J. MARSHALL.

Safety-Check for Elevator.

No. 202,561. Patented April 16, 1878.

Fig. 1.

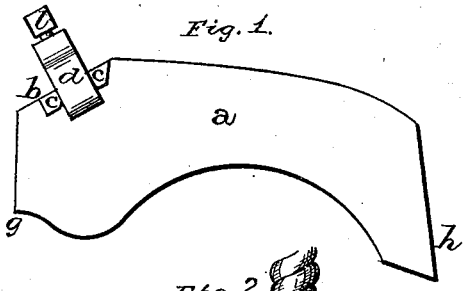


Fig. 2.

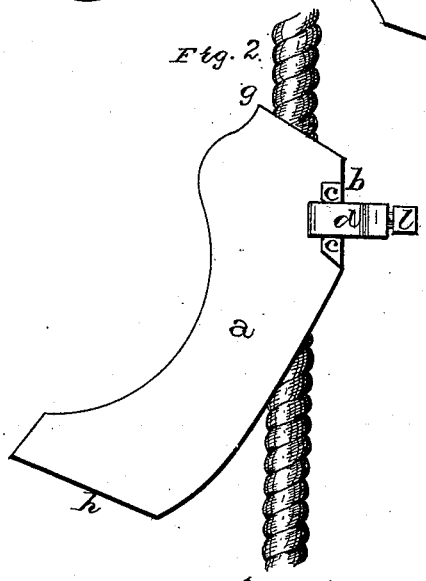


Fig. 3.

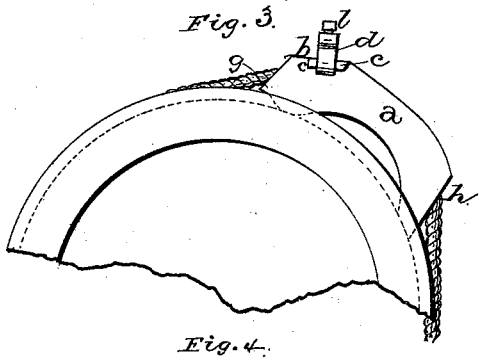
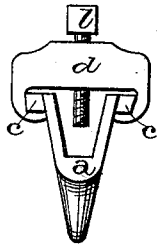


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN MARSHALL, OF PITTSBURG, PENNSYLVANIA,

IMPROVEMENT IN SAFETY-CHECKS FOR ELEVATORS.

Specification forming part of Letters Patent No. **202,561**, dated April 16, 1878; application filed November 26, 1877.

To all whom it may concern:

Be it known that I, JOHN MARSHALL, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Safety-Checks for Elevators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in safety-checks for elevators; and it consists in attaching a device to the ascending elevator-ropes, which device, when the elevator has arrived at the desired height, checks or stops the motion of the platform by lifting the ropes from the sheaves, as will be more fully described hereinafter.

The accompanying drawings represent my invention.

Figure 1 is a side view of the safety-check. Fig. 2 represents the check when attached to the rope. Fig. 3 shows the position of the check when it stops the motion of the platform; Fig. 4, a front view.

The body of the check *a* is grooved lengthwise in the form of the letter **V**, and the bottom of the groove arched, terminating forward in a straight line. The upper edges of the body of the check are also curved, but change toward the front to straight lines *b*, slanting downward, and corresponding with the inside at the bottom of the groove. At the outside of the upper edges, and on the straight lines *b*, are shoulders or flanges *c*, notched underneath to prevent the slipping of the clamp *d*, which catches under and around the shoulders. In the clamp is a set-screw, *l*, which serves to secure the check to the elevator-rope.

The under side of the check is an upward curve of a shorter radius than that of the sheave over which the rope plays, and terminates in straight ascending lines from under the shoulders *c*, forming an obtuse angle, *g*, with the front. The rear end of the under side is formed by a straight line, deflecting from the curve, making an acute angle, *h*, with the line connecting the upper and lower edges, as shown in Fig. 1.

The checks are applied to the insides of the ascending ropes, as shown in Fig. 2, so that the clamps, when secured by the screws, are outside.

The place where the clamps should be fastened is ascertained by raising the elevator to the desired height, and then marking the rope where it is in contact with the sheave, at which place the attachment should be made.

When the screw is tightened upon the rope, the check assumes the position indicated in Fig. 2, viz: the lower end of it will be at a distance from the rope, while the upper end clasps and holds it. If the elevator is now raised to the desired height, both ends of the under side of the check will be in contact with the sheave, bearing against it, and the rope, which heretofore played on the sheave, lifted up and transferred to the curved groove in the check. The rope thus held ceases to move, the friction being transferred to the stationary check, and the elevator necessarily stops at the desired height.

The object of my invention is to prevent the accidents frequently occurring from neglect of applying the rubbers to prevent the rapid ascent of the elevator when there is no counterbalancing weight to control its motion.

The weights applied to facilitate the raising of heavy goods to the upper stories in warehouses is so great, that when the opposing pressure is removed from the platform before the rubbers are applied to impede the motion of the wheels, the elevator will suddenly be raised and be made to ascend with such velocity that when it reaches the hoisting apparatus above damage of some kind must ensue. But if the checks herein described are properly applied, such accidents cannot occur, for as soon as the elevator arrives at the fixed point all motion ceases and the platform remains stationary.

Having thus described my invention, I claim—

1. The check *a*, having its inner edge shaped as shown, so as to impinge upon the

sheave only at two points, substantially as described.

2. The check *a*, having a groove in its outer edge to receive the rope, and a clamping device, *l*, to secure it to the rope at any desired point, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of November, 1877.

JOHN MARSHALL.

Witnesses:
T. F. LEHMANN,
SAML. DIESCHER.