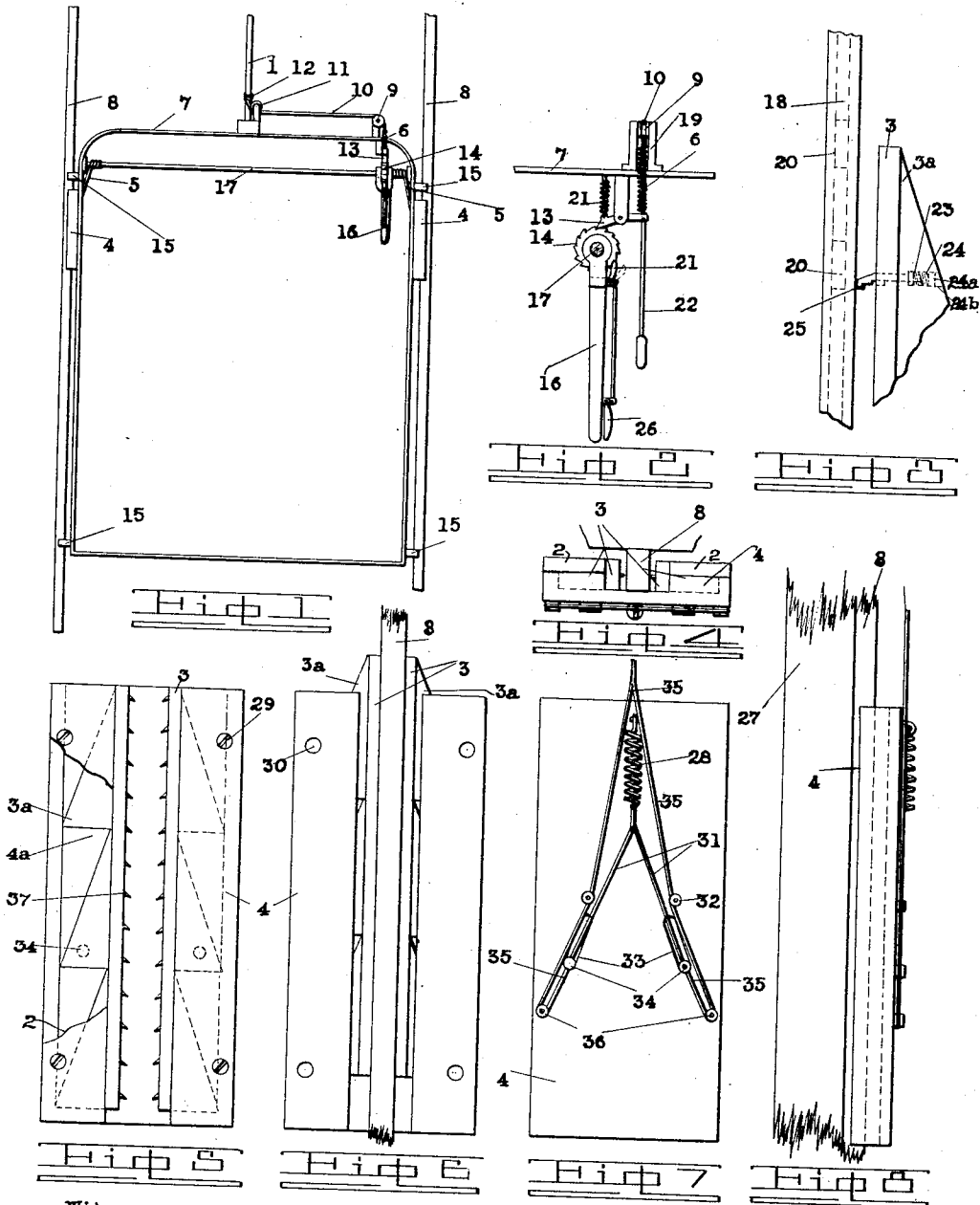


M. O. GODDING.
SAFETY APPLIANCE.
APPLICATION FILED JUNE 20, 1911.

1,039,517.

Patented Sept. 24, 1912.



Witnesses;

J. M. Miller
R. W. Kelly

Inventor,

Milou O. Godding
By *J. H. Mock*
Attorney.

UNITED STATES PATENT OFFICE.

