

L. KANTOR.
ELEVATOR.

APPLICATION FILED JULY 31, 1909.

948,175.

Patented Feb. 1, 1910.

2 SHEETS—SHEET 1.

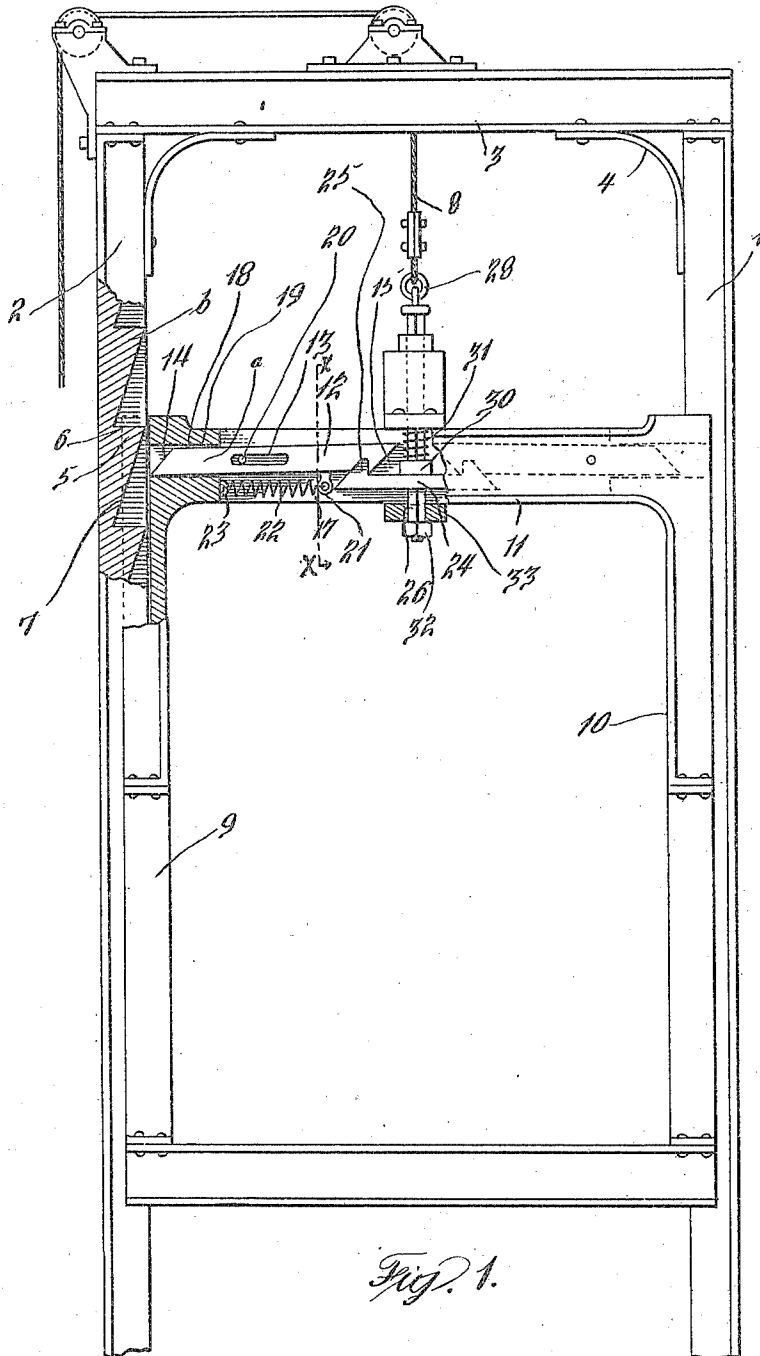


Fig. 1.

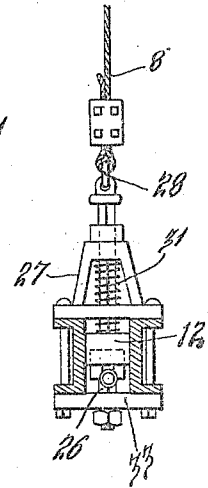


Fig. 2.

Witnesses
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2 SHEETS--SHEET 2.



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UNITED STATES PATENT OFFICE.

LOUIS KANTOR, OF DAYTON, OHIO.

ELEVATOR.

948,175.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LOUIS KANTOR, a subject of the King of Hungary, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Elevators, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to safety appliances for elevators and the object thereof is to provide means in a manner as hereinafter set forth which is automatically thrown into operation when the elevator cable breaks to
15 prevent the falling of the elevator cage.

A further object of the invention is to provide a safety appliance for elevators which shall be simple in its construction, strong durable, efficient in its use, readily
20 set up with respect to the elevator cage and inexpensive to manufacture.

