K. SZENTIVANYI.

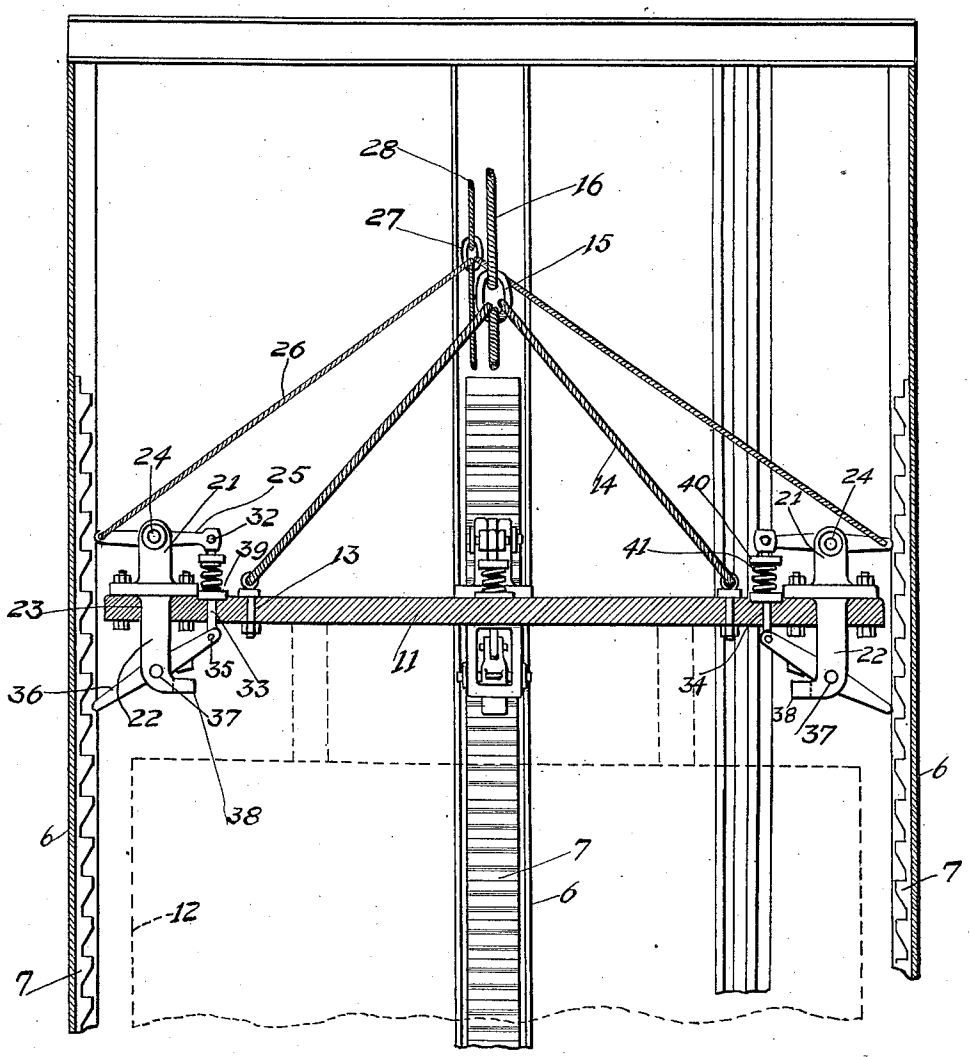
SAFETY ELEVATOR DEVICE.

APPLICATION FILED MAY 26, 1911.

1,010,090. **Patented Nov. 28, 1911.**

2 SHEETS—SHEET 1.

FIG. 1.



WITNESSES:

Erich Burkly.

K. A. Fuller

INVENTOR.

KALMAN SZENTIVANYI.

BY

M. C. Everett & Co.

ATTORNEYS

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

K. SZENTIVANYI.

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2 SHEETS—SHEET 2.

FIG. 2.