MILON O. GODDING, OF PORTLAND, OREGON.

SAFETY APPLIANCE.

1,039,517.

Specification of Letters Patent.

Patented Sept. 24, 1912.

Application filed June 20, 1911. Serial No. 634,381.

To all whom it may concern:

Be it known that I, MILON O. GODDING, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Safety Appliances, of which the following is a specification.

This invention relates to improvements in safety appliances for elevators, and has for its object to provide a device which will grip the guide rail of the elevator to arrest its motion.

A further object is to provide a safety stop which will be set into operation automatically, upon slackening the cable of the car, and which may also be operated manually.

I accomplish these objects by the mechanism illustrated in the accompanying drawing, in which—

Figure 1 is a sectional elevation of an elevator showing my safety device as applied. Fig. 2 is a detail view of a ratchet and lever. Fig. 3 is a detail of a gripping jaw or shoe, showing a bar for engaging in the iron rail. Fig. 4 is a top view of one of the gripping devices as applied upon one of the guide rails. Fig. 5 is a front elevation of Fig. 4, with jaws open. Fig. 6 is the same with jaws engaged upon the rail. Fig. 7 is a rear view of same. Fig. 8 is a side view.

Similar characters of reference indicate similar parts in each of the views.

In the drawing, 8 represents the usual guide rails, between which the car 7 is operated, the car being held in place by the guide lugs 15, and carried by the cable 1.

My improved safety appliance consists of a housing 4 secured at each side of the car, by means of bolts 29, through apertures 30, in the plates 2 thereof. The outer side of the housing is open along its median line and adapted to embrace the guide rails 8. Within each side of the housing is arranged, end to end a series of wedges, the taper of each wedge being made entirely from the inner side. The wedges of the two series are oppositely disposed, and their thick ends are formed at right angles to the length of the housing, making a transverse shoulder or support therein, and positioned uppermost. Within the spaces formed by

the tapering of said wedges is arranged a series of correspondingly formed wedges 3^a, those at each side of the housing being fixed upon a bar or shoe 3, each of which stands contiguous to the base of one of the first mentioned series of wedges, one being at each side of the rail or guide post 8, though normally at a short distance therefrom.

37 are teeth in the face of the shoes 3 adapted to engage in the guide posts. These jaws are held in place by the plates 2.

It is obvious that a single extended wedge may be substituted for each series of wedges.

In the face of the housing adjacent the car are slots 33 corresponding in direction to the inclined faces of the wedges in the gripping jaws. These slots are adapted to receive, and to limit the movement of, pins 34 fixed in opposing wedges 3^a. They hold the jaws apart at their lower limit, and by limiting their upward movement prevent them from coming closer together than may be desired. Toward the upper end of the housing is secured a spring 28, which is connected by suitable cables 31 to said pins 34. To each of said pins there is also secured a cable 35, which passes downwardly under a pulley 36, thence upwardly under the guide pulleys 32, and the cables are finally united in the single member 5, which extends to the ratchet bar 17 in the upper part of the car, where it is secured.

Upon the bar 17 is provided a ratchet wheel 14 and the lever 16, by means of which the rope 5 is wound upon said bar 17, thereby drawing the jaws 3 downwardly, forcing the wedges outwardly and retaining them upon the horizontal ends of the wedges 4^a. The ratchet is driven by the pawl 21^a, which is controlled by the releasing lever 26.

Upon the car is secured a bracket 19 carrying the pulley 9, over which extends the rope 10, passing under the pulley 11 whence it is secured to the cable of the car at 12. To the lower end of the rope 10 is attached a strong spring 6, which in turn is attached to the outer end of pawl 13, mounted in a depending bracket above the ratchet wheel. A small spring 21 is secured to the car 7, the lower end of which is attached to the front end of the pawl 13. The spring 6 being much stronger than spring 21, holds the pawl normally in engagement with the

ratchet wheel, preventing a return movement thereof and thereby holds the shoes 3 free from the guide rail. The operating handle 22 is made to depend from the outer end of the pawl, for the convenient use of the operator.

