

I. HIZÓ.
ELEVATOR SAFETY DEVICE.
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1,059,730.

Patented Apr. 22, 1913.

Fig. 1.

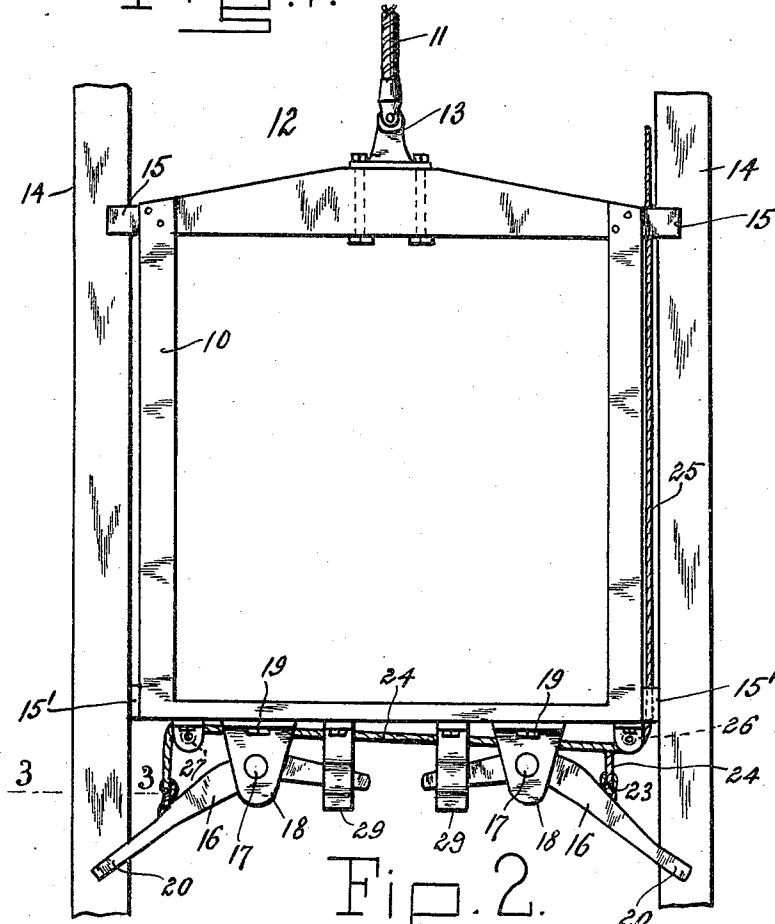


Fig. 2.

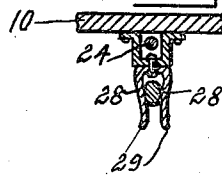


Fig. 3.

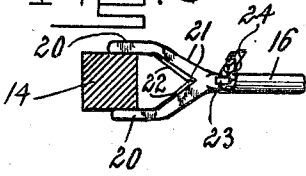
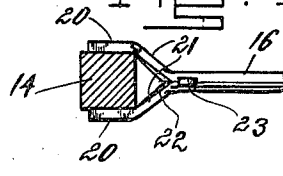


Fig. 4.



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ELEVATOR SAFETY DEVICE.

1,059,730.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, IMRE HIZÓ, a subject of the King of Hungary, and resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Elevator Safety Devices, of which the following is a specification.

The present invention relates to elevators, and has for one of its objects to provide a simple and efficient safety device, whereby the elevator car is held in position should the hoisting rope or cable give way.

Another object of the invention is to produce a device of this character which will come into action promptly before the car can acquire much momentum.

A further object of the invention is to construct movable guides for elevator cars which will act, at the same time, as safety devices.

With these and other objects in view, which will more fully appear as the nature of the invention is better understood, the same consists in the combination, arrangement and construction of parts hereinafter fully described, pointed out in the appended claim and illustrated in the accompanying drawings, it being understood that many changes may be made in the size and proportion of the several parts and minor details of construction within the scope of the appended claim without departing from the spirit or sacrificing any of the advantages of the invention.

One of the many possible embodiments of the invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a front elevation of an elevator containing the invention; Fig. 2 is a sectional side elevation of a detail of construction; Fig. 3 is a section taken on line 3—3 of Fig. 1; and Fig. 4 is a similar section showing the operation of the device upon breaking of the hoisting rope and falling of the elevator.