With the foregoing and other objects in view this invention consists of the novel construction, combination and arrangement of
25 parts as hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and
30 modifications can be resorted to, which come within the scope of the claim hereunto appended.

In the drawings wherein like reference characters denote corresponding parts
35 throughout the several views, Figure 1 is an elevation partly in section of an elevator shaft and also showing a cage, the latter being partly in section and further showing the adaptation of the safety appliance in
40 accordance with this invention with respect to the cage and shaft, Fig. 2 is a cross sectional view taken on the line X—X, Fig. 1, Fig. 3 is a view somewhat similar to Fig. 1, but showing the supporting cable of the ele-
45 vator as broken and the safety appliance in operative position to prevent the falling of the cage.

Referring to the drawings by reference characters 1 and 2 denote a pair of ver-
50 tically-extending rails connected together at their tops by a cross bar 3 and braced with respect to the cross bar 3 by brackets 4, each of the rails 1, 2 being formed on its inner face with teeth 5 having a flat face 6 and an
55 elongated beveled face 7, the beveled face of one tooth terminating in the inner end of

the flat face of the lower tooth. The flat faces 6 constitute supporting ledges which are engaged by the safety appliance to prevent the cage from dropping if the elevat-
60 ing cable 8 becomes slack or broken. The rails 1, 2 constitute guide rails for the elevator cage and the cage is provided with side rails 9 10 which overlap the rails 1, 2 and the said side rails 9 and 10 being con-
65 nected together by a cross rail 11 which carries the safety appliance.

The safety appliance comprises a pair of spring controlled locking catches 12, each provided with a longitudinally-extending
70 elongated slot 13, a beveled outer end 14, a beveled inner end 15 which is reversed with respect to the end 14, and a substantially inverted V-shaped notch 16 adjacent said inner end. The catches 12 when moved to opera-
75 tive position extend laterally with respect to the rail 11, but said catches 12 move in opposite directions with respect to each other. The catches 12 are mounted in the rail 11, a
80 recess 17 being provided for such purposes, said recess opening into a passage 18 into which extends the catch 12. The top wall 19 of the passage 18 constitutes a support for the catch when the latter is projected. The
85 catches 12 are connected to the rail 11 by pins or lugs 20 which extend through the slots 13, the pins or lugs 20 furthermore limiting the outward movement as well as the inward movement of the catches 12. De-
90 pending from each of the catches 12 is a lug 21 having one end of an expansible and contractible spring 22 connected thereto, the other end of said spring 22 being secured to an eye 23 carried by the rail 11. When the
95 catches are in the position as shown in Fig. 1 the springs 22 are expanded so that when the catches are released the springs 22 will contract and project the catches 12 against the toothed rails so that the catches will en-
100 gage the ledges formed by the flat faces 6 of the teeth to prevent the elevator cage from falling.

The catches 12 are maintained in an inoperative position by a locking arm 24 pro-
105 vided at each end with a hook 25 and which engages in the notch 16 of the catch as clearly shown in Fig. 1. The locking arm 24 is mounted upon a vertically-extending shiftable rod 26, the latter extending through the rail 11 and a yoke 27 and coupled as at
110 28 to the elevator cable 8. The rod 26 also carries a boss 30 which abuts against the arm

24 and is engaged by an expansible and contractible spring 31 interposed between the boss and the yoke 27. When the cable 8 is taut the spring 31 will be held in a state of compression and the locking arm maintained in engagement with the notches of the catches. To prevent the rod 26 from pulling through the rail 11 the lower end of the rod is provided with a nut 32 which engages the cross piece 33 carried by the rail 11. When the cable 8 is taut as before stated the spring 31 will be under a state of compression and the arm 24 will have the hooked ends 25 thereof in engagement with the notches of the catches so as to maintain the catches in an inoperative position, but if through any cause the cable 8 becomes slack or breaks, the spring 31 will expand and force the locking arm downwardly whereby the hooked ends 25 will be moved out of engagement with the catches 12, thereby releasing the springs 22, these latter contract-

ing and forcing the catches 12 to the position shown in Fig. 3.

What I claim is:—

A safety appliance for elevators comprising a pair of automatically projectable catches each having a beveled inner face and a beveled outer face and further having in proximity to the beveled face a V-shaped notch, a spring fixed at one end and connected at its other end to a catch, an arm provided with means engaging in said notches for maintaining said catches in an inoperative position and against the action of said springs, said arm when released from the catches permitting the latter to be automatically projected to operative position.

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

LOUIS KANTOR.

Witnesses:

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