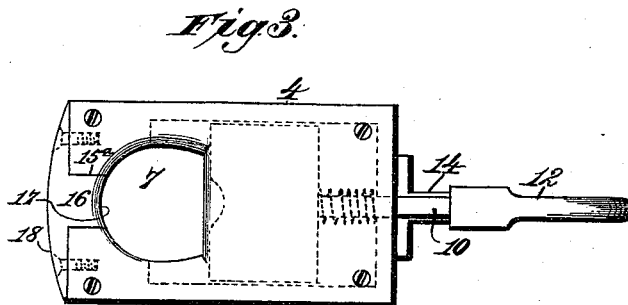
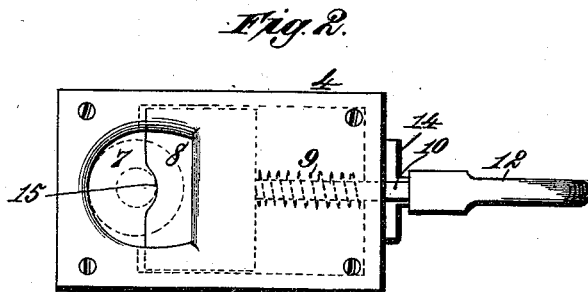
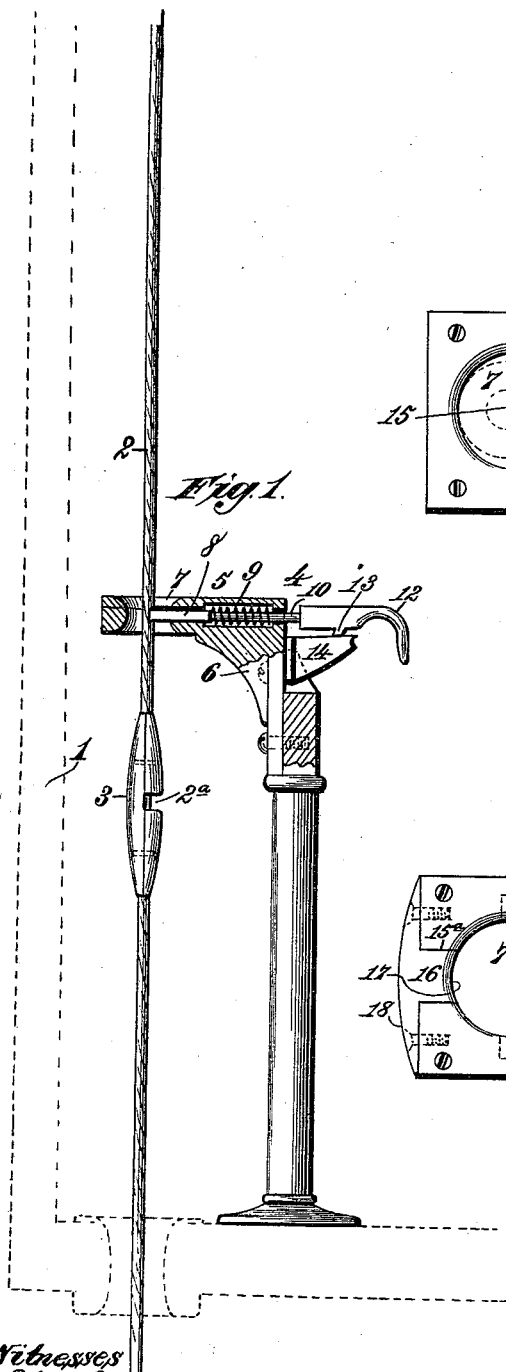


(No Model.)

G. H. HAVEN.
AUTOMATIC ELEVATOR STOP.

No. 455,282.

Patented June 30, 1891.



Witnesses
Phil. G. Smith
J. A. Rutherford

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Atty.

UNITED STATES PATENT OFFICE.

GEORGE H. HAVEN, OF NEW BEDFORD, MASSACHUSETTS, ASSIGNOR OF
ONE-HALF TO JOHN D. WILSON, OF SAME PLACE.

AUTOMATIC ELEVATOR-STOP.

SPECIFICATION forming part of Letters Patent No. 455,282, dated June 30, 1891.

Application filed March 13, 1891. Serial No. 384,895. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. HAVEN, a citizen of the United States, residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented new and useful Improvements in Automatic Elevator Stops and Locks, of which the following is a specification.

This invention has for its object to provide novel means for locking the shipper-rope of an elevator at any one of the stopping points or floors, so that movement of the shipper-rope in either direction is prevented until it is released by the attendant. To accomplish this object my invention involves the features of construction and the combination or arrangement of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a vertical section taken in the plane of the shipper-rope. Fig. 2 is a plan view of the parts, the shipper-rope and one of its enlargements being shown in dotted lines. Fig. 3 is a view showing the construction of the lock or stop-bracket to permit the attachment of the shipper-rope.