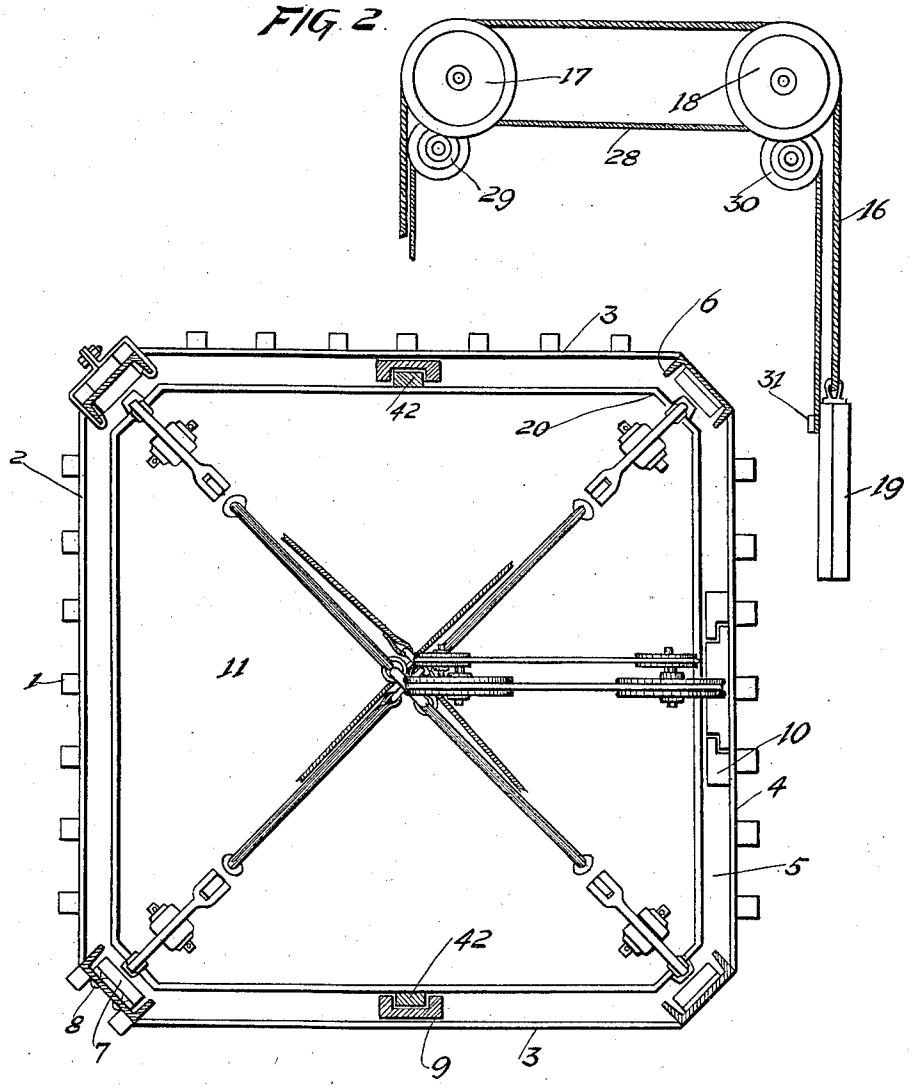


FIG. 3.

WITNESSES:

Erich Burkly

R. H. Buller

INVENTOR.

KALMAN SZENTIVANYI

BY

A. C. Ewert & Co.

ATTORNEYS.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

KALMAN SZENTIVANYI, OF HARTFORD, CONNECTICUT, ASSIGNOR OF FIFTEEN ONE-HUNDREDTHS TO RUDOLPH F. HORVATH, OF HARTFORD, CONNECTICUT.

SAFETY ELEVATOR DEVICE.

1,010,090. Specification of Letters Patent. Patented Nov. 28, 1911.

Application filed May 26, 1911. Serial No. 629,622.

To all whom it may concern:

Be it known that I, KALMAN SZENTIVANYI, a subject of the King of Hungary, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Safety Elevator Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a safety elevator device, and the objects of my invention are the provision of positive and reliable means, in a manner as will be hereinafter set forth, for preventing the sudden descent of an elevator cage should the hoisting cable thereof break, and to provide a device of the above type that can be easily installed in connection with the present type of elevator shaft and cage.

Further objects of my invention are to provide a safety elevator device that is simple in construction and automatic in its operation, the device consisting of comparatively few parts easily and quickly assembled and maintained in an operatable condition.

With the above and other objects in view the invention resides in the novel construction, combination and arrangement of parts to be hereinafter specifically described and then claimed.

Reference will now be had to the drawings, wherein like numerals of reference designate corresponding parts throughout the several views, in which:—

Figure 1 is a vertical transverse sectional view of a portion of an elevator shaft showing the safety device. Fig. 2 is an elevation of a portion of the hoisting cables of the elevator cage, and Fig. 3 is a plan of the safety elevator device.

The reference numeral 1 denotes, by way of example, vertical frames supporting the walls 2, 3 and 4 of an elevator shaft 5, and at the vertical edges of said walls there are vertical channel bars 6 disposed at an angle relative to said walls, whereby oppositely disposed channel bars will be in parallelism and coöperate for a purpose that will presently appear. Each of the channel bars 6 is provided with a vertical rack 7 that is riveted or otherwise connected to the channel bar, as at 8. The walls 3 are provided with vertical channel shaped guides 9 and the wall 4 has a vertically-disposed weight guide 10.