Should the car become unmanageable the operator can instantly release the pawl by the handle 22, when the spring 28 will force the shoes against the rail and the weight of the car, through wedges 4^a resting upon the wedges 3^a will bind the jaws upon the rail with such force as to arrest the motion of the car. In the event of the breaking of cable 1, the relaxation of cord 10 would relieve the tension on spring 6, whereupon the force of spring 21 would immediately raise the pawl 13, and release the ratchet setting the shoes or gripping jaws into operation, as above indicated.

In Fig. 3 I have shown a modification in which the guide rail 18, which may consist of the ordinary T-iron, is provided in its web with a plurality of oblong apertures 20. In this case the wedges 3^a are provided with an aperture 24^b in which is mounted a transverse bar 23, which projects through the face of shoe 3, though by means of spring 24 bearing upon the shoulder 24^a, the bar may be forced backwardly until it stands flush with the face of the shoe. In operation, when these shoes are brought forward the bars will be forced inwardly against the springs 24, permitting the shoes to bear upon the web of the rail. When the car moves downwardly a short distance the bars will come opposite the oblong slots 20 and will be forced into them by springs 24, where they will be retained by the depending lugs 25.

In mines, and places where temporary elevators are employed, the rails are usually made of wood, and in such cases the small spurs 37, which embed themselves into the wood, are found most practical. It is obvious, however, that the jaws may be successfully employed without the use of spurs or other retaining means, by bringing them into frictional contact with the rails.

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

1. The combination with an elevator car of a guide rail at each side thereof, a housing mounted at each side of the car having its front side open along its median line and positioned to embrace its respective rail and provided at the center in the rear side with a pair of downwardly diverging slots, a member secured in each side of the housing whose inner face stands parallel with its respective slot, a reciprocating member conforming thereto whose inner face stands parallel with said rail, a shank fixed upon each reciprocating member and extending through its respective slot, and mechanism

operatively connected with said shanks, whereby the reciprocating members are brought to bear upon the guide rail.

2. The combination in an elevator car of a guide rail at each side thereof, a housing mounted at each side of the car having its front side open along its median line and positioned to embrace its respective rail and provided at the center in the rear side with a pair of downwardly diverging slots, a member secured in each side of the housing whose inner face stands parallel with its respective slot, a shoe conforming thereto whose inner face stands parallel with said rail, a shank extending from each shoe through its respective slot, a spring secured to said housing above the slots, a pulley mounted below each slot, a cable engaging the spring, with said shanks, for drawing the shoes toward their upward limit, a shaft above the housing, a cable extending from each shank downwardly beneath a pulley and returning to said shaft, and means for winding the cable on the shaft for retracting the shoes toward their lower limit.

3. The combination with an elevator car of a guide rail at each side thereof, a housing mounted at each side of the car having its front side open along its median line and positioned to embrace its respective rail and provided at the center in the rear side with a pair of downwardly diverging slots, a member secured in each side of the housing whose inner face stands parallel with its respective slot, a shoe conforming thereto whose inner face stands parallel with said rail, a shank extending from each shoe through its respective slot, a spring secured to said housing above said slots, a pulley mounted below each slot, a cable uniting the spring with said shanks, for drawing the shoes toward their upper limit, a shaft above the housing, a cable extending from each shank downwardly beneath a pulley and returning to said shaft, means for winding the cable on the shaft for retracting the shoes toward their lower limit, mechanism for releasably holding said winding means, a hoisting cable, and means connecting the hoisting cable with said holding mechanism, whereby any relative movement of the hoisting cable will release the holding mechanism.

4. In a safety appliance for elevator cars, a housing, a guide rail having a plurality of elongated apertures in the web thereof, embraced by said housing, a member having an upwardly inclined face secured in each side of the housing, a shoe conforming to the inclined member and slidably mounted in the housing at each side of the guide rail, a transverse bar yieldingly held by each shoe and adapted for engagement in a slot in the guide rail, and means for forcing the shoes against the guide rail.

5 5. In a safety appliance for elevator cars a housing, a guide rail embraced thereby, a series of wedges secured in each side thereof, a shoe slidably mounted in the housing at each side of the guide rail, a series of inverted wedges secured to each shoe the faces of which are adapted to bear against the corresponding faces of the first mentioned wedges, transverse bars yieldingly held by

said shoes and adapted for engagement in the guide rail, and means for forcing the shoes against the guide rail.

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

MILON O. GODDING.

Witnesses:

H. MARTINSON,
W. D. ORDWAY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