In the said drawings, the reference-numeral 1 indicates the elevator cage or car, having any usual construction, and adapted either for passengers or for merchandise. Through the cage or car passes the shipper-rope 2, in the well-known manner, and upon said shipper-rope are enlargements 3, formed of any suitable material and rigidly connected to the rope 2 at different points, so located that when the car is arrested at any one of its usual stopping-points one of these enlargements will be inside the cage or car. These enlargements are substantially cigar-shaped, the ends being truncated at points where the diameter is but little greater than the diameter of the shipper-rope, while the middle portion is about double, or somewhat more than double, the diameter of said shipper-rope. These enlargements may be constructed and applied in any preferred manner, being made either in two similar parts, each containing one-half the groove for the rope, or formed in one piece and drilled or bored to form the longitudinal opening.

Within the elevator car or cage, and firmly

attached to the wall thereof at such a point as to be within convenient reach of the person in charge of the car, is a bracket 4, upon which is mounted an angle-plate 5, the vertical portion of the latter being strengthened by a central web or brace 6. In the horizontal part of the same is formed an opening 7, partly circular in form and of such size as to freely permit the passage of the shipper-rope and the enlargements thereon. Within the said horizontal portion of the angle-plate is formed a recess for a flat latch-plate 8, of greater width than the opening 7, into which it is normally projected by one or more springs 9. Connected to the latch-plate is a spindle 10, which projects at the foot of the vertical portion of the angle-plate, and upon the end of which is mounted a hook 12. Upon the under edge of this hook is mounted a catch 13, and upon the outer face of the angle-plate below the hook is attached or formed a projecting bracket 14, with the end of which the catch 13 is adapted to engage when the spindle is withdrawn far enough to retract the latch-plate and entirely withdraw it from the opening 7.

The manner of using this device is as follows: The person in charge of the elevator, having withdrawn the spindle 10 and retracted the latch-plate, operates the shipper-rope and starts the elevator in either direction. If a stop is to be made at the next floor, the catch 13 is thrown off the bracket 14 at any moment after the car begins to move, and as the stopping-place is reached the enlargement upon the shipping-rope at that point enters the partially-closed opening 7, and by the wedging action of its end drives the latch-plate back until the central portion of the enlargement lies in the opening 7, bringing the transverse notch or slot into line with the end of the latch-plate. The latter instantly snaps into the notch or slot, thereby causing the shipper-rope to travel with the elevator-car and arrest its movement. When this engagement is once effected, the shipper-rope cannot be operated to start the car until the latch-plate is withdrawn. The latter is provided with a half-round notch 15, formed in its edge, to receive the shipper-rope, which is partly exposed by the transverse slots 2^a,

formed in the enlargements. It will be understood without explanation that these enlargements are so located with reference to the position of each landing, and with relation also to the position of the bracket 5, that the car will be arrested at the proper point. If the elevator is to pass several stations or landings, the spindle is drawn back and the catch 13 is hooked upon the bracket 14, from which it is detached at any point between the last two landings.

In many establishments, and especially where freight-elevators are used, it is customary to operate the shipper-rope from a landing when the elevator is some distance above or below, in preference to waiting until it can be operated by the person in charge, who may be temporarily absent. Many accidents have been caused by this practice, as well as by the premature stopping and starting of the elevator by persons who sometimes seize the shipper-rope without knowing its use. My invention will effectually avoid liability to accidents of this kind, as it provides a lock for the shipper which prevents it from being operated from any point except the elevator itself. Moreover, it will in most instances prevent meddling with the shipper by children and others who are not familiar with its construction and operation. I also provide thereby an automatic elevator-stop which is exceedingly simple, comparatively inexpensive, and sure in operation.

In order to connect the shipper-rope without taking it off, I form the lock in the manner shown in Fig. 3, in which the reference-numeral 4 indicates the horizontal part of the angle-plate, having the aperture for the shipper-rope. Opening from this aperture is a channel 15^a, of sufficient width to admit the shipper-rope, said channel being cut through the forward part of the bracket or plate 4. It is closed after the rope is inserted by a steel plug 16, having a concave face 17 upon its

end, which completes the circular aperture. Upon the other end is a flange or head 18, through which are passed screws tapped into the edge of the bracket or plate. By this construction the shipper-rope is readily connected to or disconnected from the lock without trouble and without compelling the elevator to stop until the connection is made.

What I claim is—

1. The combination, with the shipper-rope having enlargements tapered at each end and provided at or near their centers with notches, of the bracket 4, having an opening 7 and channel 15^a leading therefrom, a removable and replaceable head 18, detachably secured to the bracket and having a plug 16 entering the channel, a spring-impelled rectilinearly-sliding catch-plate 8, mounted in the bracket and adapted to engage the notches of the enlargements, and means for releasing the catch-plate from the enlargements, substantially as described.

2. The combination, with the shipper-rope, having enlargements 3, tapered at each end and provided at or near their centers with notches 2^a, of the bracket 4, having the opening 7 and the laterally-projecting bracket 14, the spring-impelled rectilinearly-sliding catch-plate 8, mounted in the bracket and provided with the spindle 10, and the finger-hook 12, attached to the spindle and provided at its under side with the pendent catch 13, adapted to engage the laterally-projecting bracket when the catch-plate is slid out of engagement with the enlargements, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

GEORGE H. HAVEN. [L. S.]

Witnesses:

FRANK H. GIFFORD,
FRANK A. MILLIKEN.