The reference numeral 11 denotes a platform and suitably suspended or supported from the said platform is the ordinary type of elevator cage 12. The platform 11 is provided with four equally spaced eye bolts 13 and connected to said bolts are suspension cables 14 having the upper ends thereof connected to a link 15. The link 15 is connected to one end of a hoisting cable 16, which passes upwardly over sheaves 17 and 18 revolubly supported at the top of the elevator shaft 5. The free end of the hoisting cable 16 is provided with a weight 19 that slides in the guide 10. The platform 11 has the edges thereof cut away or chamfered to confront the racks 7, as at 20, and located adjacent to the edges 20 of the platform 11 are vertical bearings 21 having hangers 22 extending through openings 23 provided therefor in the platform 11. Fulcrumed in the bearings 21 by pins 24 are arms 25 having the outer ends thereof connected to branch cables 26, said cables having the upper ends thereof connected by a link 27 to one end of a weight cable 28. This cable passes upwardly over revoluble sheaves 29 and 30, located adjacent to the sheaves 17 and 18, and has the other end thereof attached, as at 31 to the weight 19. The inner ends of the arms 25 are pivotally connected, by pins 32 to connecting rods 33 that extend through vertical openings 34 provided therefor in the platform 11. The lower ends of the rods 33 are pivotally connected by pins 35 to the inner ends of rack-engaging members 36 pivotally mounted, as at 37 in the hangers 22. The hangers 22 have extensions 38 to limit the downward movement of the inner ends of the rack-engaging members 36. The connecting rods 33 extend through bearing plates 39 mounted in the platform 11 at the upper ends of the openings 34, and mounted upon said rods adjacent to the upper ends thereof are washers 40. Encircling the connecting rods 33 between the plates 39 and the washers 40 are coiled springs 41 adapted to normally maintain the connecting rods in an elevated position, whereby the outer ends of the rack-engaging members 36 will be normally held out of engagement with the racks 7.

The platform 11 has oppositely disposed

edges thereof provided with guide blocks 42 which ride in the guides 9 of the walls 3 of the elevator shaft 5.

In operation, the hoisting cable 16 is maintained taut by the weight of the elevator cage 12, the weight 19, and the hoisting mechanism associated with the elevator and which is not shown for the reason that it forms no part of my invention. When the hoisting cable 16 breaks, the weight 19 is released and this weight is heavy enough to pull downwardly upon the cable 28 and overcome the tension of the springs 41. When the branch cables 26 are pulled upwardly the connecting rods 33 are lowered through the medium of the fulcrumed arms 25 compressing the springs 41, consequently the inner ends of the rack-engaging members 36 are lowered into engagement with the extensions 38 of the hangers 22 and the outer ends of said members thrown into engagement with the racks 7. The platform 11 will then be held by the racks, the members 36, and the hangers 22, consequently the elevator cage 12 will be supported until the hoisting cable 16 can be repaired or renewed. When the platform 11 is moved upwardly by the repaired hoisting cable, the expansion of springs 41 immediately restores the rack-engaging members 36 to their normal position.

What I claim is:—

1. In a safety elevator device, an elevator shaft provided with vertical racks, a platform movable in the elevator shaft and supporting a cage, a hoisting cable supporting said platform and having the free end thereof provided with a weight, bearings mounted upon said platform at the edges thereof adjacent to said racks, depending hangers carried by said bearings and extending through said platform, arms fulcrumed in said bearings, a weight cable attached to the weight of said hoisting cable and having branch cables attached to the outer ends of said arms, vertical rods movably arranged in said platform and having the upper ends thereof pivotally connected to the inner ends of said fulcrumed arms, rack-engaging members pivotally mounted in said hangers and having the inner ends thereof pivotally connected to the lower ends of said connecting rods and the outer ends thereof adapted to engage said racks, and coiled springs encircling said rods above said platform and adapted to normally retain the outer ends of said rack-engaging members out of engagement with said racks.

2. In a safety elevator device, the combination with the elevator shaft provided at opposite sides with vertically-disposed racks, a platform movable in the elevator shaft and supporting a cage, and a weighted hoisting cable connected to the platform, of bearings mounted on the platform adjacent the racks of the elevator shaft, depending hangers carried by said bearings projecting below the platform and provided at their lower ends with laterally-projecting stops, pivoted arms carried by said bearings above the platform, a weight cable attached at one end to the weight of the hoisting cable, branch cables connected at one end to the outer ends of said arms and at their other ends to said weight cable, rail engaging members pivoted to said hangers below the platform, rods extending through the platform and pivotally-connected at their respective ends to the inner ends of the arms and the inner ends of the rack-engaging members, and springs on said rods between the platform and inner ends of the arms acting to normally hold the rods elevated and the outer ends of the rail-engaging members out of engagement with said racks.

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

KALMAN SZENTIVANYI.

Witnesses:
JOSEPH S. HORVATH,
JOSEPH HOHER.

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