In the drawings, the numeral 10 indicates an elevator car, suspended by a hoisting rope 11 in a shaft 12. The lower end of the rope 11 is fastened to the operating drum in the well known manner, while its upper end is attached to the car 10, for instance by means of an eye bolt 13, which is secured in any suitable manner to the top of said car. Uprights 14, 14 extend up the opposite sides of the shaft. Near to its

upper end the car is provided with brackets 15, 15 in engagement with the uprights 14 for guiding, in coöperation with the means hereinafter to be described, the up and down movement of the car. To the sides of the car, near to the bottom thereof, are fastened blocks 15', 15', which are in sliding engagement with the inner sides of the uprights 14, 14.

The safety mechanism comprises two levers 16, 16, which are pivoted at 17, 17 to brackets 18, 18, the latter depending from the bottom of the car and being secured thereto by screw bolts 19, 19, or otherwise. The outer ends of these levers are fork-shaped; their prongs 20, 20 being parallel to each other and engaging continuously the parallel front and rear sides of the uprights 14, 14. The inner portions 21 of the prongs 20 are bent toward each other at an angle and beveled, whereby knife edges 22, 22 are formed upon the lower surfaces of the portions 21 of the prongs 20. In rear of the prongs are formed upon the levers eyes 23, which are engaged by the divided strands 24, 24 of a cord 25, which runs over a sheave 26 upward parallel with the hoisting rope 11, to be actuated by the drum on which the said hoisting rope is wound. That strand 24 of the cord, which is in engagement with the eye of the left-hand lever, is guided by a sheave 27. The inner ends of the levers 16 are normally held between the outwardly bent portions 28, 28 of leaf springs 29, 29, which are mounted upon the bottom of the car. The cord 25 is normally slack to some extent, and will not affect the positions of the levers 16 in any way.

The operation of this device is as follows: Normally the levers 16, 16 are in their positions shown in Fig. 1 of the drawings, the knife edges 22, 22 being held a suitable distance from the uprights 14, 14, and the parallel portions of the prongs 20 in engagement with said uprights, whereby said levers, the brackets 15, 15 and the blocks 15', 15' will act as guides. More particularly, the levers 16, 16 prevent the swinging of the lower end of the car from the front end of the shaft toward the rear end thereof, while the blocks 15', 15' prevent the movement of the car from side to side of the shaft. The levers are held in the positions shown in Fig. 1 of the drawings by the leaf springs 29, 29. If the hoisting rope 11 breaks or gives way, the cord 25 will be drawn taut,

whereby the outer ends of the levers 16, 16 are pulled upward. The portions 21, 21 of the lever are thereby forced into contact with the uprights 14, 14, acting thus as
 5 wedges and their knife edges 22, 22 are by the weight of the car forced inward, stopping thus the movement of the car. It is to be observed that, when the hoisting rope 11 breaks, a pull is exerted immediately upon
 10 the cord 25 due to the fact that the car is supported then until the cord 25 breaks by the latter, which pull is sufficient to disengage the inner ends of the levers from the leaf springs 29. As soon as the inner ends
 15 of the levers 16 are disengaged from the springs 29, their outer ends act immediately in the manner above described.

What I claim is:—

In an elevator, the combination with an
 20 elevator shaft, of vertical uprights attached to two sides thereof, an elevator car traveling in said shaft, guiding brackets fixedly attached to said car in engagement with said uprights, levers pivotally attached to said

car having fork-shaped ends in sliding en- 25
 gagement with said uprights, the inner portions of the prongs of said forks being bent at an angle to each other and provided with
 30 knife edges, springs for normally holding the inner ends of said levers in their elevated positions and thereby the bent portions and knife edges of the prongs of said levers disengaged from said uprights, and a cord at-
 35 tached to the fork-shaped ends of said levers, said cord being normally slack, but drawn taut upon breaking of the hoisting
 40 rope, whereby the inner ends of said levers are disengaged from said springs and the bent portions and knife edges of said prongs automatically swung into engagement with
 45 said uprights.

Signed at New York, in the county of New York and State of New York, this 1st day of November, A. D. 1912.

IMRE HIZÓ.

Witnesses:

SIGMUND HERZOG,
 M. FRIEDLANDER.

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