having one of its sides straight, the upper end of said wedge being bent over the top of the guide piece and perforated to form an ear, and the opposite end being bifurcated and recessed on its straight side

above the bifurcation, a dog pivotally secured within the bifurcation, the free end of which is curved downwardly and pointed, and a spring within the recess, the free end of which engages with the dog below the pivotal point and forces the rear edge of the dog beyond the inclined face of the wedge, a lever on the car, one end of which is connected with the hoisting rope and a rod secured to the other end of the lever and with the ear at the top of the wedge, substantially as set forth.

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

JAMES TAYLOR.

Witnesses:

I. R. MAYNARD,
NEILL BEGHTOT.